

# Americas Systems TSC

## Knowledge Programs Content Normalization

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# What is “Content Normalization?”

- “Normalization” is an OutSights-branded method which structures group knowledge into findable, context-driven solutions
- Includes:
  - > Symptoms
  - > Best practices
  - > Resolution procedures
  - > Known solutions
  - > New solutions
- Allows people to solve more without asking or escalating
- Helps customers address their own issues before calling Sun

# Problem Statement & Pain Points

- Current content and its structure are not provided to internal or external users in a cohesive or consistent manner.
- This impacts the ability to solve problems effectively and timely.
- Pain points are identified in various ways:
  - > Volume/Complexity
  - > Executive priorities
  - > TTR and CFI
  - > Parts against product
  - > Findability issues in SunSolve

# Normalization Process

- Identify business pain points and utilize criteria to establish priorities OR use impact valuation model
- Identify and secure SMEs based on skill set/product
- Hold normalization workshop:
  - > Define high level problem areas or “topologies”
  - > Identify resolution paths
  - > Populate resolution paths with existing content
  - > Validate resolution paths with non-participants (partners or engineers)
- Establish maintenance processes via Domain Engineer
- Track impact over time

# Criteria for Normalization

<b>Strategic Focus</b>	Expect more than 100% growth
	Expect some growth
	Expect flat
	Expect declining demand
	Expect to end support
<b>Remote Resolution Efficiency</b>	Average - TTR has increased by more than 20% in last 6 months
	Average - TTR has been flat for last 6 months and is more than 5 days
	Average - TTR has been flat for last 6 months and is less than 5 days
<b>Field Resolution Efficiency</b>	Site visits or parts per case average more than 1.5
	Site visits or parts per case average more than 1.25
	Site visits or parts per case average less than 1.25
<b>Cost of Touch point</b>	Resolution completion occurs more than 80% of the time at the initiating touch point or without added resources
	Resolution completion occurs more than 60% of the time at the initiating touch point or without added resources
	Resolution completion occurs more than 40% of the time at the initiating touch point or without added resources
	Resolution completion occurs less than 40% of the time at the initiating touch point or without added resources
<b>CFI Rating</b>	CFI rating has gone up (degraded) in last 6 months
	CFI rating has been flat in last 6 months
<b>Baseline</b>	Case volume represents greater than 50% of total global demand
	Case volume represents greater than 25% of total global demand
	Case volume represents less than 25% of total global demand

