

Gartner

2009 Comparisons – Summary Findings

Summary Findings

Comparison Group Profiles

Comparison Group Profiles

	Total Number of Peers	Total Number of Utilities in Peer Group	Number of Peers in Top Quartile	Number of Utilities in Top Quartile
Client & Peripherals	20	6(3)	5	0
Help Desk	20	5(2)	5	1(1)
Mainframe	8	1(1)	2	0
UNIX	20	7(4)	5	4(3)
Wintel	20	7(5)	5	2(2)
Storage	20	3(1)	5	0
LAN	20	10(4)	5	2(1)
WAN	20	10(6)	5	1(1)
Internet Access	16	6(4)	4	0
Remote Access	20	10(7)	5	5(5)
Wide Area Voice-VNS	20	10(7)	5	1(1)
Wide Area Voice-PTN	8	7(4)	2	2(1)
Voice Premise-PBX	20	11(7)	5	3(2)
Voice Premise-VoIP	12	6(3)	3	2(2)

* (x) indicates number of peers from UNITE

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Summary Findings

Unit Cost Comparisons

Unit Cost Comparison by IT Area

	Unit of Measure	Entergy		Entergy		Utilities		Peer -		Peer -		Utilities	
		2008 Cost	2009 Cost	2008 Cost	2009 Cost	Peer Cost	Peer Avg	Top Quartile	Top Half	Database Avg	Database Avg	Peer Avg	Peer Avg
Client & Peripherals	Users	\$1,014	\$933	\$1,216	\$1,265	\$1,012	\$1,160	\$1,422	\$1,235				
Help Desk	Inbound Contacts	\$10.86	\$11.13	\$17.16	\$17.01	\$10.47	\$12.64	\$18.64	\$17.33				
Mainframe	MIPS	\$9,536	\$9,075	\$6,494	\$6,185	\$4,415	\$5,109	\$5,224	\$6,040				
UNIX	OS Instances	\$31,947	\$28,182	\$26,247	\$21,572	\$12,399	\$16,900	\$31,202	\$39,070				
Wintel	OS Instances	\$5,201	\$4,202	\$8,152	\$7,485	\$4,632	\$6,032	\$8,803	\$9,085				
Storage	TB Installed	\$5.38	\$3.53	\$8.22	\$8.16	\$3.52	\$5.50	\$17.17	\$9.14				
LAN	Active Ports	\$115	\$92	\$130	\$127	\$77	\$91	\$164	\$121				
WAN	Devices	\$283	\$267	\$312	\$259	\$146	\$189	\$330	\$264				
Internet Access	GB of Traffic	\$2.60	\$2.41	\$6.29	\$5.04	\$2.05	\$3.91	\$7.86	\$6.09				
Remote Access	Users	\$70	\$87	\$77	\$111	\$50	\$61	\$128	\$79				
Wide Area Voice-VNS	Minutes	\$0.0398	\$0.0433	\$0.0296	\$0.0320	\$0.0168	\$0.0233	\$0.0439	\$0.0329				
Wide Area Voice-PTN	Minutes	\$0.0090	\$0.0095	\$0.0325	\$0.0349	\$0.0066	\$0.0108	\$0.0297	\$0.0363				
Voice Premise-PBX	Extensions	\$162	\$147	\$166	\$194	\$107	\$128	\$280	\$193				
Voice Premise-VoIP	Extensions	\$165	\$148	\$308	\$314	\$228	\$263	\$306	\$312				

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Summary Findings

Key Findings

- Entergy's total IT infrastructure investment for 2009 at \$60.2M, is 20% lower than the Workload peer average. Entergy's costs are 3% higher than the Top Half (better performing) of the Workload peer and 29% higher than the Top Quartile peer group.
 - Entergy's costs are 22% lower than the utility peer.
- Entergy continues to be a cost efficient IT operation. From 2008 to 2009, Entergy's total IT infrastructure costs have decreased by 8%, yet unit cost changes varied by IT tower.
 - Unit costs have increased in Help Desk, Remote Access and Voice Networks. The largest increase is in Remote Access where costs have increased by 24%.
 - Unit costs have decreased in all other IT towers with the greatest decreases in Storage (34%), LAN (20%) and Wintel (19%).
- In aggregate, Entergy's Hardware/Software and Transmission costs fall between the Top Quartile and Top Half peer groups.
 - Hardware/Software costs are higher than the Workload peer average in Mainframe, UNIX and Wide Area Data Network.

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Summary Findings

Key Findings

- Personnel costs in aggregate are in-line with the Industry peer and slightly below the Workload peer average. Personnel costs vary across the IT towers.
 - Personnel costs are higher than the Workload and Industry peers in Mainframe, UNIX ,Wide Area Data, Remote Access and Virtual Voice Network. The largest gaps are in UNIX and WAN.
- Entergy has done an excellent job of remaining a cost effective IT organization.
- Although Entergy has begun to implement virtualization in the server environment, adoption appears to be at a slower rate than Gartner Research indicates for IT industry.
- As Entergy ramps up virtualization implementation, Storage should continue to be monitored to ensure that the additional complexity does not result in unplanned additional costs. Entergy may begin to lose some efficiency if precautions are not taken.

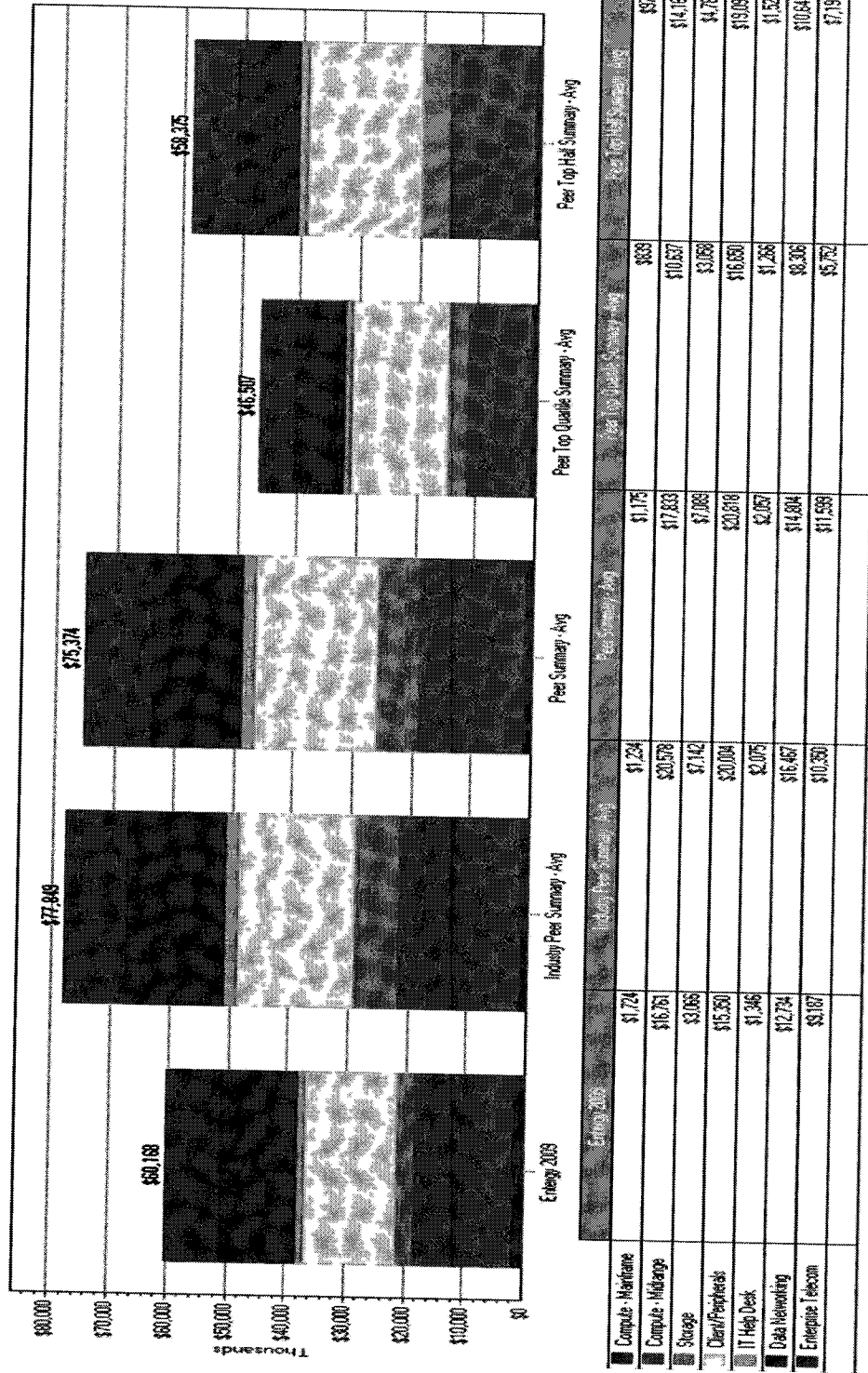
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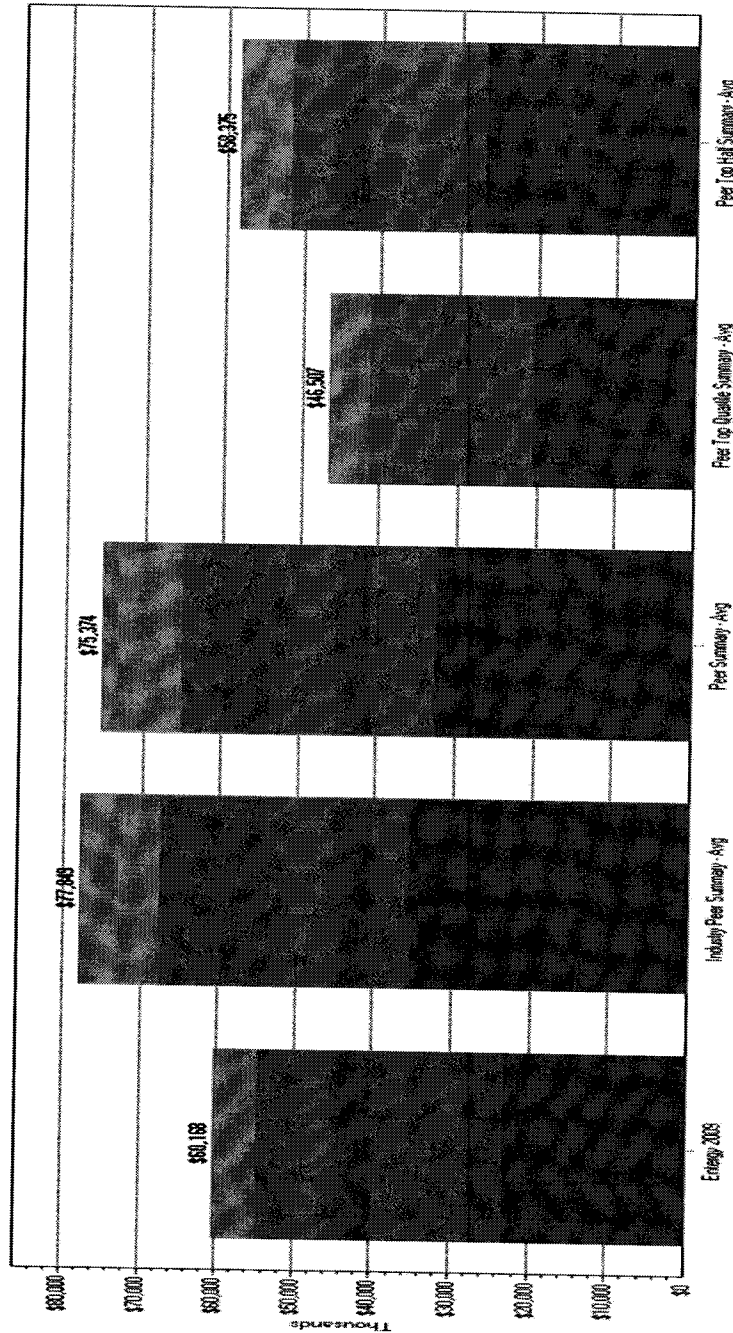
Executive Summary

