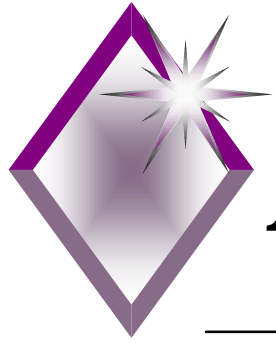


Systems Administration Efficiency Techniques

Presented by:
William L. Garner

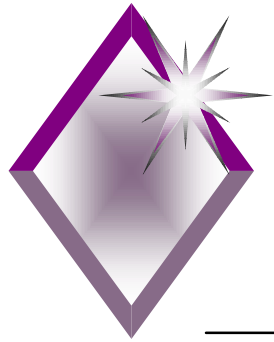
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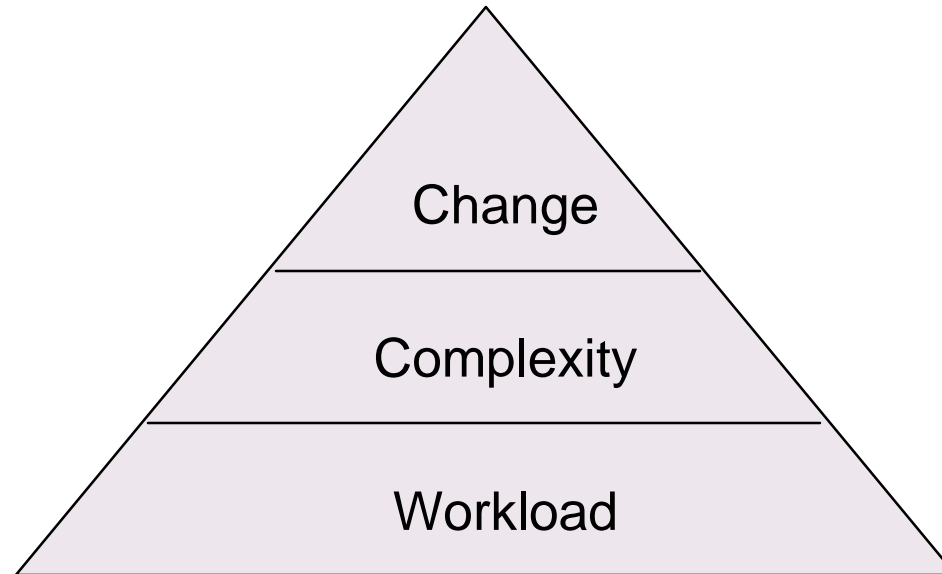
Discussion Topics

- ◆ Why are System Administrators Inefficient
- ◆ Efficiency Techniques Overview
- ◆ Implementing Efficiency Techniques
- ◆ Maintaining Efficiency in your Environment
- ◆ Efficiency Techniques Wrap-up



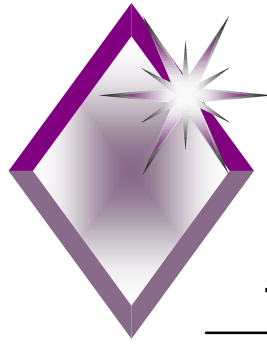
Why are System Administrators Inefficient?

Inefficiency: A most costly side effect.



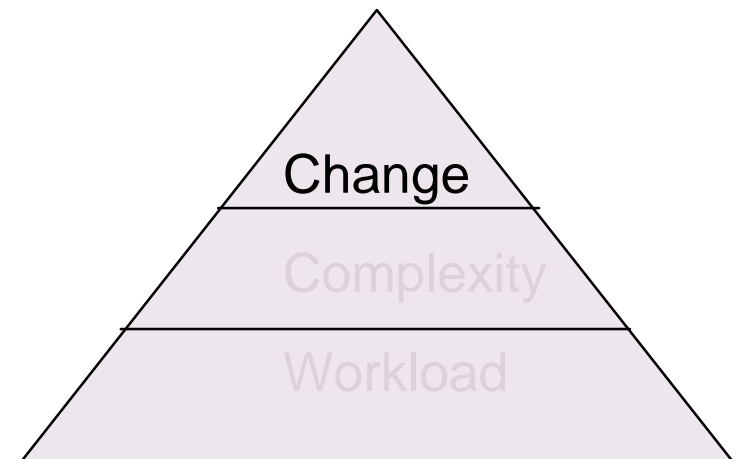
"We have found the enemy, and he is us."

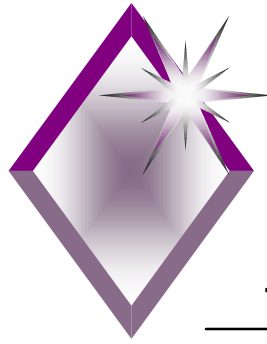
Hagar the Horrible



Why are System Administrators Inefficient?