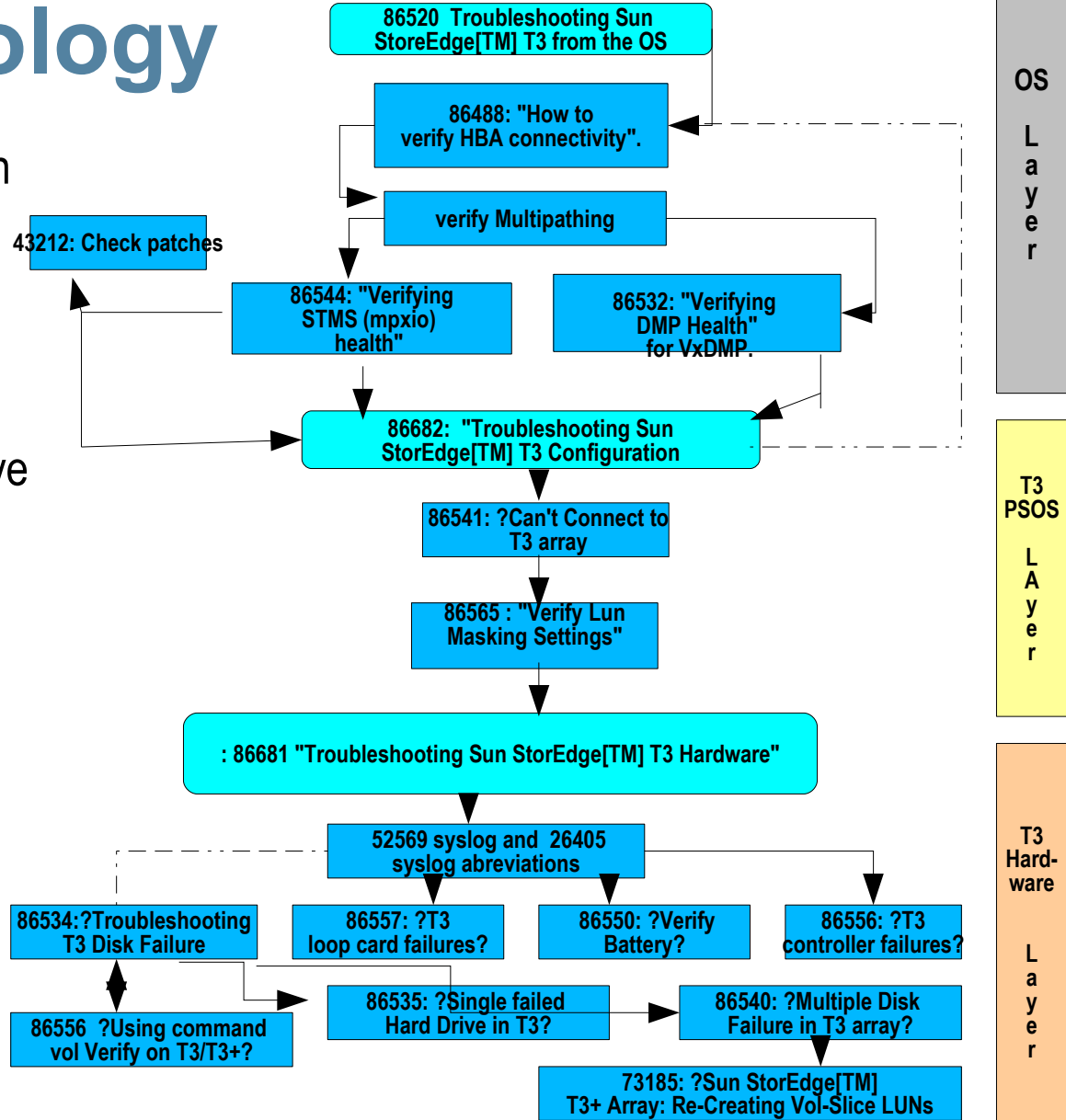
# Define High Level Problem Areas

1. Pick heavy hitters from data (Sun has done in past) **OR**
2. Use existing CRM or call tracking data and map to Impact Value model (**Sun will do for T1K normalization**).
  - > Calculate an Impact Value for cases in the data set.
  - > Prioritize into heaviest hitters or value buckets.

