Does DELL Beat HP at Delivering Simplified IT Management?

The battle is on to provide simplified management of IT. HP and Dell are the heavyweights battling it out to provide the most cost effective, resource efficient and information rich management solutions. Dell claims that its management solutions, based on Altiris, do more than HP's to simplify management. Are these claims valid? Ptak, Noel & Associates LLC (PNA) explored the logic behind these claims, did some research, and formed our opinion on the validity of each claim. For the most part, PNA's concluding opinion is that the supporting logic and data are sound enough for the claims to have credibility and should be taken seriously.

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The Short Report

Dell, powered by Altiris technologies from Symantec, wants to illustrate in published claims how Dell's management solutions will simplify IT management operations in contrast to HP's solutions. Ptak, Noel & Associates LLC (PNA) was commissioned to validate the accuracy of these claims.

To start the validation process, we defined our case study environment as a mid-sized business with 3000 managed physical nodes spread across three sites. We choose a subset of management activities and routines that many IT administrators perform frequently. Next, we examined the functionality required to achieve a basic level of competence. We worked with independent service consultants to define the configuration of competing solutions for our case study environment. They also provided the information and context that illustrate how the solutions stacked up against our comparative indicators. We also conducted a basic pricing analysis of publicly available information during February 2008. Based on this research methodology we formed the following opinions about Dell's claims.

Claim: Dell management is much easier to use than HP's because Dell has fewer consoles
Resulting PNA Opinion: Dell's claim is credible. The independent services consultants agreed that Altiris users only needed a single console, but the HP users may require 9 or more consoles.

Claim: Dell's solution requires much less infrastructure than HP's to implement common management functions
Resulting PNA Opinion: Dell's claim is creditable. There are two main differences. First is the servers (Dell 3, HP 9) required to deliver basic IT management competency in our hypothetical test environment. Second is the number of databases (Dell 3, HP 6) and how those databases are installed (Dell as a single instance, HP as separate solution instances).

Claim: Dell's management package is easier to install than HP's
Resulting PNA Opinion: Dell's claim is creditable, for now. Our conversations with service consultants revealed an average of 9 weeks for an Altiris implementation is bid and 21 weeks for an HP implementation is bid.

Claim: Dell's management solution costs half of what HP's
Resulting PNA Opinion: Dell's costs are much lower, for now. Our research showed that there are pricing scenarios where the 'costs half' claim is true; however we will stick to our more conservative estimate of one quarter to one third less. Making pricing claims is always risky because price is the easiest product 'feature' to change, however, it would be difficult for any vendor to permanently eliminate large differentials in a very short period of time.

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Dell Claims to Simplify IT Management

Dell is now working to simplify the IT management infrastructure. With the announcement that the future of Dell's OpenManage console products will be based on Altiris technologies from Symantec, Dell demonstrates their serious commitment to the necessity of simplification as defined by ease of control and maintenance of the IT infrastructure.

Dell will also be using this new management platform as a means to combat their nemesis, HP. The rivalry is particularly heated in the high volume mid-market, which we define as companies with 1000 to 5000 employees. In this arena Dell believes their management solutions will simplify IT in comparison to HP's solutions in some areas including:

- Ease of use via fewer consoles
- Management infrastructure required
- Ease of solution implementation
- Total cost of ownership

Are these claims valid? Dell asked us for our opinion, so we explored the logic behind these claims, did some research, and formed our opinion on the validity of each claim. This paper summarizes the methodology used to inform our opinions, the research findings, and our resulting opinions.

Methodology Used to Inform Our Opinions

1) Defined a case study environment

We defined our case study environment as a mid-sized business with 3000 managed physical nodes spread across three sites.

Locations/Offices	Clients	Servers
Headquarters	2100	75 physical servers 35 virtual servers
Regional Office 1 (200 miles away from corporate)	300	10
Regional Office 2 (500 miles away from corporate)	500	15

Our case study environment also makes the following infrastructure assumptions:

- Each month 10% of end user machines are migrated from Windows XP to Vista using best practices such as moving data and user settings.