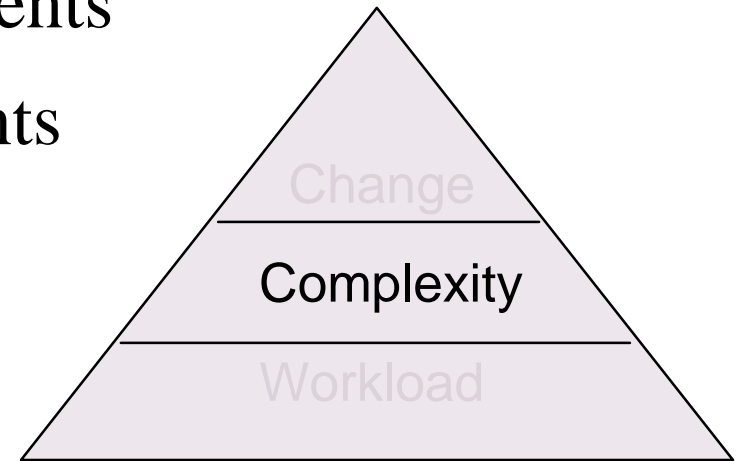
- ◆ Hardware Changes
- ◆ O/S Upgrades
- ◆ O/S Patches
- ◆ O/S Installs
- ◆ User Needs/Requirements
- ◆ Application Changes
- ◆ Personnel Turnover

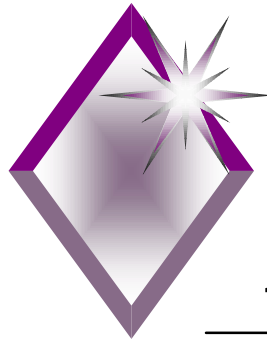




Why are System Administrators Inefficient?

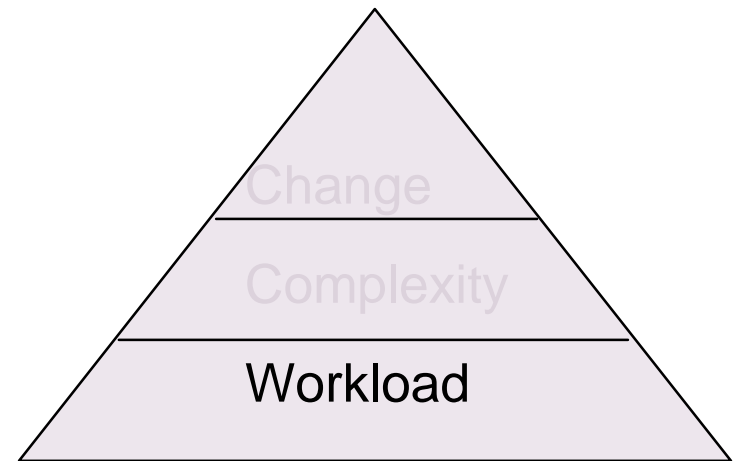
- ◆ Heterogeneous Environments
- ◆ Client Server Environments
- ◆ Inter-related Applications
- ◆ Conflicting Requirements
- ◆ Conflicting Demands

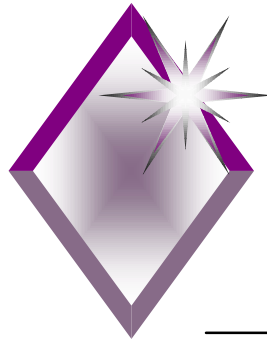




Why are System Administrators Inefficient?

- ◆ More Change
- ◆ More Machines
- ◆ More Disks
- ◆ More Applications
- ◆ More Users
- ◆ Less Downtime
- ◆ Fewer Administrators

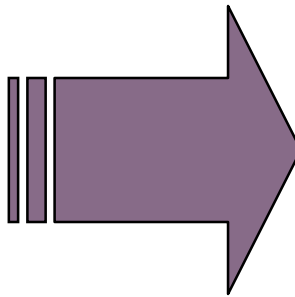




Efficiency Techniques Overview

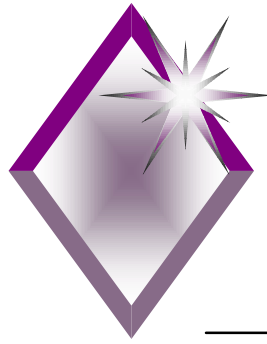
Reduce the effort
required to manage:

- ◆ Change
- ◆ Complexity
- ◆ Workload



By implementing:

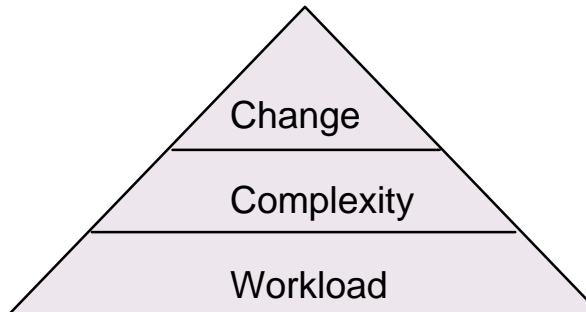
- ◆ Standardization
 - ◆ Simplification
 - ◆ Automation
 - ◆ Delegation
 - ◆ Imagination
-