Total Spending by Functional Area



Executive Summary

Total Spending by Cost Category



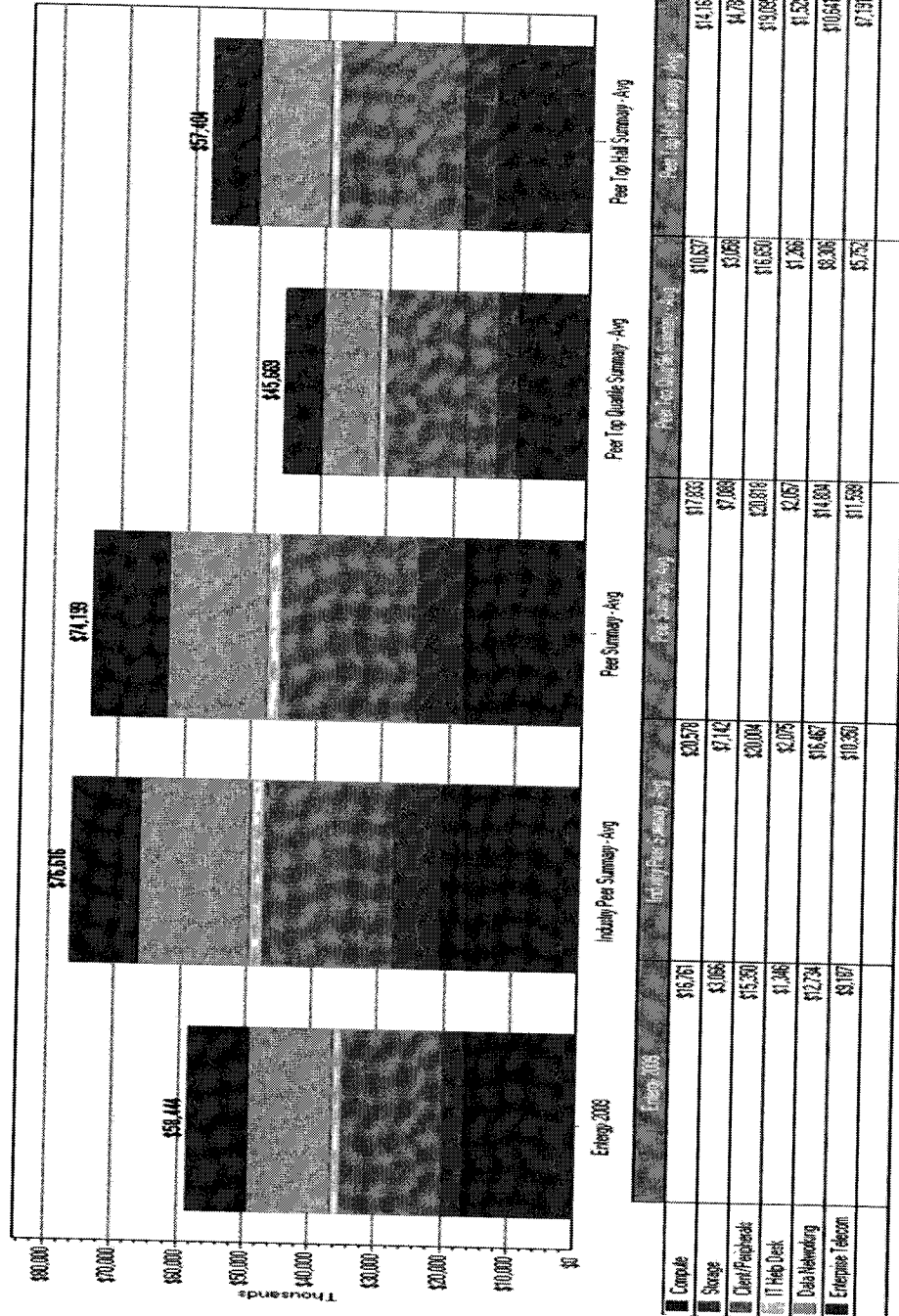
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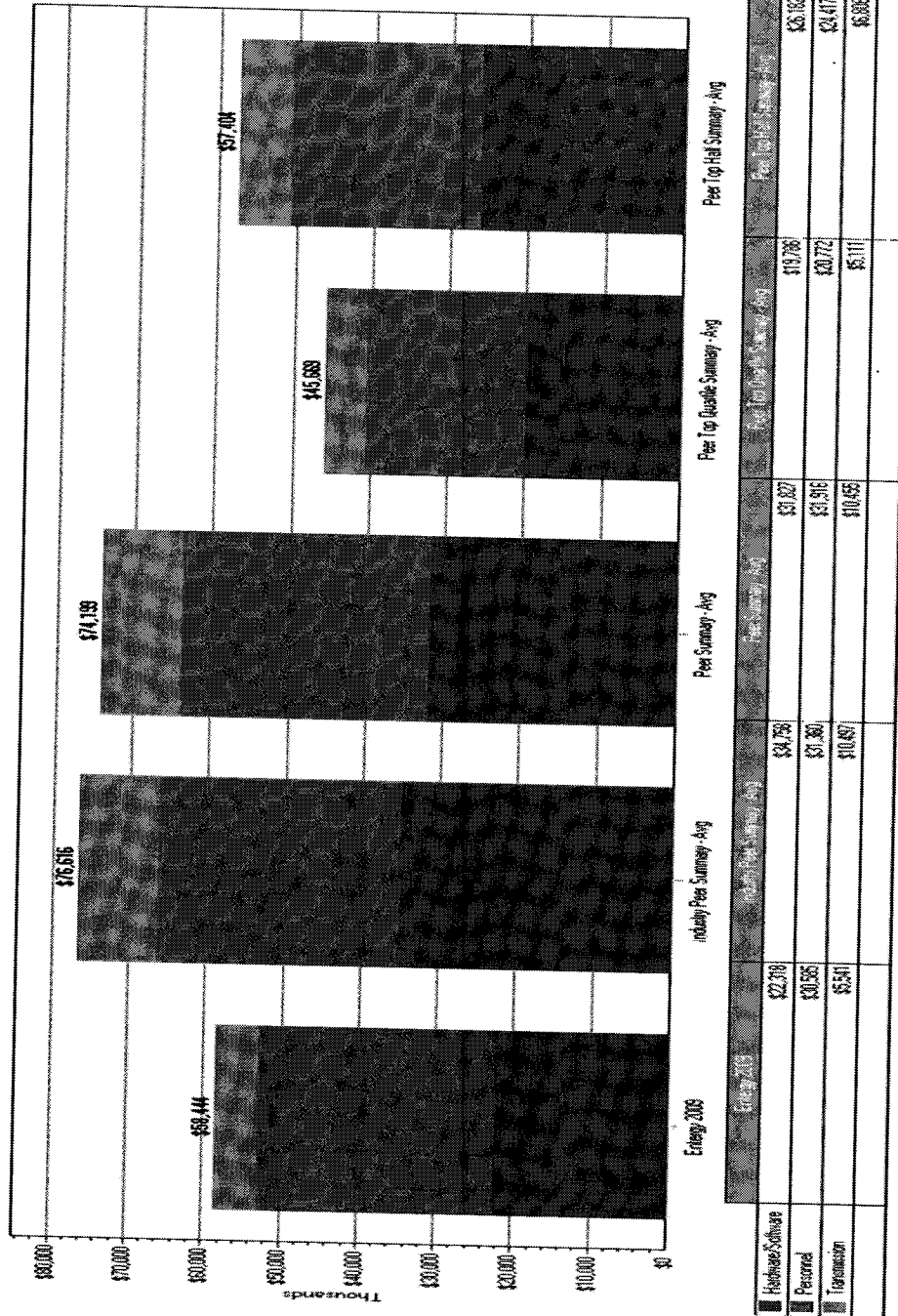
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Executive Summary – Mainframe Excluded Total Spending by Functional Area



Executive Summary – Mainframe Excluded Total Spending by Cost Category



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Year to Year Comparisons ■ ■ ■ 2008 versus 2009

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Summary Findings

Unit Comparisons by IT Area

Year to Year Efficiency Analysis – 2008 versus 2009

	Entergy			2008			2009			2008 Peer 2009 Peer			%		
	2008 Cost	Entergy	2009 Cost	2008 Cost	Entergy	2009 Cost	2008 Utilities	Peer Cost	2009 Utilities	Peer Cost	2008 Peer	2009 Peer	- Avg	- Avg	Variance
Client & Peripherals	\$1,014		\$933	\$1,150		\$1,216	\$1,150	\$1,216	\$1,216	\$1,216	\$1,299	\$1,265	\$16.27	\$17.01	-3%
Help Desk	\$10.86		\$11.13	\$14.99		\$17.16	\$14.99	\$17.16	\$17.16	\$17.16	\$16.27	\$17.01	\$9.286	\$6,185	5%
Mainframe	\$9,536		\$9,075	\$8,222		\$6,494	\$8,222	\$6,494	\$6,494	\$6,494	\$9,286	\$6,185	\$30,875	\$21,572	-33%
UNIX	\$31,947		\$28,182	\$30,745		\$26,247	\$30,745	\$26,247	\$26,247	\$26,247	\$30,875	\$21,572	\$6,877	\$7,485	-30%
Wintel	\$5,201		\$4,202	\$6,382		\$8,152	\$6,382	\$8,152	\$8,152	\$8,152	\$6,877	\$7,485	\$14.35	\$8.16	9%
Storage	\$5.38		\$3.53	\$16.18		\$8.22	\$16.18	\$8.22	\$8.22	\$8.22	\$14.35	\$8.16	\$159	\$127	-43%
LAN	\$115		\$92	\$159		\$130	\$159	\$130	\$130	\$130	\$159	\$127	\$285	\$259	-20%
WAN	\$283		\$267	\$297		\$312	\$297	\$312	\$312	\$312	\$285	\$259	\$6.70	\$5.04	-9%
Internet Access	\$2.60		\$2.41	\$8.04		\$6.29	\$8.04	\$6.29	\$6.29	\$6.29	\$6.70	\$5.04	\$93	\$111	-25%
Remote Access	\$70		\$87	\$68		\$77	\$68	\$77	\$77	\$77	\$93	\$111	\$0.0383	\$0.0320	19%
Wide Area Voice-VNS	\$0.0398		\$0.0433	\$0.0353		\$0.0296	\$0.0353	\$0.0296	\$0.0296	\$0.0296	\$0.0383	\$0.0320	\$0.0228	\$0.0349	-16%
Wide Area Voice-PTN	\$0.0090		\$0.0095	\$0.0207		\$0.0325	\$0.0207	\$0.0325	\$0.0325	\$0.0325	\$0.0228	\$0.0349	\$235	\$194	53%
Voice Premise-PBX	\$162		\$147	\$217		\$166	\$217	\$166	\$166	\$166	\$235	\$194	\$395	\$314	-17%
Voice Premise-VoIP	\$165		\$148	\$408		\$308	\$408	\$308	\$308	\$308	\$395	\$314			-21%

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Summary Findings

Unit Comparisons by IT Area

Year to Year Efficiency Analysis – 2008 versus 2009 (cont.)

	2008 Peer 2009 Peer			2008 Peer 2009 Peer		
	- Top Quartile	- Top Quartile	% Variance	- Top Half	- Top Half	% Variance
Client & Peripherals	\$820	\$1,012	23%	\$944	\$1,160	23%
Help Desk	\$11.47	\$10.47	-9%	\$12.70	\$12.64	0%
Mainframe	\$5,855	\$4,415	-25%	\$6,988	\$5,109	-27%
UNIX	\$23,782	\$12,399	-48%	\$26,134	\$16,900	-35%
Wintel	\$4,923	\$4,632	-6%	\$7,226	\$6,032	-17%
Storage	\$8.53	\$3.52	-59%	\$9.84	\$5.50	-44%
LAN	\$120	\$77	-36%	\$128	\$91	-29%
WAN	\$226	\$146	-35%	\$242	\$189	-22%
Internet Access	\$2.73	\$2.05	-25%	\$4.28	\$3.91	-9%
Remote Access	\$33	\$50	52%	\$54	\$61	13%
Wide Area Voice-VNS	\$0.0292	\$0.0168	-42%	\$0.0319	\$0.0233	-27%
Wide Area Voice-PTN	\$0.0085	\$0.0066	-22%	\$0.0125	\$0.0108	-14%
Voice Premise-PBX	\$155	\$107	-31%	\$182	\$128	-30%
Voice Premise-VoIP	\$164	\$228	39%	\$245	\$263	7%

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Summary Findings

Unit Comparisons by IT Area

Year to Year Efficiency Analysis – 2008 versus 2009 (cont.)

	2008			2009			2008			2009		
	Database	Avg	Variance	Database	Avg	%	Utilities	Database	Avg	Utilities	Database	%
Client & Peripherals	\$1,458	\$1,422	-2%	\$1,422	\$1,235	-3%	\$1,277	\$1,235				
Help Desk	\$19.95	\$18.64	-7%	\$18.64	\$17.33	5%	\$16.54	\$17.33				
Mainframe	\$6,505	\$5,224	-20%	\$5,224	\$6,040	-18%	\$7,366	\$6,040				
UNIX	\$34,332	\$31,202	-9%	\$31,202	\$39,070	14%	\$34,213	\$39,070				
Wintel	\$8,969	\$8,803	-2%	\$8,803	\$9,085	-3%	\$9,347	\$9,085				
Storage	\$23.57	\$17.17	-27%	\$17.17	\$9.14	-61%	\$23.33	\$9.14				
LAN	\$152	\$164	8%	\$164	\$121	-14%	\$140	\$121				
WAN	\$324	\$330	2%	\$330	\$264	-7%	\$283	\$264				
Internet Access	\$10.95	\$7.86	-28%	\$7.86	\$6.09	-30%	\$8.64	\$6.09				
Remote Access	\$97	\$128	32%	\$128	\$79	-4%	\$82	\$79				
Wide Area Voice-VNS	\$0.0438	\$0.0439	0%	\$0.0439	\$0.0329	-16%	\$0.0392	\$0.0329				
Wide Area Voice-PTN	\$0.0264	\$0.0297	13%	\$0.0297	\$0.0363	12%	\$0.0325	\$0.0363				
Voice Premise-PBX	\$277	\$280	1%	\$280	\$193	-14%	\$224	\$193				
Voice Premise-VoIP	\$387	\$306	-21%	\$306	\$312	-16%	\$372	\$312				

Database average includes all industries and geographies within past 18 months.
Utilities Database average is a subset of the Database average, including only utilities for all geographies.