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- There will be an initial rollout of VMWare™ ESX and frequent provisioning of virtual servers and additional ESX servers as business needs change.
- Provisioning of basic Microsoft business applications such as SQL Server and Exchange Server.
- Clients can host Windows, Macintosh or Linux operating systems.
- Servers can host Windows, Linux or UNIX operating systems.

Our staffing assumptions include:

- Businesses of this size possess the present or growing needs of larger enterprise-type businesses, but lack the IT support personnel found in a larger organization. Therefore, we are assuming a staff size of five administrators, including one senior manager or 'executive' that reports to the company's executive team. Staff members routinely perform more than one role and support multiple technologies. We also assumed there is a fairly high turn-over rate for administrators with 2-3 years experience, meaning learning is a continuous process.
- Mid-market administrators rarely have the time to dedicate to traditional classroom education about new products. Their initial education is heavily dependent on knowledge transfers and on the product documentation that accompanies professional services engagements. Ongoing education is heavily dependent on online communities, content libraries, and on-demand learning tools.

2) Bound the scope of management areas investigated

- Infrastructure management is, by necessity, a broad and far-ranging topic that is too large for an unbounded review. It can, for example, encompass everything from capacity needs assessment to asset retirement as well as ranging from installing device drivers to managing the service level agreement (SLAs) of business-critical, n-tiered applications. Therefore, our first step was to define the scope of the research to put some boundaries around the project. To do this, we had several initial discussions with Dell's staff to understand the basis for the claims from both a technology and solution architecture perspective. We also reviewed the IT management aspects of Dell's simplification marketing campaign.

To assess Dell's claims against HP, we choose a subset of management activities and routines that IT administrators perform frequently. We then identified and examined the functionality required to achieve a basic level of competence in each area (see Table 1).

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Table 1: Management Activities and Functionality Used for Comparison

Frequently performed management activities	Functionality required to achieve a basic level of competence
Inventory and Configuration Management	Maintaining an accurate inventory of networked systems, including hardware, operating systems and application configuration data as well as software licensing information. Includes automated population of the inventory through discovery mechanisms, automated mechanisms to maintain information accuracy, such as periodic inventory scans, and inventory reporting capabilities.
Deployment & Migration	Provide bare metal OS deployment (regardless of type), configuration, computer migrations and software deployment for clients, physical servers and virtual servers.
Backup and Recovery	Completion of regular backups of all servers and mission critical clients to a central data store and ensuring fast, accurate recoveries in the event of system failures.
Policy-Based Change Management (push)	Ability to centrally deploy, change, update and patch hardware, OS and applications on clients, physical servers and virtual servers at local or remote locations. This includes integration with inventory and configuration reporting to support security and compliance efforts.
Policy-Based Change Management (pull)	Enable client self-support with self-healing and install on-demand and automated rollback capabilities at local or remote locations. Includes integration with inventory and configuration reporting to allow administrators to see entire change history of a system.
Hardware Health Monitoring	Monitoring a minimum of twenty hardware health metrics on physical and virtual servers and a minimum of fifteen similar metrics on mission critical clients.
Basic OS/Application Monitoring	Monitoring for operating system and application level metrics on physical and virtual servers.
Service Desk	Provide problem and incident management, task assignment and management, and reporting. This includes integration with the inventory and configuration management solution and the ability to integrate knowledge bases and external content libraries.

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3) Complied a list of comparative indicators

For **solution complexity** we looked at the number of agents deployed, number of servers required and number of databases deployed as well as the amount of services and customer education required.

The means of measuring the deployment complexity of a management solution has traditionally focused on agents, both in terms of number of agents and their total resource utilization. Even with the availability of agent-less monitoring techniques, many IT functions such as software deployment or data protection require agent capabilities on the system and most vendors have responded by paring down agent footprints. However, we include it as a 'low bar' indicator, i.e. if there is a huge difference in footprint then one can easily point to the more complex solution.