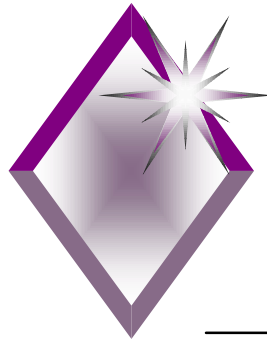


Efficiency Techniques Overview

Driving the level of
effort required down
by introducing:

Simplification
Standardization
Automation
Delegation
Imagination





Efficiency Techniques Overview

Simplification

Standardization

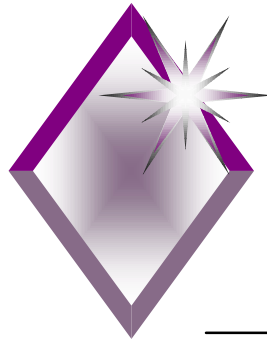
Automation

Delegation

Imagination

- ◆ Removes unnecessary complexity from your environment
- ◆ Allows consistency
- ◆ Leads to a predictable, repeatable and stable environment

Simplification allows your organization to become predictable and therefore more stable.

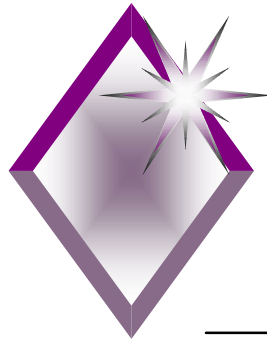


Efficiency Techniques Overview

Simplification
Standardization
Automation
Delegation
Imagination

- ◆ Enables all administrators to do the same task, the same way
- ◆ Brings maturity to your organization
- ◆ Sets up an environment for automation & training

Standardization allows your organization to mature

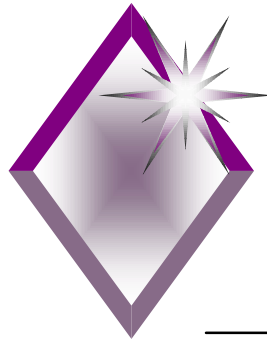


Efficiency Techniques Overview

Simplification
Standardization
Automation
Delegation
Imagination

- ◆ Free up your administrators to perform other tasks
- ◆ Allows less experienced administrators the opportunity to learn
- ◆ Sets up an environment for delegation of tasks

Automation allows experienced administrators the time and opportunity to train and mentor those less experienced on your staff

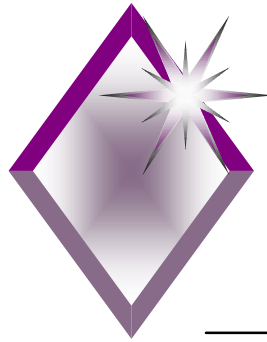


Efficiency Techniques Overview

Simplification
Standardization
Automation
Delegation
Imagination

- ◆ Allows level balancing of activities across all administrators
- ◆ Requires training in a “hands-on”, learn as you go scenario
- ◆ Brings training and experience levels up gradually

Delegation allows distribution of roles and responsibilities across all administrators where each is increasing their experience level and technically growing

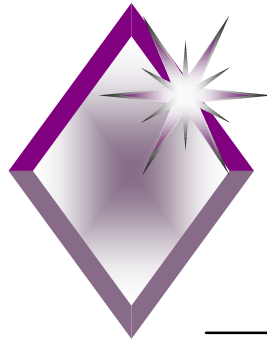


Efficiency Techniques Overview

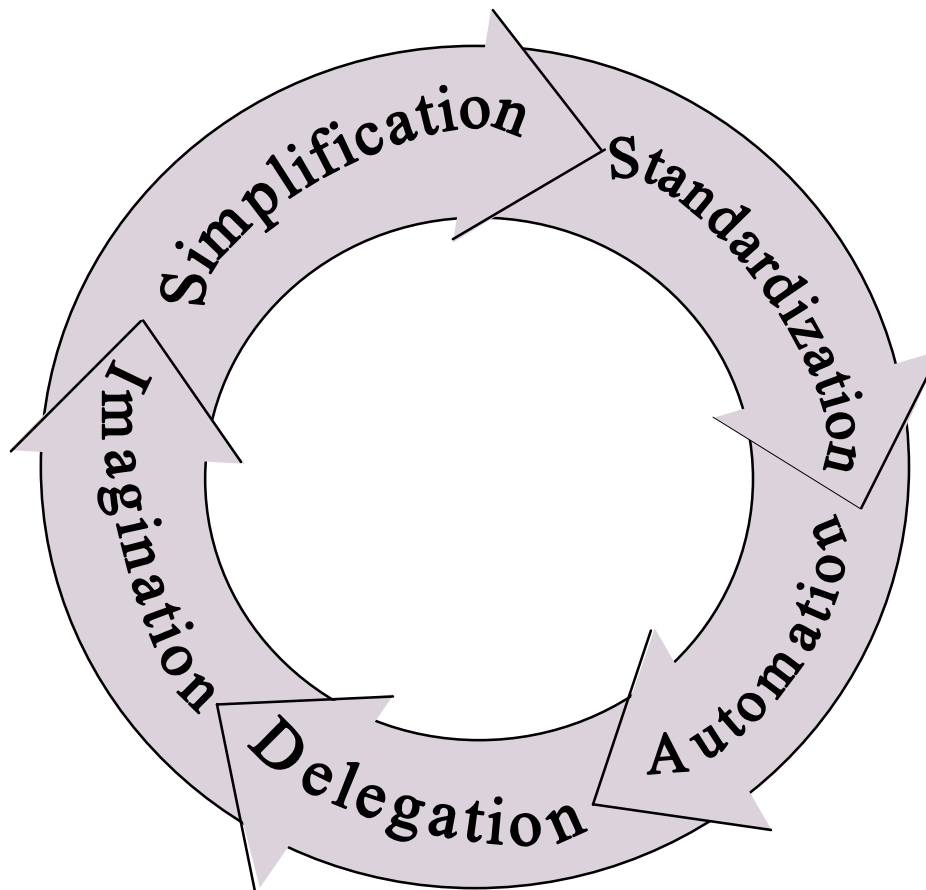
Simplification
Standardization
Automation
Delegation
Imagination