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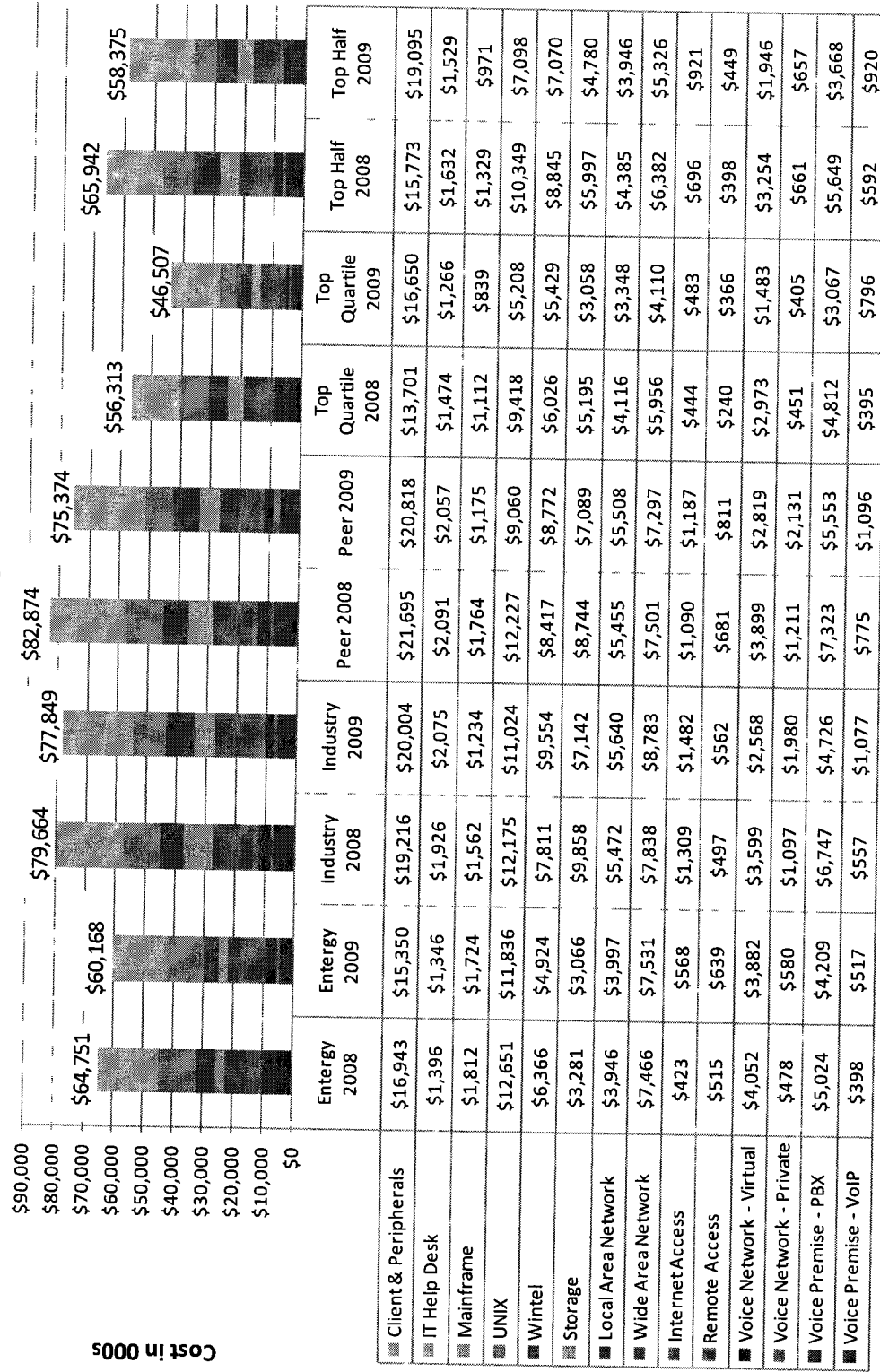
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Summary Findings

2008 vs. 2009

2008 costs have not been adjusted for
2009 workload volumes.

Year to Year Analysis



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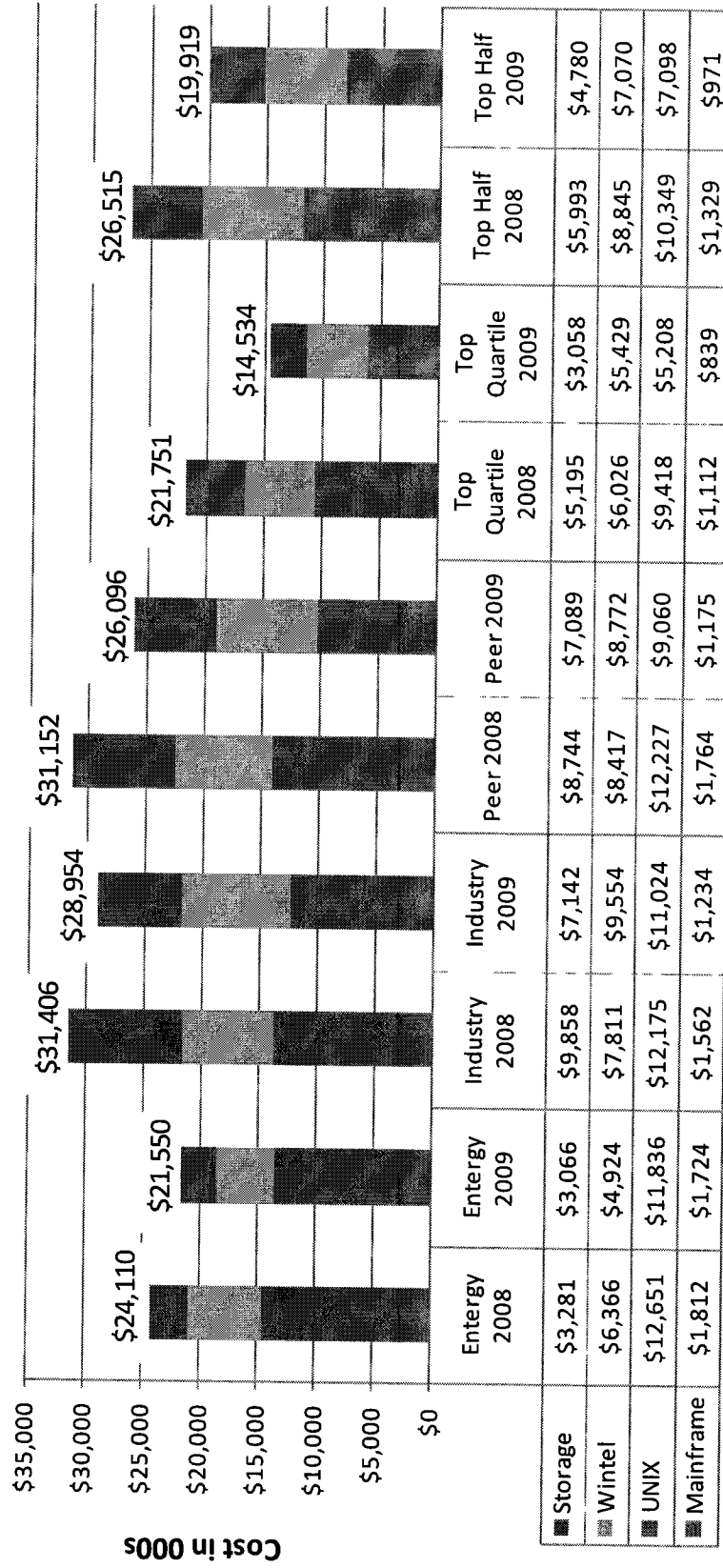
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Summary Findings

Enterprise Computing - 2008 vs. 2009

2008 costs have not been adjusted for 2009 workload volumes.

Year to Year Enterprise Computing



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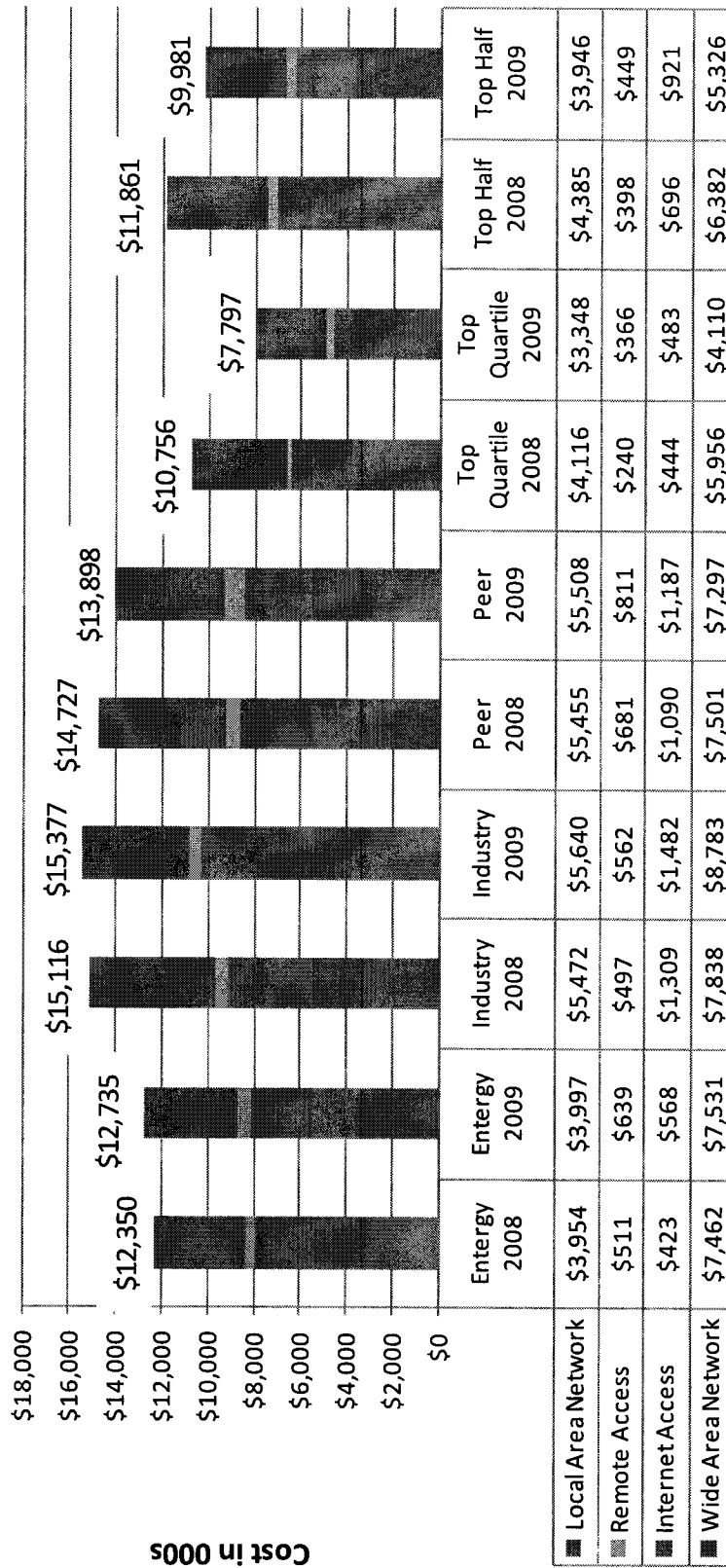
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Summary Findings

Data Network - 2008 vs. 2009

2008 costs have not been adjusted for 2009 workload volumes.