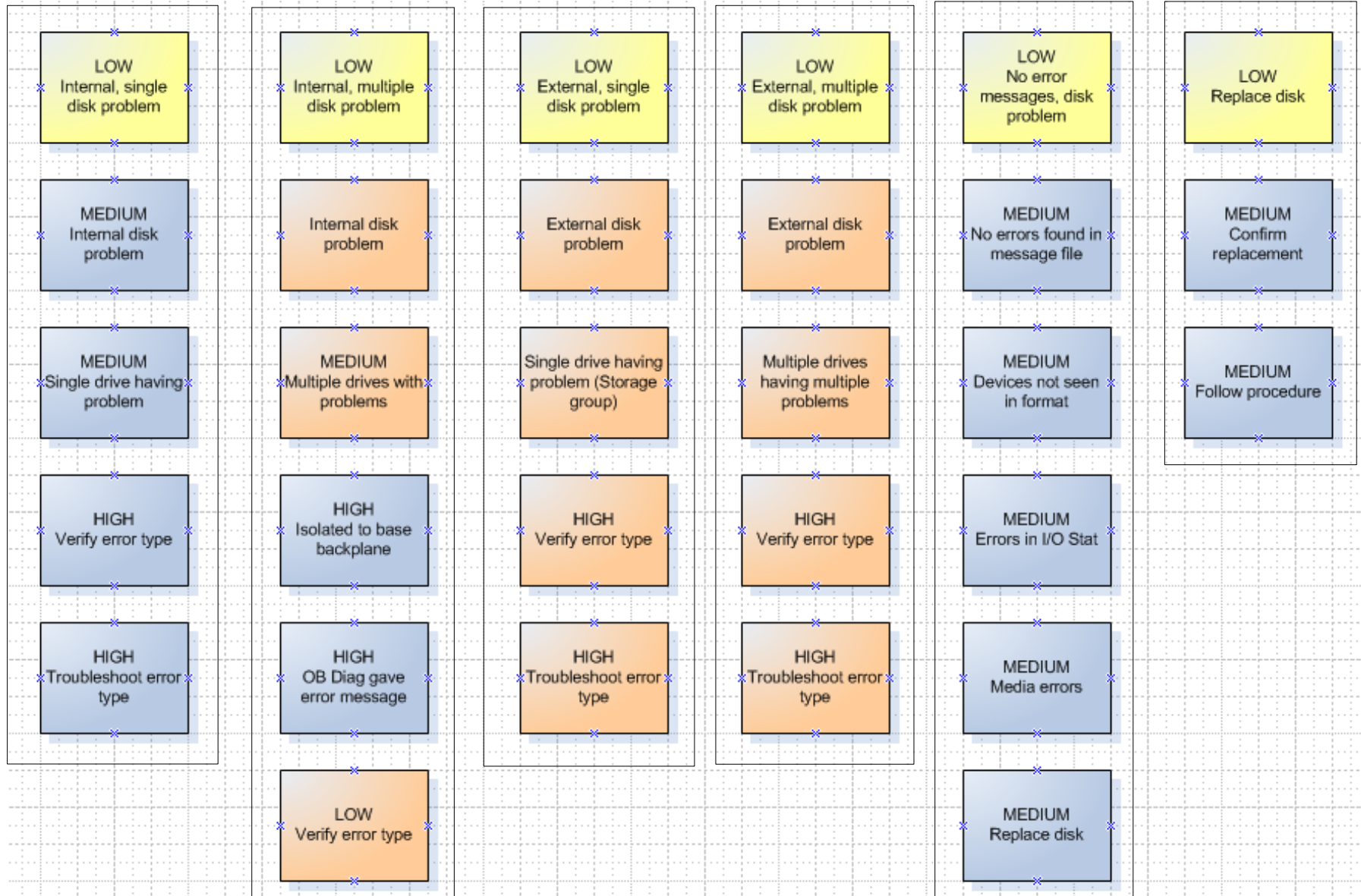
Collectio	Bucket	KO ID	Cases	Case Ratio	Cost Avg	Cost Sum	Cost Ratio
Network	Unknown Host		334	2.39%	55.9	18619.7	2.25%
	RPC		218	1.56%	83.0	18093.9	2.18%
	RAP		331	2.37%	54.6	18069.3	2.18%
	Inactivity Timeout		140	1.00%	99.8	13974.3	1.69%
	Unable to Send		97	0.70%	85.9	8246.6	1.00%
	Connection Refused		109	0.78%	64.0	6972.4	0.84%
	Connection Timed Out		50	0.36%	88.6	4428.5	0.53%
	Firewall		41	0.29%	46.6	1910.5	0.23%
	Client Backup Fails		57	0.41%	31.6	1801.1	0.22%
	Operation would block		26	0.19%	63.5	1650.9	0.20%
<b>Network Total</b>			<b>1403</b>	<b>10.05%</b>	<b>66.9</b>	<b>93767.1</b>	<b>11.32%</b>