- ◆ Requires creativity
- ◆ More people, more experience, more ideas
- ◆ More input, better solutions
- ◆ Less complexity, more simplicity

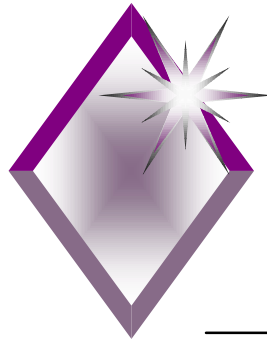
Having a larger pool of experience helps an organization
gain confidence and brings stability and predictability to
your environment



Efficiency Techniques Overview



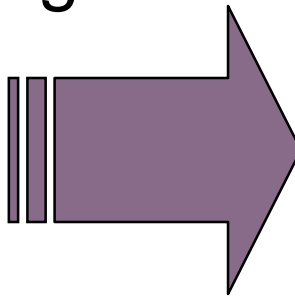
- ◆ Self-sustaining environment
- ◆ Work gets done
- ◆ Administrators are trained to do their job
- ◆ Administrators are challenged to be creative
- ◆ All team members find new, better ways to bring simplicity, standards, automation, delegation and imagination to their jobs.



Implementing Efficiency Techniques

Reduce the effort
required to manage:

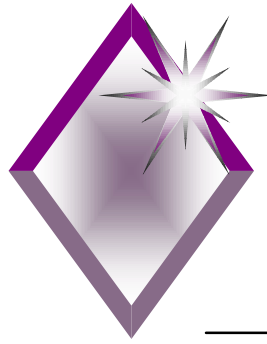
- ◆ Change
- ◆ Complexity
- ◆ Workload



By implementing:

- ◆ Standardization
- ◆ Simplification
- ◆ Automation
- ◆ Delegation
- ◆ Imagination

HOW????

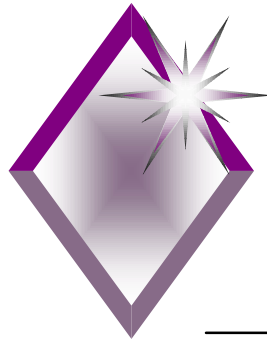


Implementing Efficiency Techniques

To turn complexity into simplicity requires:

... a new think in the following areas:

- ◆ Your Organization
- ◆ Your Environment
- ◆ Your Approach

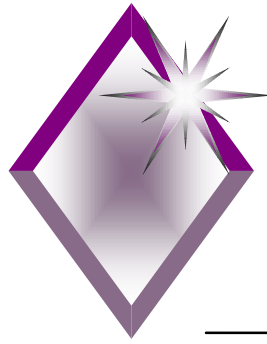


Implementing Efficiency Techniques

Your Organization:

- ◆ Sr. Architect
- ◆ Line Administrators
- ◆ Jr. Administrators

Create an environment for advancement and training by establishing formal roles and responsibilities based on level of experience and work requirements for your organization

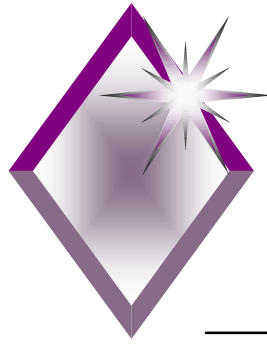


Implementing Efficiency Techniques

Your Environment:

- ◆ Practical Standardization & Consistency
 - ◆ Indoctrinate New Administrators on Standards & Procedures
 - ◆ Establish Meaningful Audits
 - ◆ Tie the level of compliance to Performance Review
-