Year to Year Data Networks



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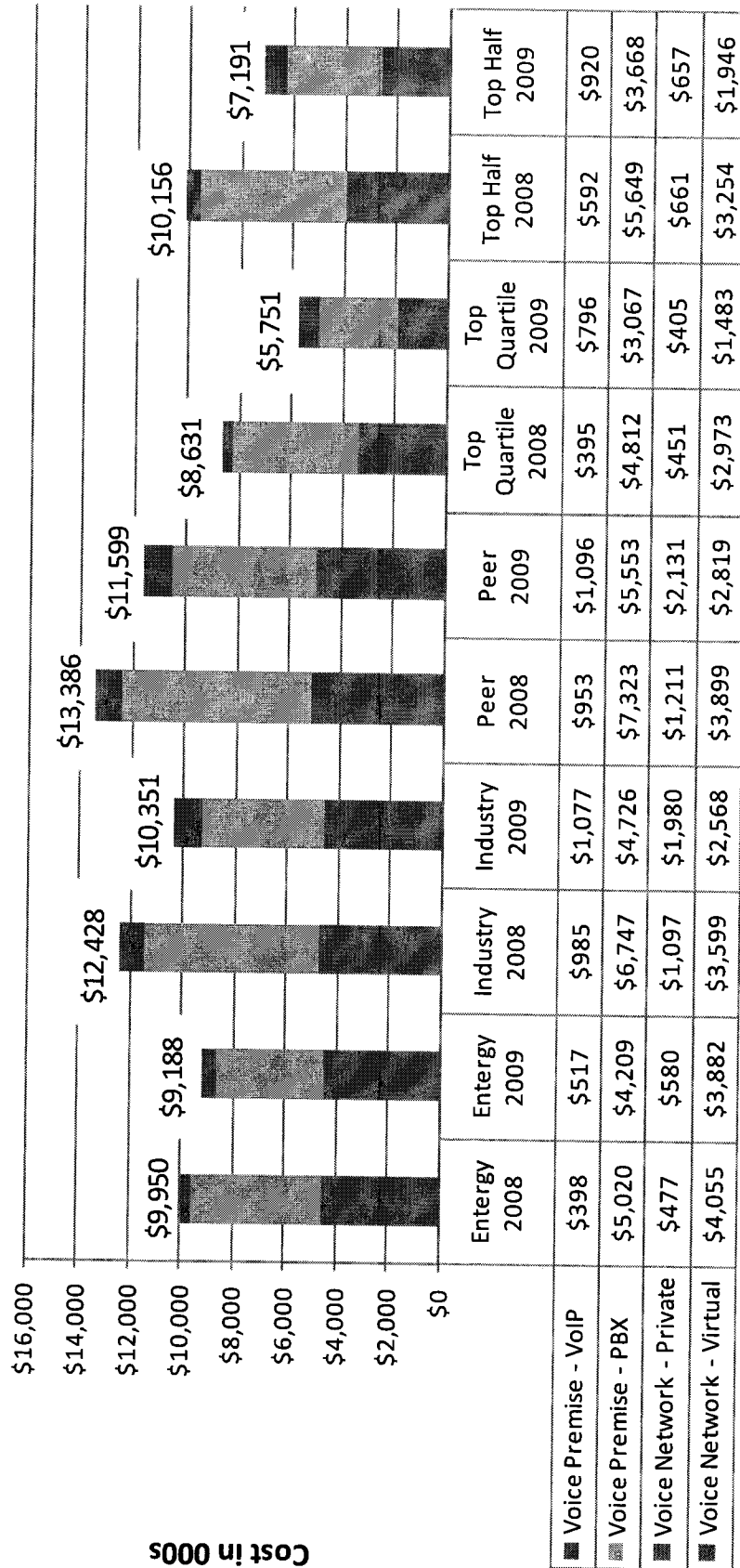
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Summary Findings

Voice Network - 2008 vs. 2009

2008 costs have not been adjusted for 2009 workload volumes.

Year to Year Voice Networks



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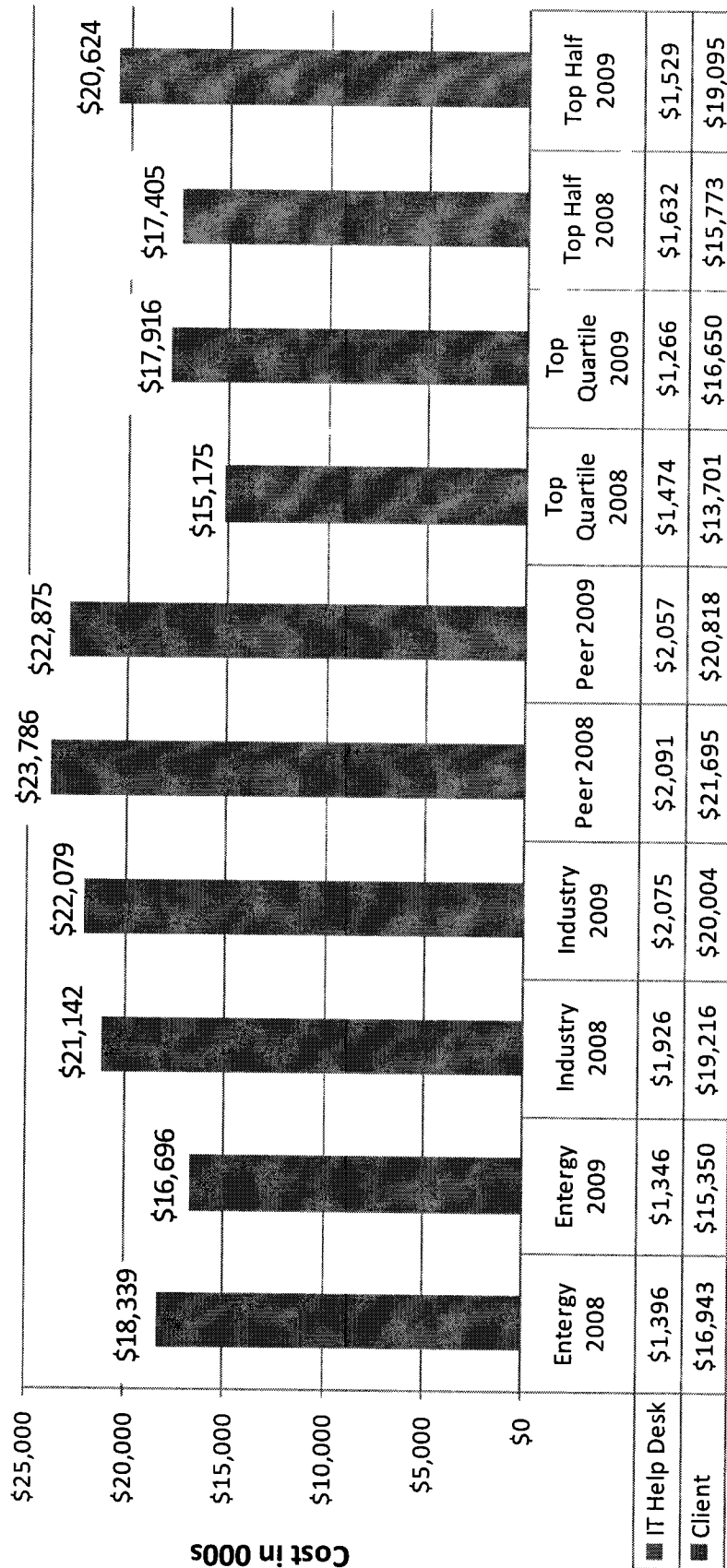
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Summary Findings

Desktop & Help Desk - 2008 vs. 2009

2008 costs have not been adjusted for 2009 workload volumes.

Desktop & Help Desk



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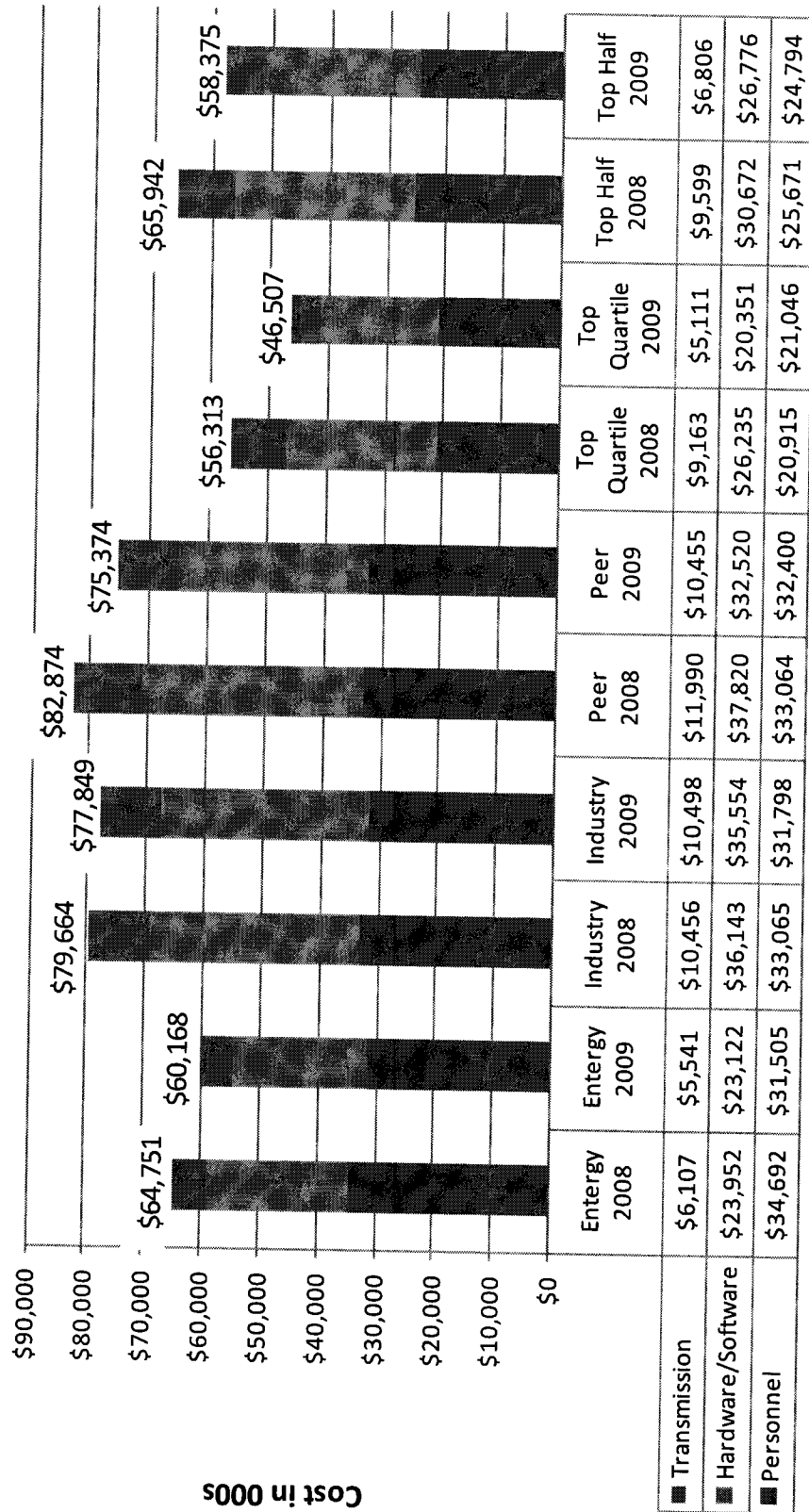
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Summary Findings

2008 costs have not been adjusted for 2009 workload volumes.

IT Spending by Cost Category – 2008 vs. 2009

Total Spending by Cost Category



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Summary Findings

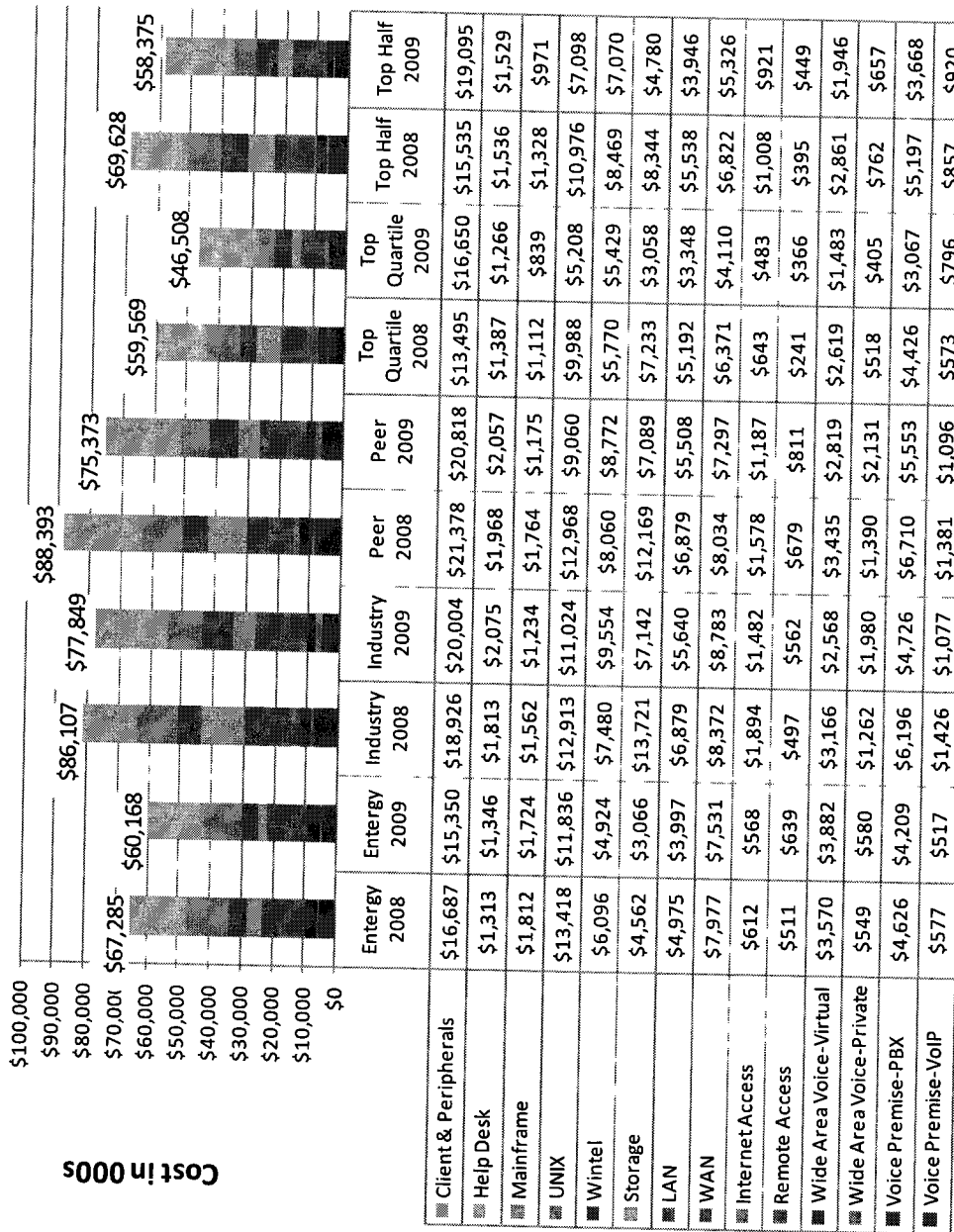
2008 vs. 2009 – “Volume Adjusted” Comparisons

- The following chart reflects 2008 costs by IT area reflective of 2009 volumes at 2008 unit costs; this was applied to Entergy as well as all 2008 comparison groups data.
- By making this adjustment to 2008 data, one can view Entergy’s comparisons year over year from a different perspective.
 - Note that the adjustment does not reflect the fact that the nature of the volumes in 2009 might be different than those in 2008. For example, while “installed mips” as a unit of measure is relatively consistent year over year, the average computing capability and virtualization of Entergy’s servers in the server benchmarks are greater than what they were in 2008.
 - With the exception of the server environments, however, the impact of inherent differences in the nature of the volumes is probably negligible.