We believe that the number of servers and databases deployed will be good indicators of complexity because there are more components to be correctly installed, configured, integrated, operated and updated. Installation will be more challenging; it just takes longer to complete a 500-piece jig-saw puzzle than one with only 100 pieces.

Solution implementation comparisons are particularly tricky as so much depends on the experience of the solution implementer, the availability of implementation templates, and the level of customization required by the client. For our comparison, we looked at two scenarios:

- A cookie cutter implementation that requires very little customization and implementation templates require no modifications to make the solutions operational. Here we believe a good indicator of the difference in implementation ease would be the availability of 'quick start' programs and the number of consulting days included and/or the timeframe of promised delivery (i.e. claims such as "get your enterprise Service Desk running in 30 days" would be included in the marketing brochures).
- A semi-custom implementation that requires some tweaking of any existing implementation templates to make the solutions operational and a moderate level of customization. Here we did an ad-hoc survey of three Altiris and HP service consultants to determine, when given our case study environment, how many weeks of consulting time they would put into an initial project bid.

For **ease of use** we looked at the number of consoles administrators must access to complete their tasks. We think this is a good indicator because one of the major management challenges is to draw quick and accurate information from the available data. Information and views presented through multiple independent consoles requires more real-time attention and analytic effort to draw accurate conclusions. Fewer consoles with information consolidated and presented in an integrated manner is ergonomically less stressful, easier to understand and makes on-the-fly correlation easier.

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4) Corroborated solution implementation scenarios

Dell's new management architecture will not be available until later this year, therefore Dell's solution is a product roadmap over which we have no control. While our current understanding of the transition is that the Altiris technology will provide the management functionality whereas Dell's management team is providing the specific content about Dell-supplied infrastructure. For example, Dell Client Manager and Altiris Management Suite for Dell Servers are currently shipping, Altiris-based products that contain functionality very similar to what we expect will included in Dell's forthcoming management console later this year. However, we can make no promises about actual delivery of those ideas. Instead of guessing what will be, we simply used the Altiris solutions that are currently shipping in our comparison.

We worked with Altiris and HP service consultants to define the configuration of competing solutions for our case study environment. They also provided the information and context of how the solutions stacked up against our comparative indicators. Table 2 lists the solutions delivering the management functionality we scoped for this comparison. This list was complied in January 2008 based on publicly available information and does not include product roadmap and planned product packaging, or futures information that is typically available to consultants and analyst firms.

5) We investigated publicly available pricing information.

We conducted a basic pricing analysis of public information during February 2008. Comparing software pricing strategies of different vendors is never easy, because vendors take vastly different approaches to discounting and rewarding customers for loyalty and purchasing volume. For example, HP discounts individual products, such as HP Data Protector for Notebooks, by pricing packages of 10, 50, and 100 licenses – basically the unit cost of the 100 pack is less than the unit cost of the 10 pack. Symantec Altiris uses a different approach. It bundles the majority of their individual products into a single package, then uses a points-based customer award program where the more you buy; the more points you accumulate which results in a higher discount.

The comparative difficultly arises in choosing the right discounting levels to put both companies on an even playing field. Regardless of the discounting approach assumed there will always be some discrepancy that favors one company. In an effort to rationalize these differences, we developed two different pricing scenarios:

- One that minimizes volume discounting as much as possible. For example we used the 10 pack pricing to buy the 2900 licenses required to protect client data. We also used pricing for individual products instead of product bundles.
- One that uses publically available per client volume discounting. For example we used the 100 pack pricing to buy the 2900 licenses required to protect client data. We also used pricing for product bundles and the discount rate that would be achieved if this were the first product purchased made under the points-based program.

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We did not attempt to apply any discounting for per user licensing in either case as we could not obtain publicly available discounting rates for either company.