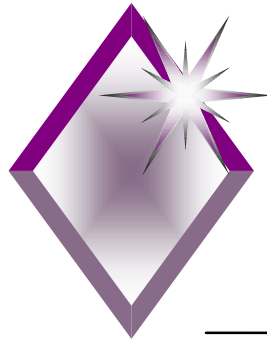
Caesar conquered the world with Standards and Consistency



Implementing Efficiency Techniques

Your Approach:

- ◆ Architect Simplicity in all areas
- ◆ Universal Training in all Environmental Tools
- ◆ “Certify” Administrators in Tools & Procedures



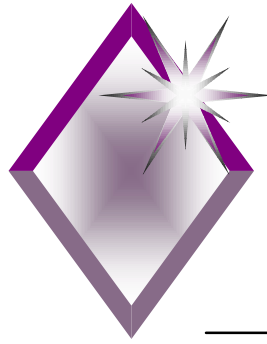
Implementing Efficiency Techniques

To turn a chaotic and changing environment into a stable and evolving environment one must:

... be disciplined and dedication to maintaining standards in the following areas:

- ◆ The Basics
- ◆ System Documentation
- ◆ Environmental Documentation

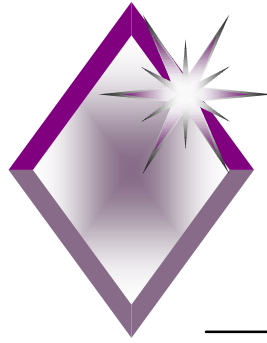
We can't stop change, but we can reduce the impact change will have on your environment.



Implementing Efficiency Techniques

Standardize The Basics:

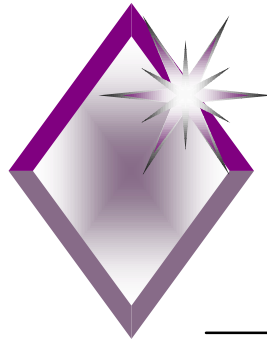
- ◆ O/S Installations
 - ◆ Patch Application
 - ◆ Tool Suites
 - ◆ Monitoring
 - ◆ Application Installations
-



Implementing Efficiency Techniques

Standardize System Documentation:

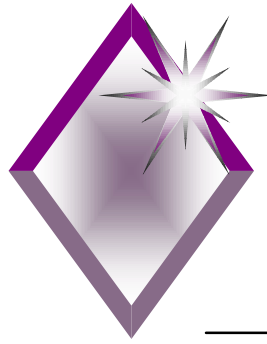
- ◆ Configuration Details
- ◆ Recovery Information
- ◆ Availability Information



Implementing Efficiency Techniques

Standardize Environmental Documentation:

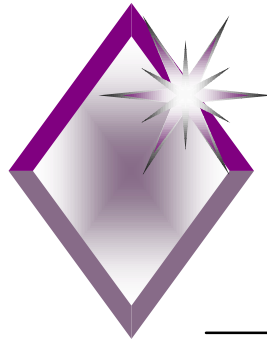
- ◆ Service Level Agreements
- ◆ Disaster Recovery
- ◆ Backup Procedures
- ◆ Security Policy



Implementing Efficiency Techniques

To move your environment from workload over-load to one of delegation and automation one must:

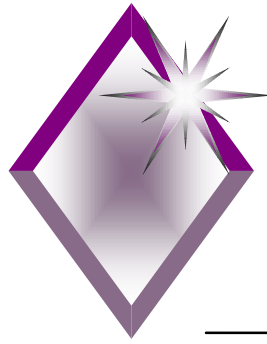
- ◆ Recognize Personnel Levels
 - ◆ Segregate Activity
 - ◆ Identify Proper Tools
 - ◆ Automate Proper Tasks
 - ◆ Develop a Monitoring Strategy
-



Implementing Efficiency Techniques

Recognize Personnel Levels:

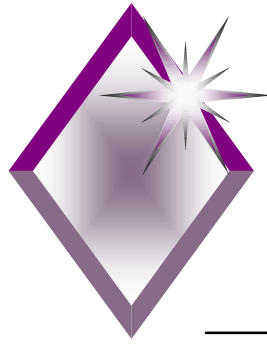
- ◆ Clearly Define Roles & Responsibilities
- ◆ Encourage Advancement & Training
- ◆ Develop a Mentoring Program



Implementing Efficiency Techniques

Segregate Activity:

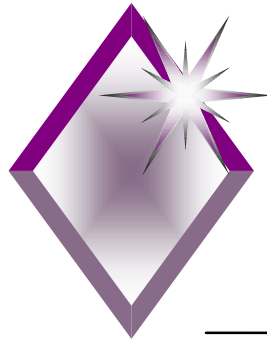
- ◆ Design/Standards/Procedures
- ◆ High Level Activities
- ◆ Simple Activities



Implementing Efficiency Techniques

Identify Proper Tools :

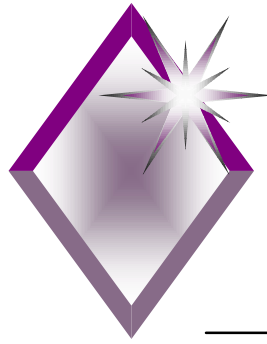
- ◆ Environment Requirements
- ◆ Capabilities of Tools