Summary Findings

2008 vs. 2009 – “Volume Adjusted” Comparisons

Year to Year Analysis



2008 costs have been adjusted reflect 2009 workload volumes.

	2009	Units
Client & Peripherals	16,457	Users
Help Desk	120,936	Contacts
Mainframe	190	MIPS
UNIX	420	OS Instances
Wintel	1,172	OS Instances
Storage	868,352	GB
LAN	43,263	Active Ports
WAN	28,189	Devices
Internet Access	235,574	GB of Traffic
Remote Access	7,306	Users
Wide Area Voice-VNS	89,687,501	Minutes
Wide Area Voice-PTN	60,984,022	Minutes
Voice Premise-PBX	28,555	Extensions
Voice Premise-VolP	3,496	Extensions

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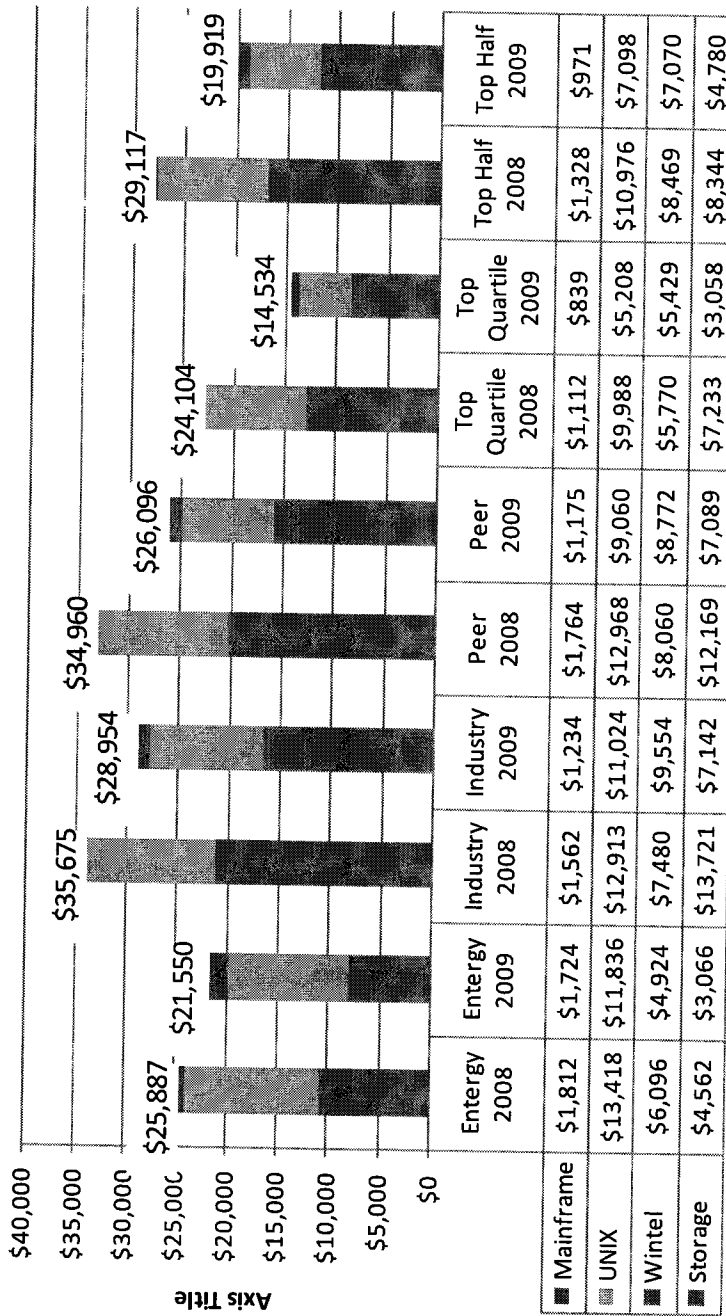
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Summary Findings

Enterprise Computing – “Volume Adjusted” 2008 vs. 2009

Year to Year Enterprise Computing



	2009	Workload	Units
Mainframe		190	MIPS
UNIX		420	OS Instances
Wintel		1,172	OS Instances
Storage		868,352	GB

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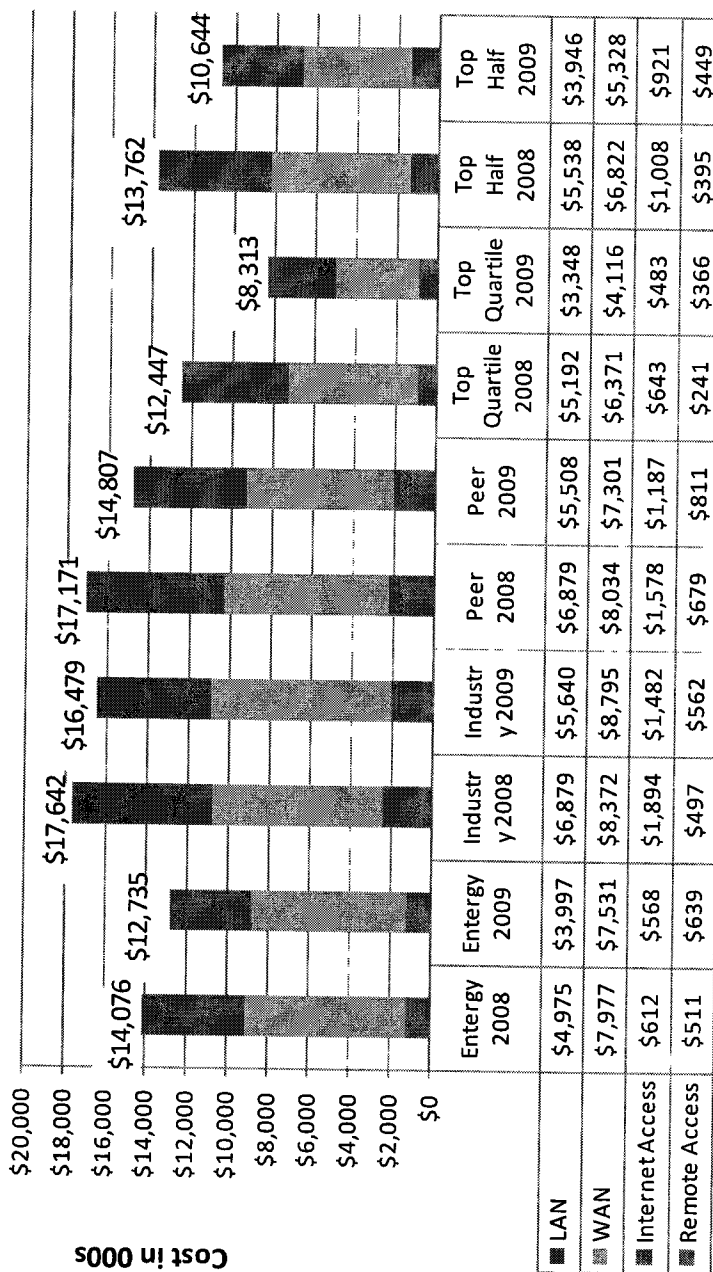
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Summary Findings

Data Network - "Volume Adjusted" 2008 vs. 2009

Year to Year Data Networks



2009		Units	
Workload		Units	
LAN	43,263	Active Ports	
WAN	28,189	Devices	
Internet Access	235,574	GB of Traffic	
Remote Access	7,306	Users	

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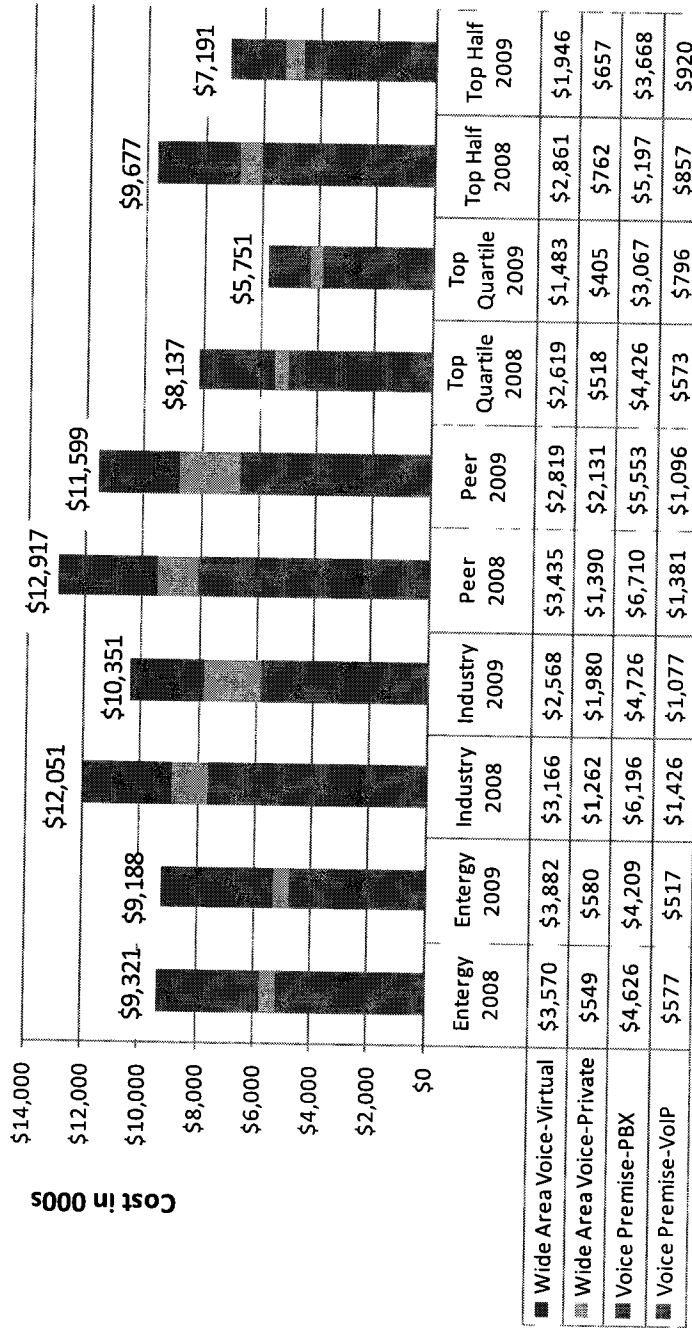
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Summary Findings

Voice Network - "Volume Adjusted" 2008 vs. 2009

Year to Year Voice Networks



2009		Units	
Workload		Units	
Wide Area Voice-VNS	89,687,501	Minutes	Minutes
Wide Area Voice-PTN	60,984,022	Minutes	Minutes
Voice Premise-PBX	28,555	Extensions	Extensions
Voice Premise-VolIP	3,496	Extensions	Extensions