Is this analysis exactly apples to apples in every respect? Probably not, the more accurate description may be that we are comparing Red Delicious to Golden Delicious, both are apples but there are some differences. However, we are making the assumption that our readers will be intelligent enough to judge this effort and our resulting conclusions once they are given full disclosure of our methodology.

Table 2: Solutions Delivering Management Functions

FUNCTIONS	DELL	HP
Inventory and Configuration	Altiris Asset Mgmt. Suite	HP Enterprise Discovery HP AssetCenter
Deployment & Migration	Clients: Altiris Mgmt. Suite for Dell Clients Servers: Altiris Mgmt. Suite for Dell Servers	Clients: HP Client Automation Center (Standard Edition) Servers: HP Insight Control Environnent, HP ProLiant Essentials Rapid Deployment Pack, HP Server Migration Pack and HP Virtual Machine Management Pack Flexible License
Backup and Recovery	Clients: Altiris Recovery Solution Servers: Backup Exec System Recovery (BESR)	Clients: HP Data Protector for Notebooks Servers: HP Data Protector
Policy-Based Change Management (push)	Clients: Altiris Mgmt. Suite for Dell Clients Servers: Altiris Mgmt. Suite for Dell Servers	Clients: HP Client Automation Center Servers: HP Insight Control Environment, HP Virtual Machine Management Pack Flexible License
Policy-Based Change Management (pull):	Altiris Mgmt. Suite for Dell Clients	HP Client Automation Center
Hardware Health Monitoring	Clients: Altiris Mgmt. Suite for Dell Clients Servers: Altiris Mgmt. Suite for Dell Servers	HP System Insight Manager
Basic OS/Application Monitoring	Altiris Monitor Solution for Dell Servers	HP System Insight Manager; HP OpenView Smart Plug-Ins and/or Mercury software
Service Desk	Altiris Service Desk Solution	HP Service Manager v7

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Observations, Analysis and Opinions

Let us look at how each of Dell's claims fared against the research findings; and then view the resulting opinions about these claims.

Claim: Dell management is much easier to use than HP's because Dell has fewer consoles

The basis of this claim comes from Dell's technical teams who deployed both solutions sets as part of their internal competitive analysis efforts. These partners informed us that their customers only used one integrated console while HP users would require 9 or more consoles to complete all of the management functions we identified as common concerns for the mid-market. To test the validity of this claim we worked with Dell and HP services consultants to determine how they would implement the solutions.

Findings: To test the validity of this claim we worked with Dell and HP services consultants to get an independent assessment. The services consultants agreed that Dell users only had a single console and that HP users may require 9 or more consoles. Table 3 lists HP console counts provided by our services consultants.

Table 3: HP management console counts (For more information see Appendix A)

Solution	Console Count
HP Asset Center	4
HP Enterprise Discovery	(Included in Asset Center)
HP Client Automation Center	1
HP Data Protector	1
HP Data Protector for Notebooks	(Included in Data Protector)
HP System Insight Manager (SIM)	1
Plug-ins for OS and application monitoring	(Some included in SIM; Mercury software or HP OpenView Smart Plug-Ins (SPI) may also be required)
HP Insight Control Environment (ICE)	1
HP ProLiant Essentials Rapid Deployment Pack	(Included in ICE)
HP Virtual Machine Management Pack	(Integrates with SIM)
HP Service Manager	1
TOTAL	**9**

Resulting PNA Opinion: Dell's claim is credible.

Nine consoles (and we do expect HP to consolidate its "moving parts" which will cut this differential over time) is still a significant differential. This differential that implies significant added complexity for a small IT staff that must learn, license, use and maintain many different toolsets. Additionally, our staffing assumptions included a high turnover ratio. More complexity means new staff may have a significant learning curve before they can become fully productive.

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Claim: Dell's management solution requires much less infrastructure than HP's to implement common management functions

The basis of this claim comes from Dell's technical teams who deployed both solutions sets as part of their internal competitive analysis efforts. Table 4 summarizes the Dell-supplied data.