# Sample Topology

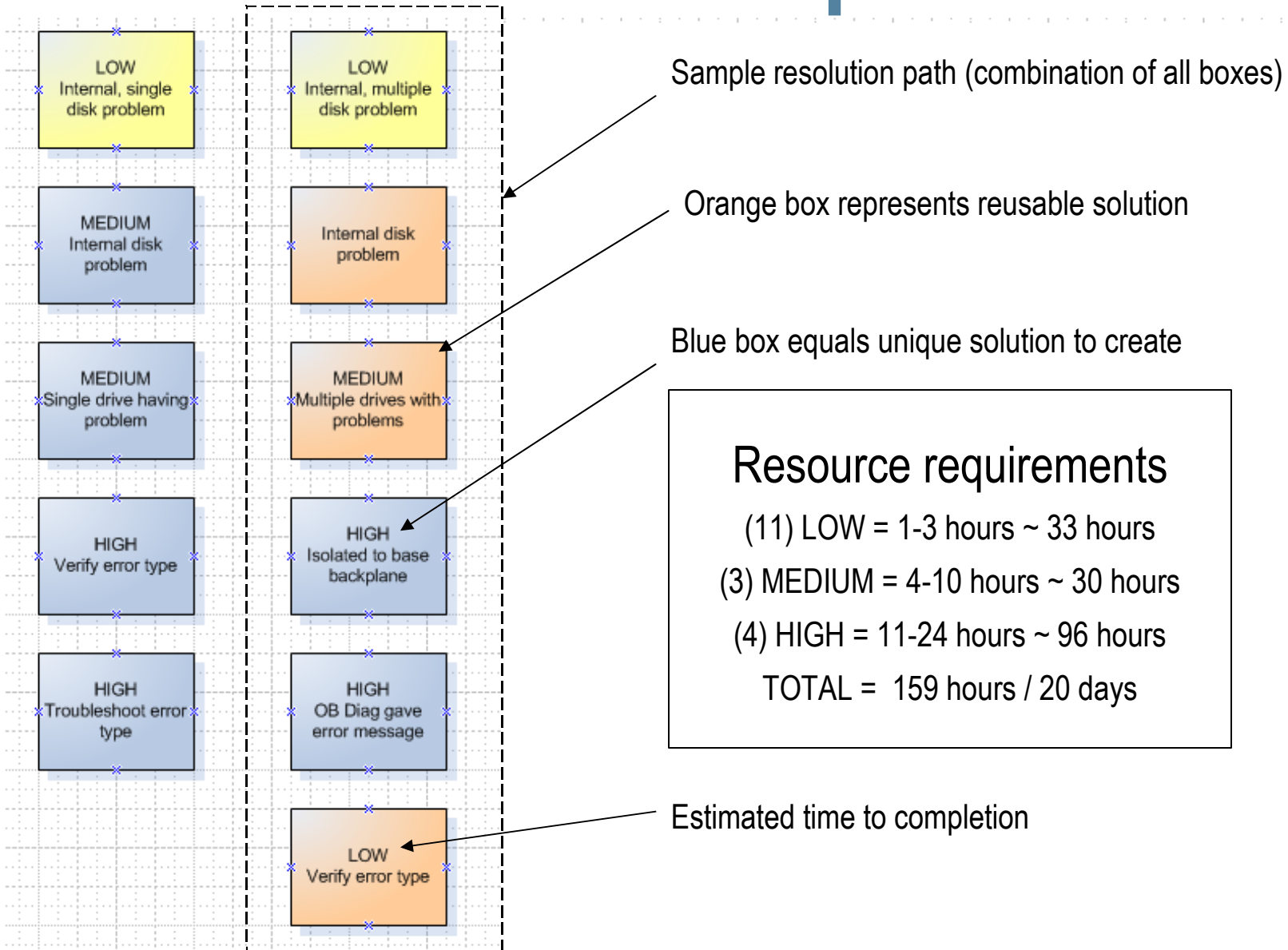
- Problems in storage happen in 3 areas:
  - > Server/OS layer
  - > Connectivity layer
  - > Array Layer
- The types of causes we have to drill down to are:
  - > Hardware
  - > Configuration
- Four areas of topology are:
  - > Symptomology
  - > Lifecycle
  - > Operations
  - > Component



# Resolution Paths Example



# Resolution Path Map



# What's Been Initialized

## Systems

- > V880 — Initialized November 2005
- > MidRange — To be initialized February 2007
- > OPL — To be initialized February 2007
- > T1K — Initialized December 2006

## Storage

- > T3 — Initialized August 2006
- > OS Tape — To be initialized December 2006

## Software

- > Not initialized

# Domain Engineer Role

## Qualifications

- > Needs to be a cognitive thinker more than a critical thinker.
- > Needs to be able to work on a broad range of products within the same family as opposed to having one area of specialization.

## Responsibilities

- > Minimize “content erosion” in their domain.
- > Continually analyze incoming demand (either new products or new problems) to build new resolution paths.
- > Domain Engineers receive specific training, have a designated domain focus over content and are accountable to new measures to manage “content erosion.”