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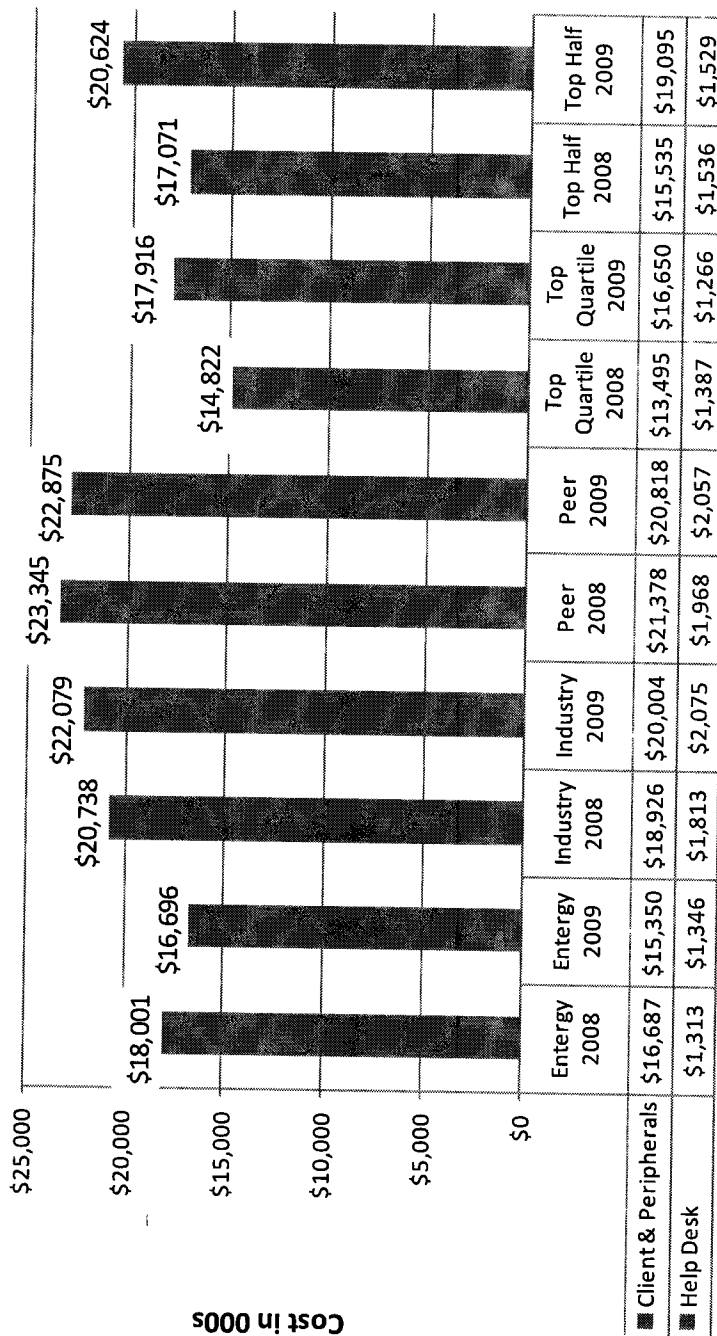
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Summary Findings

Desktop & Help Desk - "Volume Adjusted" 2008 vs. 2009

Year to Year Desktop & Help Desk



2009		
Workload		Units
Client & Peripherals	16,457	Users
Help Desk	120,936	Contacts

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■ ■ ■ Analysis By Area

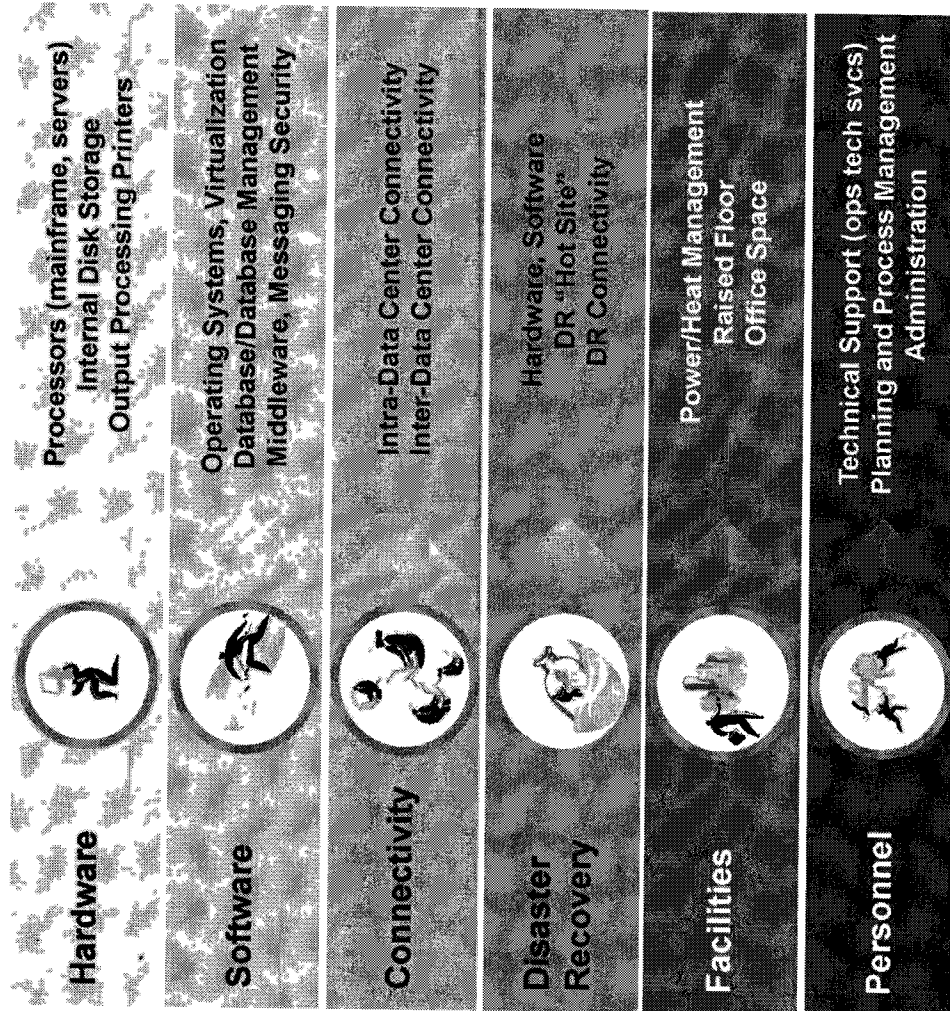
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Enterprise Computing

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Enterprise Computing Consensus Model



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Enterprise Computing - Mainframe

Peer Information

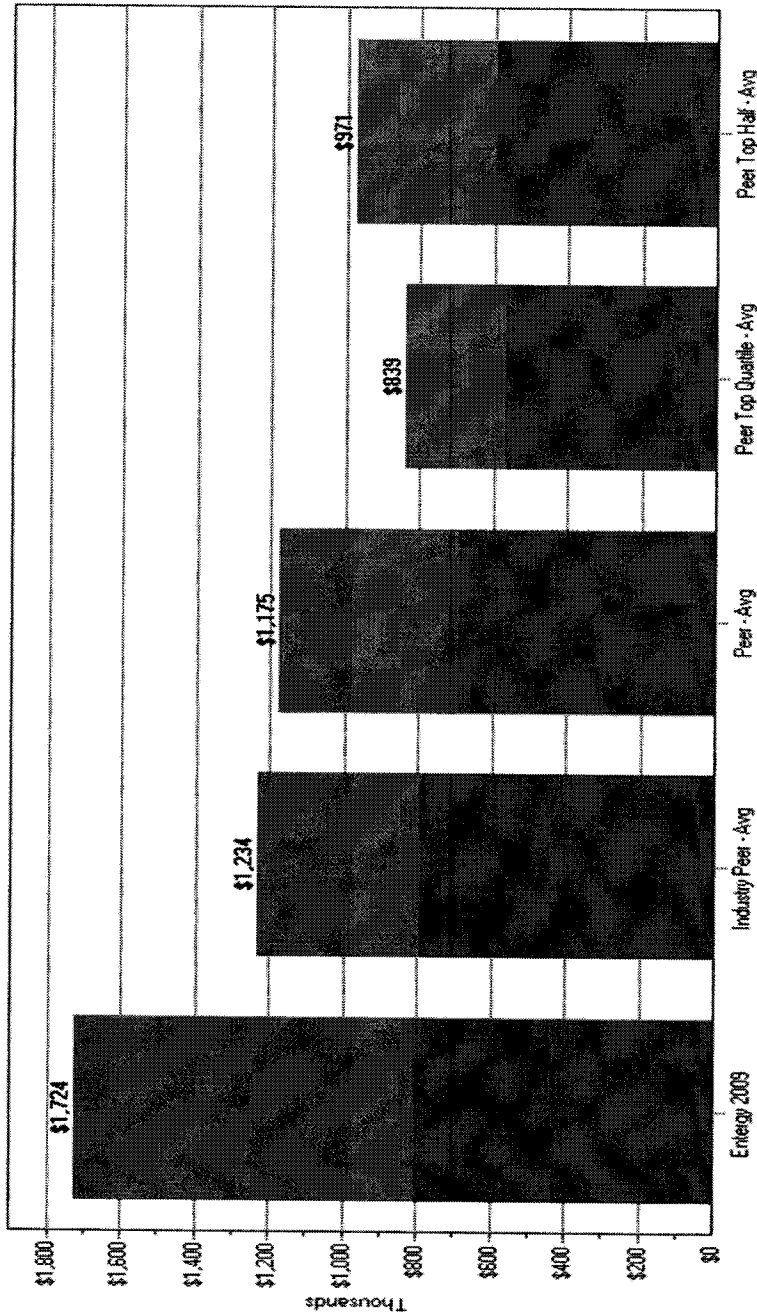
▪ Benchmark Scope

- Weighted average installed MIPS = 190

▪ Peer Profile

- Peers possess a similar number of installed MIPS and comparable processing workload profile
- Peer group consists of 1 utilities, 1 consumer goods, 2 financial services, and 4 public administration

Enterprise Computing - Mainframe IT Spending by Cost Category



	Enterprise 2009	Industry Peer - Avg	Peer - Avg	Peer Top Quartile - Avg	Peer Top Half - Avg
Hardware/Software	\$804	\$737	\$632	\$565	\$594
Personnel	\$920	\$437	\$483	\$274	\$377

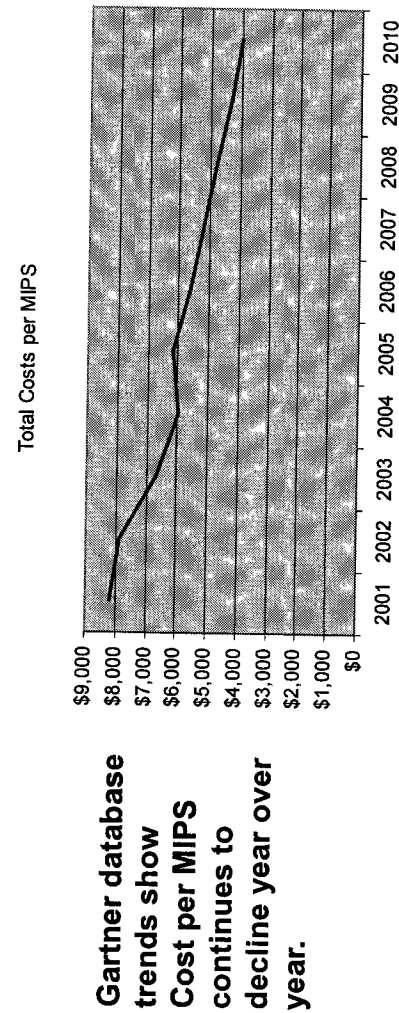
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Enterprise Computing - Mainframe Mainframe Observations

- While Entergy's number of MIPS supported remained the same from 2008 to 2009, cost per MIPS decreased by 5%.
- Entergy's costs are 47% higher than the Workload peer average. Overall higher total costs are being driven by significantly higher Personnel costs, as well as higher Hardware/Software costs (Entergy's spending in Hardware/Software is comparable to the Industry peer however it is 16% higher than the Workload peer).
- Although Entergy's Mainframe costs have decreased year over year, peer data is also trending down but at a much faster rate due to the introduction and exploitation of specialty engine MIPS.
- "Enterprises running exclusively legacy workloads that cannot exploit the specialty engines will be challenged to see comparable levels of cost/performance improvement." - Gartner Research G00201745, 13 July 2010
- Gartner continues to recommend that Entergy migrate the last few applications to a new platform.