Table 4: Data from Dell's internal competitive analysis

	DELL	HP
Number of Agents to provide all management functions	Client: 1 Server: 4	Client: 2 Server: 4
Total Footprint for all Agents	Client: ~50MB Server: ~300MB	Client: ~85MB Server: ~500MB
Servers Required	3	9 or more
Databases Required	3 1 Configuration Management Database (CMDB); 2 other solution databases may also be required to deliver all of management functions we tested - one for Service Desk; one for Deployment. The CMDB is completed integrated with these two other databases out of the box and all can run in the same SQL Server instance.	6 1 Configuration Management Database (CMDB); 5 different databases; The CMDB is not integrated with the solution databases out of box. Not all run in the same server instance; one database was a proprietary format

PNA Findings: To test the validity of this claim we worked with Dell and HP services consultants to determine how they would implement the solutions. Table 5 is a summary of the information obtained from this effort. For more detailed information see Appendix A.

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Table 5: Data from independent service consultants

	DELL	HP
Number of Agents to provide all management functions	Client: 1-2 Server: 4	Client: 2 Server: 4
Total Footprint for all Agents	Client: ~50MB Server: ~300MB	Client: ~85MB Server: ~300MB
Servers Required	4	9
Databases Required	3 1 CMDB federated with 2 other databases at installation	6 5 separately installed solution databases with on-site integration into a CMDB via HP Services

Resulting PNA Opinion: Dell's claim is creditable.
The numbers from Dell were fairly close to the numbers obtained from the independent consultants. We are unsurprised in the similarity in the agent numbers and footprints, it simply means that both vendors have been diligent is minimizing their agents. The difference in the number of databases and servers required deliver basic IT management competency should be an area of concern for mid-sized companies with the staffing concerns similar to our assumptions.

Claim: Dell's management package is easier to install than HP's

The basis of this claim is that Dell's management architecture, as OEMed from Altiris, is a single integrated package that can be installed and used as a single unit. Implementing HP's solution requires a significant integration effort as each of the products were designed independently (often acquired by HP).

PNA Findings: Both HP and Altiris had 'quick start' implementation programs available. We found two 'quick start' packages available from Altiris Total Management Suite (which includes all functionality except for BESR) for online purchase including 15 and 30 days respectively.

We found several 'quick start' packages available from HP for online purchase covering the following products:

- HP ICE
- HP Data Protector
- HP Client Automation
- HP AssetCenter
- HP Service Manager w/CMDB

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The number of included consulting days for these HP packages ranged from 10 to 30 days. HP AssetCenter and HP Service Manager packages are not available for online purchase and typically promise solution delivery in 60 days.

Our conversations with service consultants revealed an average of 9 weeks for an Altiris implementation bid and 21 weeks for an HP implementation bid.

Resulting PNA Opinion: Dell's claim is creditable, for now.
For most companies making decisions in the next 12 months, we believe this claim is creditable. It also speaks to effort required to build a truly comprehensive HP CMDB. Data must be collected and synchronized from many different points in time to drive a holistic view of the IT environment and any automated use of policies to govern it.

We believe HP will pare down the number of "moving parts" over the next two years with some aggressive technology choices, product bundling, and more integration templates for their consulting partners. On the other hand, HP has also become a highly acquisitive company, which will complicate this picture.

Claim: Dell's management solution costs half of what HP does

This claim comes from Dell's internal competitive pricing teams.

PNA Findings: Table 6 provides a summary of the results of our basic pricing research conducted in February 2008. For more detailed information see Appendix B.