Implementing Efficiency Techniques

Automate Proper Tasks :

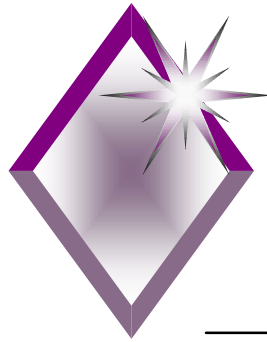
- ◆ Job Schedule
- ◆ Backups, Recovery
- ◆ Monitoring Tools



Implementing Efficiency Techniques

Develop a Monitoring Strategy :

- ◆ What should be monitored
- ◆ Frequency/Schedule
- ◆ Monitoring Tool Utilization



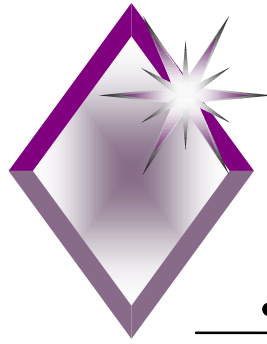
Implementing Efficiency Techniques

To turn stagnation into imagination one must:

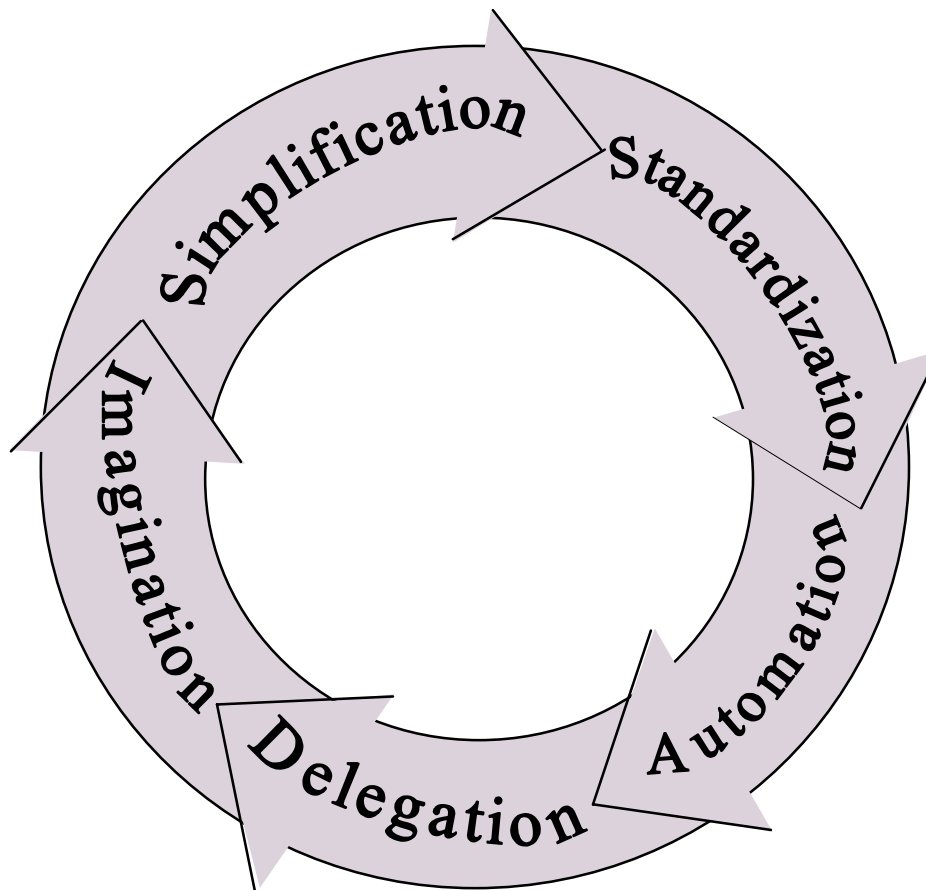
... recognize Systems Administration is not a “creative” job, however:

- ◆ Work with tools you have to solve problems
- ◆ Strike a balance between “thinking outside of the box” and standardization
- ◆ Keep training, Keep learning

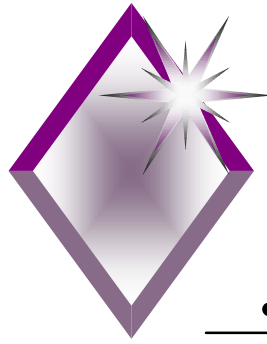
Continue to adapt within the framework



Maintaining Efficiency in your Environment



- ◆ Need a plan for keeping your organizational environment simple
- ◆ Need a plan for maintaining organizational standardization
- ◆ Need a framework to implement change

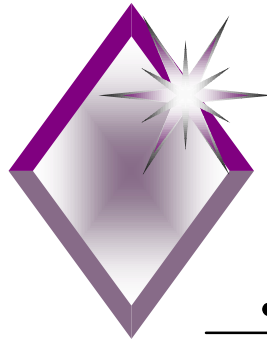


Maintaining Efficiency in your Environment

Systems Production Acceptance Methodology (SPAM):