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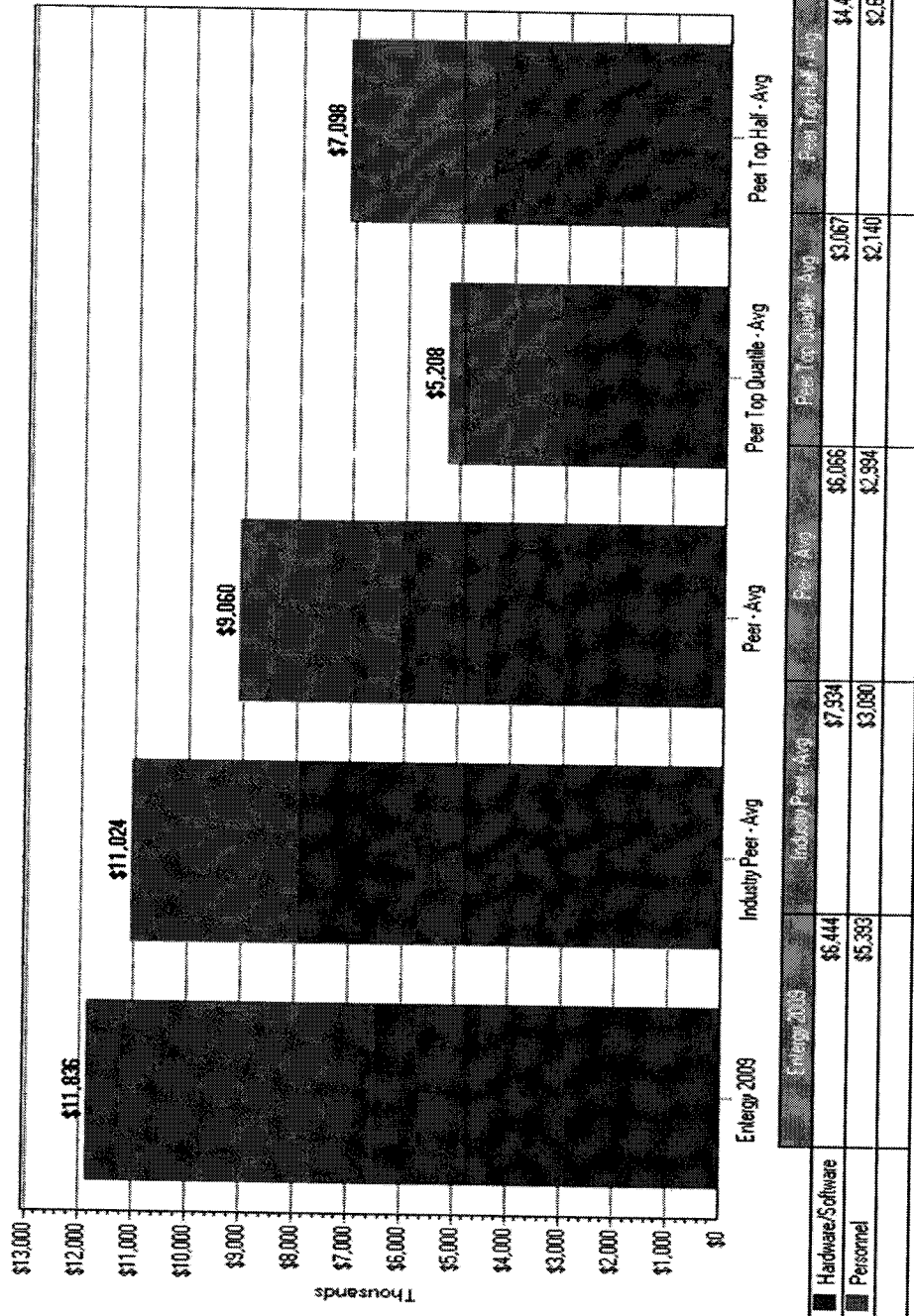
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Enterprise Computing - UNIX

Peer Information

- **Scope of UNIX**
 - 399 Physical Servers
 - 420 OS Instances
 - 1.59 average kGEMs per server
- **Peer Profile**
 - Peers include those with a similar:
 - # of overall kGEMs
 - # of servers
 - Average kGEMs per server (2.40)
 - Average OS Instances (456)
 - Peer group consists of 7 utilities, 1 business services, 1 chemical, 9 public administration, 1 insurance, and 1 financial services

Enterprise Computing - UNIX IT Spending by Cost Category



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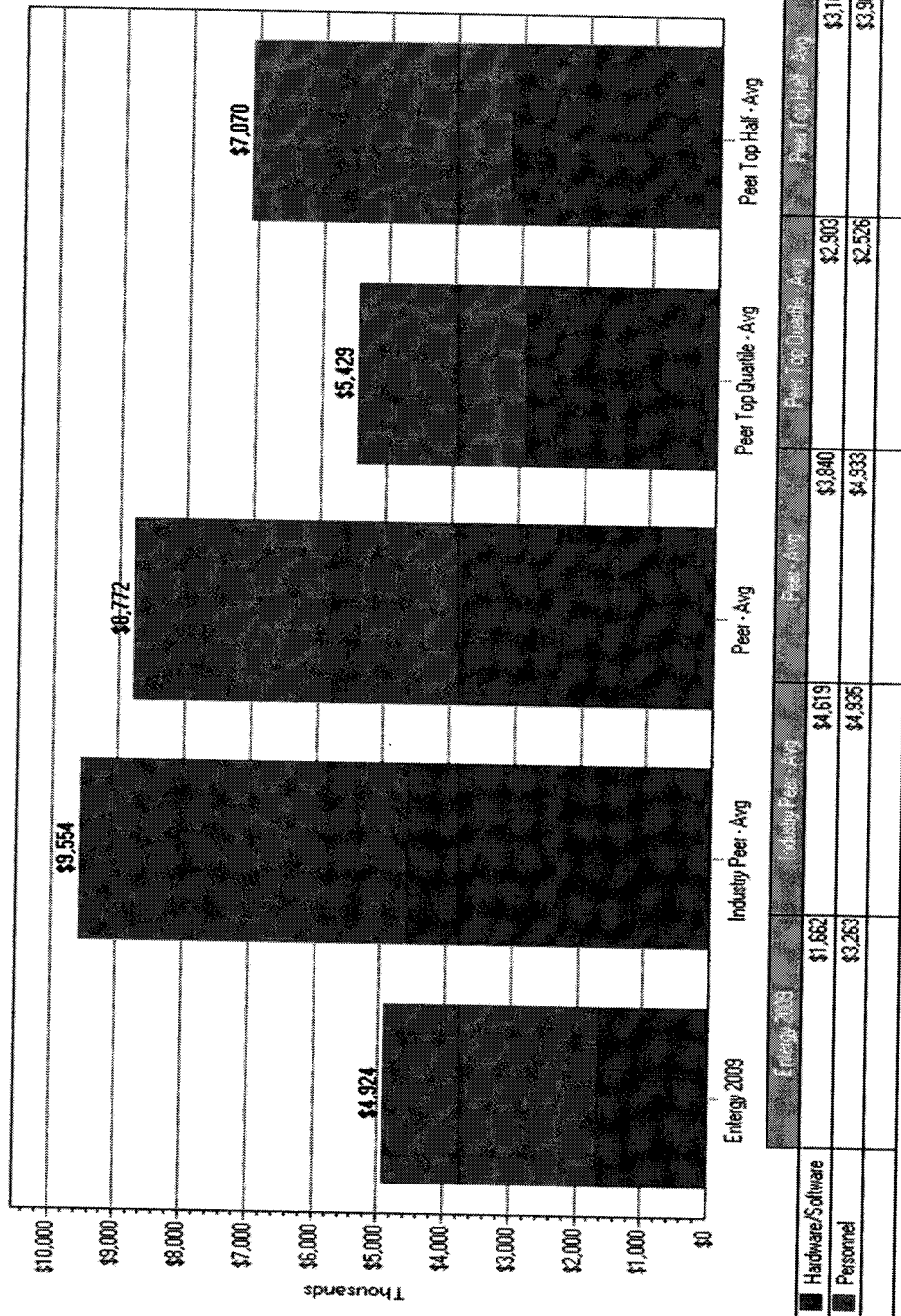
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Enterprise Computing - Wintel

Peer Information

- **Scope of Wintel**
 - 966 Physical Servers
 - 1,172 OS Instances
 - 3.93 average kGEMs per server
- **Peer Profile**
 - Peers include those with a similar:
 - # of overall kGEMs
 - # of servers
 - Average kGEMs per server (3.04)
 - Average OS Instances (945)
 - Peer group consists of 7 utilities, 2 financial services, 9 public administration, 1 transportation, and 1 insurance

Enterprise Computing - Wintel IT Spending by Cost Category



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Enterprise Computing Server Observations

- **Entergy's UNIX costs are 23% higher than the Workload peer average and 7% higher than the Industry peer.**
 - Hardware/Software costs are slightly higher than the Peer average, however, they are lower than the Industry peer and decreasing from 2008. Higher Personnel costs continue to be the primary driver for higher overall costs.
- **Entergy's Wintel costs are 44% lower than the Workload peer average and 57% lower than the Industry peer.**
 - Wintel costs are slightly below the Top Quartile peer.
 - Hardware/Software costs are lower than Top Quartile peer while Personnel costs are slightly higher than the Top Half peer.
- **The number of UNIX servers has increased from 395 in 2008 to 399 in 2009. Wintel physical server number has shrunk from 1,224 in 2008 to 966 in 2009. Entergy has been undergoing a server virtualization project and as expected, physical server growth has slowed and number of OS Instances has increased.**
- **Wintel Virtualization ratio of 1.21 OS per physical is a positive trend toward Entergy's use of virtualization, however it is still well below the industry average.**
 - Organizations should target virtualization for high-volume servers with at least a 7-to-1 (virtual to physical) ratio, depending on workload - Gartner Research G00164723, 1 April 2009

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Server Observations

Misconception: Server Virtualization Saves Money

Strategic Guideline: Without good planning and execution, server virtualization will cost more in terms of staffing, storage and software costs.

- There is no doubt that server virtualization can potentially reduce capital, energy and data center space costs through consolidation and standardization. While low-level virtual machine technologies can be inexpensive, virtualization can increase complexity and requires new tools that aren't free. Server virtualization on anything other than a small scale requires centralized storage, pushing most enterprises to network-attached storage (NAS) or storage area network (SAN) solutions, which can be quite expensive. Operational costs can easily increase. Only with an increased focus on standardization and increased automation can operational costs remain flat or decline. Gartner has talked with several organizations that are roughly 30% virtualized, but have halted their virtualization deployments because of cost overruns and process issues. These issues were avoidable, with good upfront planning (especially on process/management changes).
- While the initial focus of virtualization projects is to save money, most organizations that are heavily virtualized say that the most-important benefit of virtualization is speed of deployment, and flexibility to react to change. – Gartner Research G00201551, July 29, 2010.

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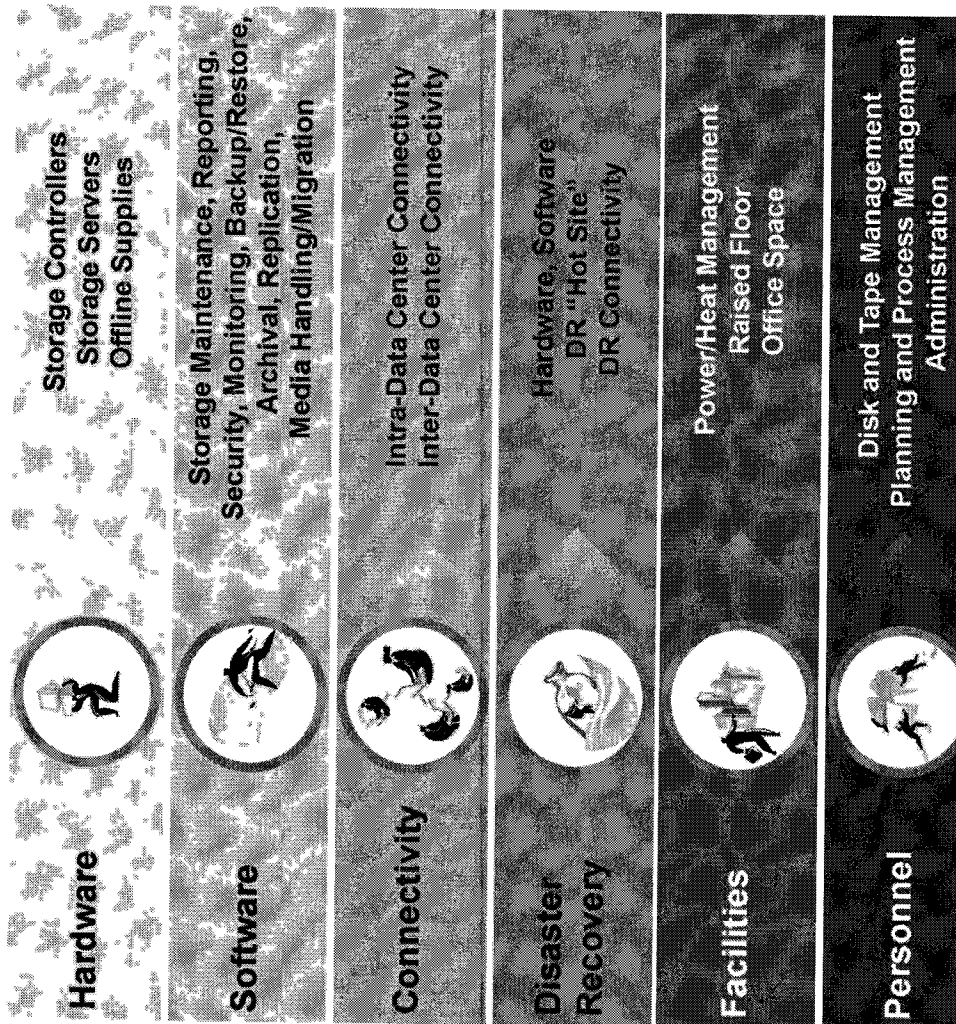
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Enterprise Storage

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Enterprise Storage Consensus Model



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Enterprise Storage Peer Information