# V880 Results (AUG Pilot)

## FY06

- % of content normalized
  - > .062% against the whole of SunSolve content
  - > 28% of V880 content
- Decrease Time to Resolve (TTR) on V880 in Partner space
  - > DEC 2.6, JAN 2.5, FEB 2.4 but not a lot of volume
- Decrease in Parts Usage on V880
  - > Weekly parts per case down to 1.65 (FEB 06)
  - > Target for ALL (product) parts per case 1.70
  - > (FEB06 = ALL product wppc avg 1.80)
- CFI from DEC-APR with **zero** V880 defects with the Sun Partner using the normalized content

# T3 Results

- We have early results indicating a reduction in TTR in this product space (median) by 1.4 days from AUG – OCT 2006
- Product support transitioned to a Sun Partner in OCT
  - > Results from the first month of partner support are being gathered and validated
  - > Developed a training methodology based on the T3 topology to train Partners on Sun Storage products
  - > Anecdotal feedback: “After using the content they [the Partner] started seeing the pattern of troubleshooting that the normalized content was using. They not only learned about the T3, but gained a better understanding of how to connect the different layers (i.e. application, OS, T3 configuration, T3 hardware) together.”

# FY07 Normalization Activity

- Technology Service Center (TSC) roadmap finalized
  - > Systems = 2 Product areas
  - > Storage = 2 Product areas
  - > Software = 1 product area
- “Viral” normalization planned for initialized TSCs (Storage and Systems)
- Global Knowledge Summit — Singapore January 2007
  - > Outcomes
    - > 1 TSC Global topology
    - > Domain Engineer implemented in 1 TSC and planned for 2<sup>nd</sup> TSC
    - > Global participation > expansion secured

# Lessons Learned

- **Only takes a few normalization workshops to define the topology for the entire product family**
  - > V880 (low-end server) topology created in 2005 has huge overlap with Mid-Range and OPL (high-end servers) topology in 2006.
  - > A server is a server is a server...the fundamental architecture is the same.
- **Problems don't vary that widely, but the solutions do**
  - > All of logic behind the V880 resolution paths built in 2005 was relevant for the resolution paths for Mid-Range and OPL.
  - > Reduces time to normalize and ultimately time to resolve.

# Lessons Learned, cont.

- **You need to qualify your normalization resources**
  - > Most assume the most technical resources will be the best normalizers.
  - > Best normalizers often end up being those who can see the “big picture” with how the customer experiences the product.
  - > Only normalizing heavy hitters to hit sweet spot of demand and alleviate resource drain on long TTR durations. Sometimes most technical get the escalations and only know the exceptions.
- **Normalization doesn't have to be a workshop**
  - > After a few workshops, the topology and resolution paths can be leveraged within the same product family.

# Lessons Learned, cont.

- **If you don't maintain, results won't sustain**
  - > Your results will plateau over time if resources do not continue to maintain the content and keep it fresh. That is the nature of knowledge management.
  - > Within the normalization methodology, the Domain Engineer role exists for resources to maintain the content.
  - > Domain Engineers receive specific training, have a designated domain focus over content and are accountable to new measures to manage “content erosion.”
  - > The Domain Engineers job is to minimize “content erosion” in his domain and continue to analyze incoming demand to build new resolution paths.

# Lessons Learned, cont.

- **Pick a product with high volume**
  - > Products with lower volume will still work, but take a longer time to show ROI.
- **Mature products are easy targets**
  - > Products ready to offload to a lower cost point (Partner or Web) tend to be those that have been around longer. New issues are harder to come by. Only hitch is there may be a lot more content to wade through.
- **Don't have do a lot to have a big impact**
  - > V880 only addressed 28% of its demand overall and was able to maintain the lowest CFI rating to date.
  - > Didn't sustain the result because they didn't maintain the content.

# Other Companies' Results

Effects on performance as a whole (over 90 days):

	Time to Link	Time to Relief	Time to Close	Median Time to Close
Non-normalized	5	3	30	7
Normalized	4	2	23	6

Effects on performance per product (over 90 days):

	BEFORE Time to Close	BEFORE Median Time to Close	Target	AFTER Time to Close result
Networking product for UNIX	60	3	6	7
Networking product for Exchange	34	8	16	13
Windows Server	15	6	12	0
Networking product for Oracle	40	11	22	7
Management Console	16	6	12	6
Exchange Module	31	15	30	11
Snap Image Module	88	22	44	36
SQL	30	6	12	3

**Thank You**