- ◆ Platform Independent
- ◆ Auditable
- ◆ Efficient
- ◆ Measurable
- ◆ Predictable
- ◆ Controllable

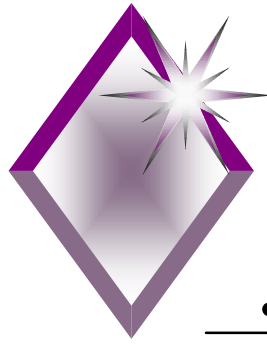
Continue to maintain control while reacting quickly to
changes in your environment



Maintaining Efficiency in your Environment

SPAM Benefits:

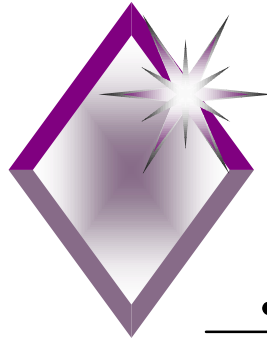
- ◆ Ensures stable, predictable environment
 - ◆ Generates support documents
 - ◆ Promotes consistent configurations
 - ◆ Promotes thorough implementations
 - ◆ Promotes use of standards
 - ◆ Becomes a model for teaching new administrators
 - ◆ Provides auditable, manageable process
-



Maintaining Efficiency in your Environment

What is SPAM?

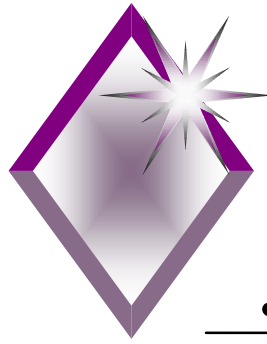
- ◆ 5 Phased approach to manage and implement system change
 - ◆ Team approach
 - ◆ Effective communication
 - ◆ Measurable
 - ◆ Provides control
 - ◆ Forces planning
-



Maintaining Efficiency in your Environment

5 Phases of SPAM:

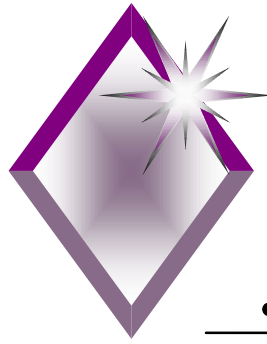
- ◆ Requirements Definition
- ◆ Operational Preparation
- ◆ Implementation
- ◆ Acceptance Testing
- ◆ Production Turnover



Maintaining Efficiency in your Environment

Requirements Definition

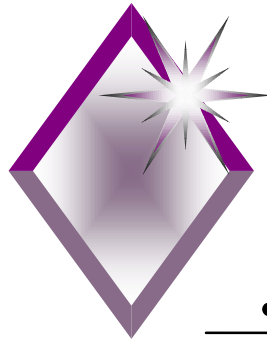
- ◆ Project initiation
- ◆ Identify participants
- ◆ Identify application
- ◆ Begin sizing machine
- ◆ Identify supporting applications
- ◆ Identify support needs
- ◆ Define project schedule
- ◆ Assign responsibility
- ◆ Document requirements
- ◆ Document software needs



Maintaining Efficiency in your Environment

Operational Preparation

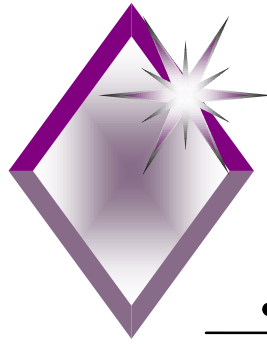
- ◆ Define logistics
- ◆ Plan configuration
- ◆ Plan system monitoring
- ◆ Establish implementation plan
- ◆ Plan acceptance testing strategy
- ◆ Begin maintenance procedures
- ◆ Order hardware
- ◆ Order software
- ◆ Establish service level agreement
- ◆ Start documenting processes and procedures
- ◆ Begin planning production turnover



Maintaining Efficiency in your Environment

Implementation

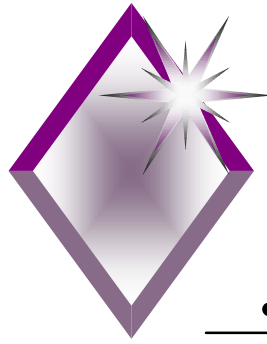
- ◆ Acquire hardware and software
- ◆ Execute implementation plan
- ◆ Document installation
- ◆ Execute and test system monitoring plan
- ◆ Begin turnover plan
- ◆ Finalize maintenance procedures
- ◆ Finalize and document processes and procedures
- ◆ Establish escalation process
- ◆ Prepare auxiliary support documentation