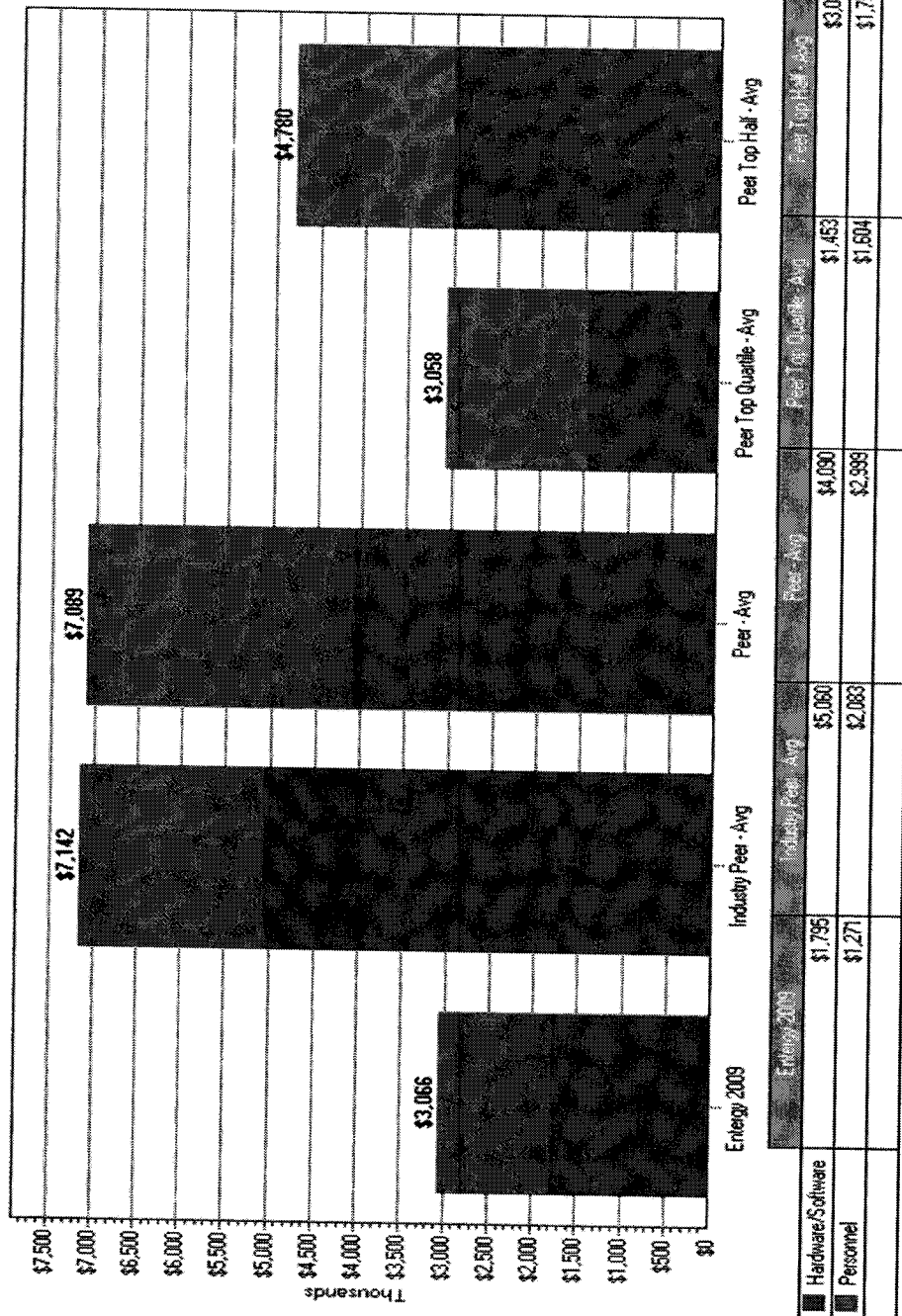
■ Scope of Storage

- 848 TB Total Installed Storage

■ Peer Profile

- Peers include those with a similar number of TB of installed storage.
- Peer group consists of 3 utilities, 7 public administration, 2 chemical, 3 financial services, 1 insurance, 1 manufacturing, 3 consumer goods

Enterprise Storage IT Spending by Cost Category



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Enterprise Storage Observations

- **Entergy's total Storage costs are less than half of what the Workload peer and the Industry peer groups would spend to support Entergy's amount of installed Storage, and are comparable to the Top Quartile peer.**
 - Entergy is spending slightly more than what the Top Quartile peer would spend for Hardware/Software. However, lower personnel costs are offsetting the higher Hardware/Software costs.
- **Entergy's installed Storage capacity has grown by 39% from 609 TB in 2008 to 848 TB for 2009. Entergy's total cost for Storage has decreased by only 7% from 2008 to 2009.**
 - The growth in capacity with the relatively flat level of spending has resulted in a much lower cost per GB for Entergy.
- **Given the growth in capacity and lower spending, it will become critical that Entergy have in place the staff responsible for planning, forecasting, tuning and monitoring of processes and tools.**
 - Operational time is typically spent configuring, provisioning and maintaining storage devices and the infrastructure. This is a labor-intensive area where productivity can be improved, especially in organizations with very large storage environments and/or those that are constantly changing, and where the quantities being managed are in the hundreds or more of terabytes (TBs). IT departments can no longer perform these tasks manually because of the increasing complexity of the infrastructure, which becomes more labor-intensive to maintain. Tactical solutions that help maintain storage management productivity by using automated processes and products can free up resources, allowing them to focus on non-operational

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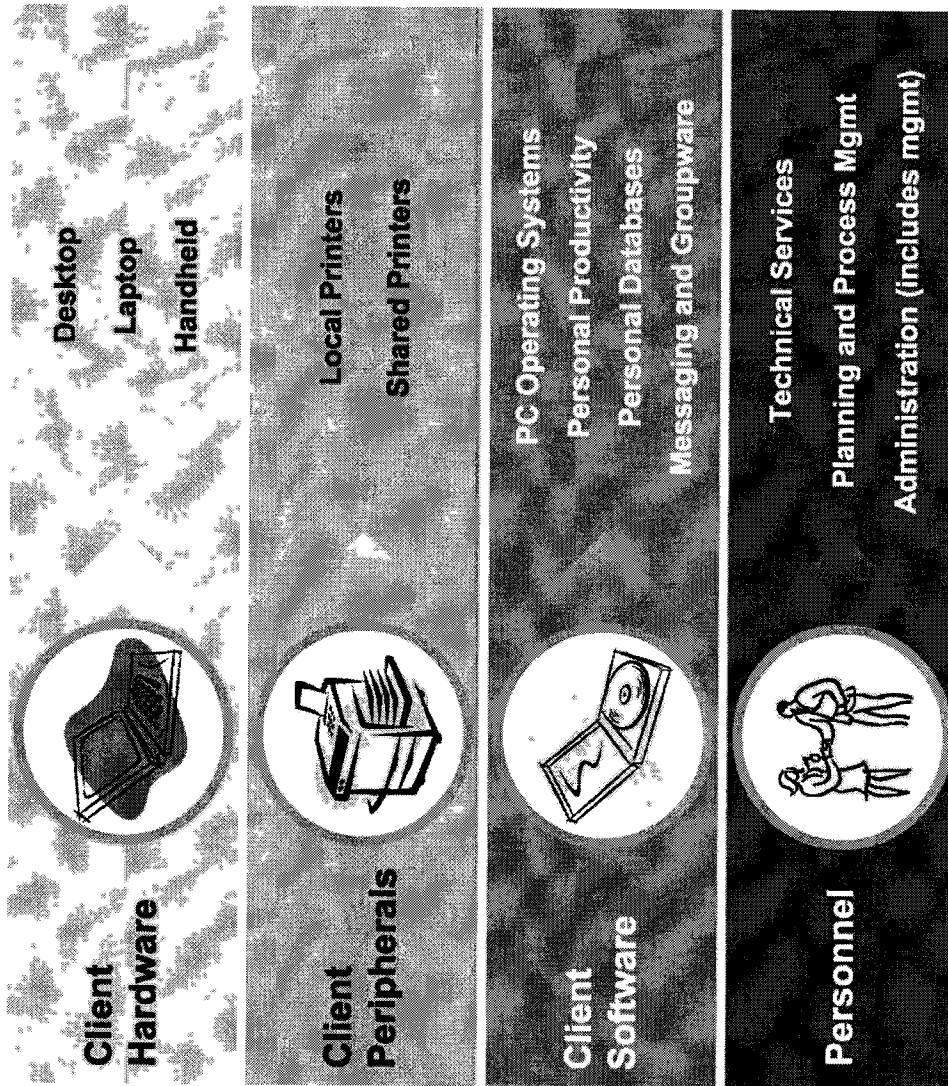
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Client & Peripheral

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Client & Peripheral Support Consensus Model



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Client & Peripheral Support Peer Information

■ Benchmark Scope

- 16,457 users located in 252 sites
- 11,202 desktops, 5,397 laptops and 4,340 handheld devices
- 1.27 Devices per End User
- 5,251 Peripheral Devices, 7 End Users per Shared Printer
- 83% of HW/SW break/fixes resolved in 2 business days
- 17% of HW/SW break/fixes resolved by next business day or sooner

■ Peer Profile

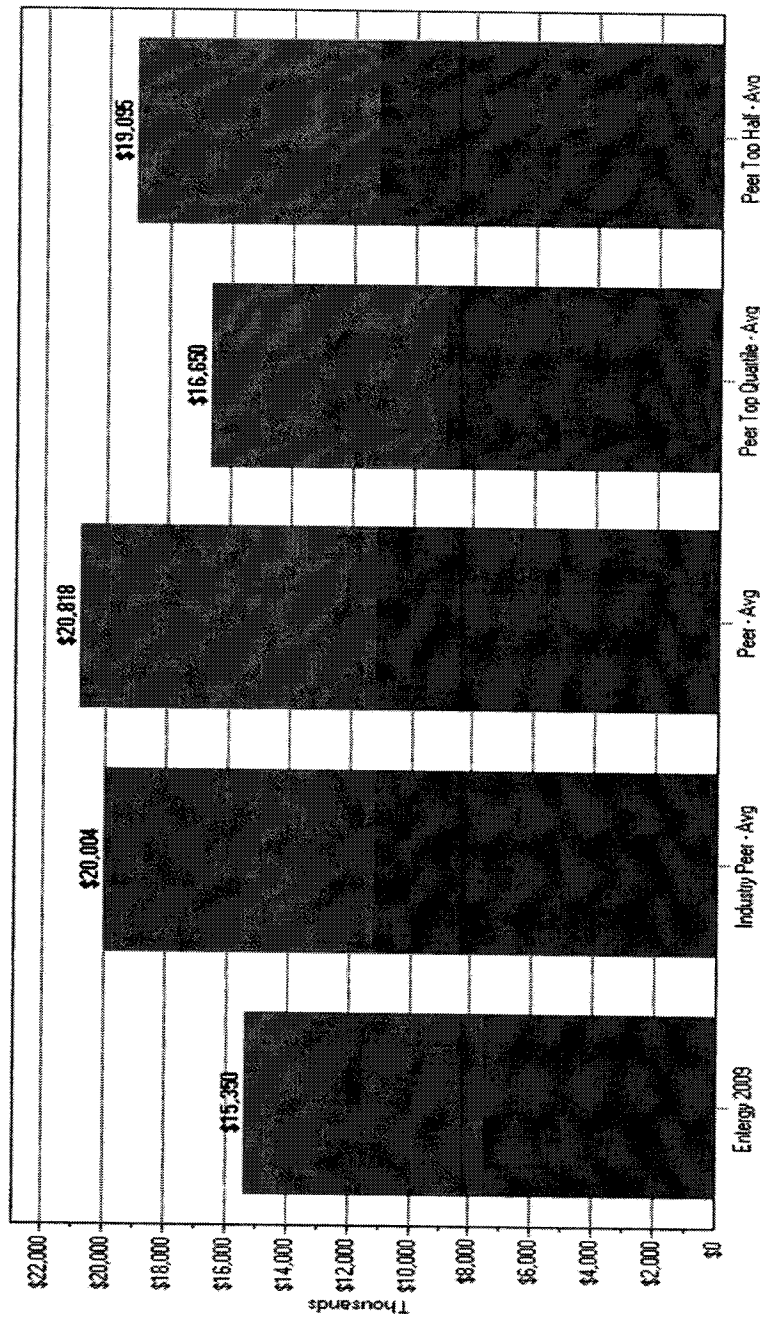
- Peers possessing attributes similar to those listed under “Benchmark Scope”
- Peer group consists of 6 utilities, 1 manufacturing, 8 public administration, 2 health services, 1 insurance, 1 consumer goods, and 1 financial services.

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Client & Peripheral Support IT Spending by Cost Category



	Energy 2009	Industry Peer - Avg	Peer - Avg	Peer Top Quartile - Avg	Peer Top Half - Avg
Hardware/Software	\$7,552	\$11,188	\$11,155	\$8,940	\$11,139
Personnel	\$7,798	\$8,816	\$9,663	\$7,710	\$7,956

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Client & Peripheral Support Observations

- Entergy continues to maintain a cost efficient desktop support environment with spending 8% lower than the Top Quartile peer group. Entergy's desktop costs have decreased by 8% from 2008 to 2009.
 - Entergy's Hardware/Software costs are lower than the Top Quartile peer group while Personnel is comparable.
 - Because Entergy retains desktop equipment for 5 years, Hardware/Software costs are expected to be lower due to peers typically having a 4 year refresh.
- **Entergy's break/fix restoration timeframe of 2 days is longer than what is typically seen in Gartner's database.**
- Entergy should continue to monitor the productivity of break/fix and customer satisfaction. Since older equipment tends to fail more frequently, end user productivity and satisfaction could start to slip.

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Help Desk

IT Help Desk Consensus Model



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