Maintaining Efficiency in your Environment

Acceptance Testing

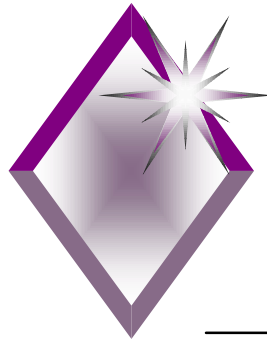
- ◆ Test in a controlled manner
- ◆ Test every support process
- ◆ Test every support script
- ◆ Test backup & recovery
- ◆ Ensure accuracy of documentation
- ◆ Uncover problems before production
- ◆ Test monitoring capability
- ◆ Gain familiarity with performance characteristics
- ◆ Begin user training



Maintaining Efficiency in your Environment

Production Turnover

- ◆ All tests are complete
- ◆ Maintenance is defined, documented and tested
- ◆ Support is defined, documented and tested
- ◆ System security is implemented
- ◆ User training is complete
- ◆ Turnover plan is complete
- ◆ Turnover plan is executed

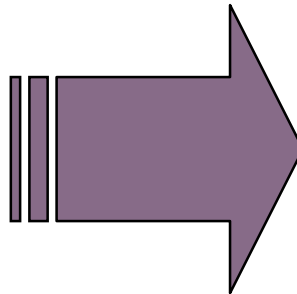
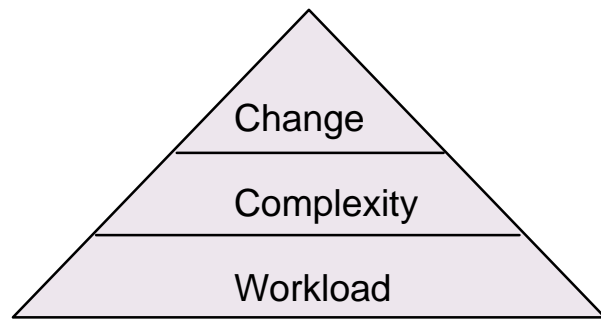


Efficiency Techniques

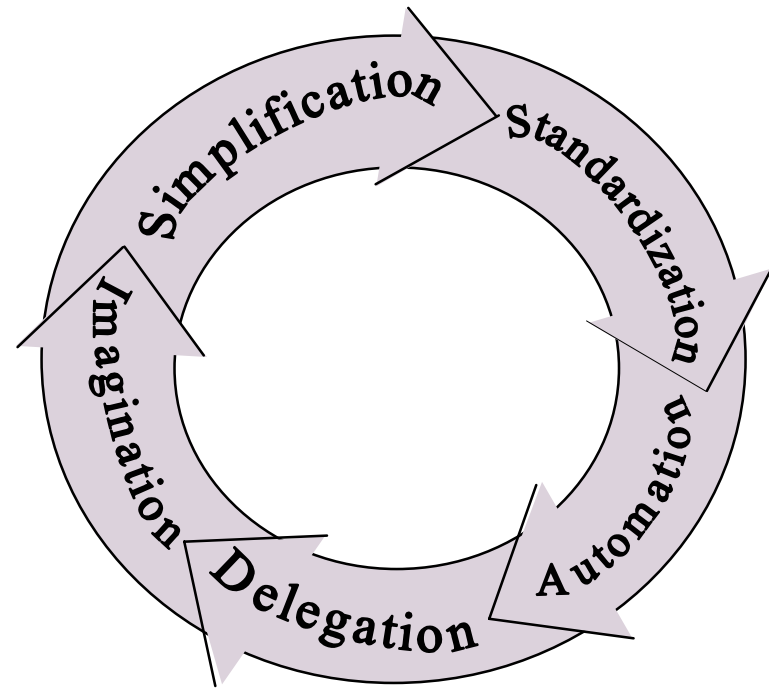
Wrap-up

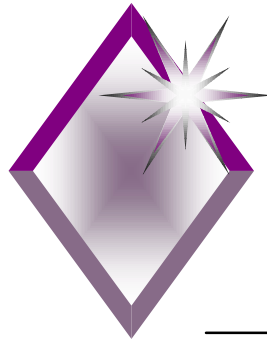
To turn chaos into success one must:

Reduce the effort
required to manage:



By implementing:





Efficiency Techniques

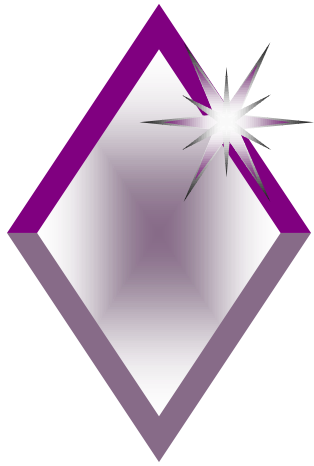
Wrap-up

To keep chaos out of your environment
remember to:

- ◆ Communicate
- ◆ Document
- ◆ Delegate
- ◆ Standardize
- ◆ Leverage team experience
- ◆ Demand accountability

“There are two major products that came out of Berkeley:
LSD and UNIX. This is no coincidence.”

Jeremy Anderson



Systems Administration Efficiency Techniques

Presented by:
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