Table 6: Basic pricing analysis

Pricing Scenario	DELL	HP	DIFFERENTIAL	% LESS
Very little volume discounting Quickstart implementation for a cookie cutter environment	624,823	$921,485	$296,662	33%
Volume discounting included Custom implementation based on specific customer needs	$590,740	$989,351	$398,611	40%

Resulting PNA Opinion: Dell's costs are much lower, for now.
Our research showed that there can be pricing scenarios where the 'costs half' claim is true; however we will stick to the more conservative estimate of one third less.

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Making pricing claims is always risky because price is the easiest product 'feature' to change, and the computing industry is rife with 'special discounts' for accounts that are deemed strategic to a particular vendor. However, in our opinion it would be difficult for any vendor to permanently eliminate this large of a pricing differential in a very short period of time.

Needless to say, our advice to customers is to take advantage any pricing advantages while they are available.

Final Word

Basically, Dell is neither exaggerating nor coming out of left field with their claims. In PNA's opinion, the research provides evidence to show that both the supporting logic and data are sound enough for the claims to have credibility and should be taken seriously.

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Appendix A: Notes from the Service Consultants

Number of Agents: Utilization of system resources, software conflicts and maintaining updates to the agent itself are the key concerns about management agents. For our purposes here, if the agents installed without noticeable conflicts with other agents or the other application processes on the server we moved on to the evaluation criteria defined earlier in this document.

Dell recommended products require 1 agent per client (the Altiris agent) but may have two installed. The Altiris deployment agent can be left on a machine after it is provisioned or migrated but, unless there is a specific application requiring it, it is not necessary. For client backup the Altiris Recovery agent can be deployed without the Altiris agent but, if the Altiris agent is being used, then the Recovery agent can be configured as an integrated solution agent. In this scenario there is no separate desktop icon, system tray icon, entry in Add/Remove programs, etc.

- Dell recommended server products require 4 agents per server: Dell's OpenManage Server Administrator for hardware health monitoring, the Altiris Server Manager agent for inventory, system updates, etc , the Altiris Deployment agent for rapid server builds/rebuilds and Backup Exec System Recovery agent

- In a client management environment, HP Client Automation agent is required for basic management functions, and asset management functions may add another agent. An additional agent is required to backup critical desktops (HP Data Protector for Notebooks).

- HP servers can require at least 4 agents depending on functionality. HP System Insight Manager agent is required for hardware health monitoring. In addition, it must be enhanced with the appropriate plug-ins for successful OS and application monitoring. HP Insight Control Environment is required for configuration management. HP Data Protector's agent is required for backup and recovery. An inventory agent may be required for HP Asset Center, unless sufficient data is pulled in via the HP SIM agent.

- Total Footprint of All Agents: The Dell- and HP-recommended products utilize approximately the same amount of disk space – both require right around 85mb of disk space on the client, and about 300mb on the server, depending on the agents installed and how they are configured.

Number of Servers Required: In our example of a mid-market environment, the Dell and HP recommended products could potentially be installed on a single physical server, as neither of

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the product sets contains solutions that are incompatible with the other solutions. This is not to say however, that all solutions should or would be installed and managed on the same server. For purposes of our tests, we evaluated product sets independently of each other.

We also did not include any store-and-forward systems at the remote sites for either Dell or HP as those systems would not necessarily be server-class hardware.

If we scoped our sample environment for an actual installation, the following server recommendations would be made:

- For the Dell product set, we would recommend a total of four servers:
  - One server to host the deployment solution
  - One server to host Service Desk and asset functions
  - One server to host all other management functions (e.g., monitoring, backup and recovery, etc.)

- For the HP- product set, we would recommend a total of nine servers:
  - Three servers for client management, one local, two remote
  - Two servers for server and virtualization management
  - One server for asset management
  - One server for Service Desk
  - One server for backup and recovery
  - One server for the universal CMDB and discovery

Number of Databases Required: The Dell-recommended products require a central CMDB that integrates with two other solution databases to deliver the set of management functions we tested. These can all be installed in the same SQL Server instance.

The HP-recommended products require the universal CMDB and some extensive services to federate five databases:

- One for HP Asset Center
- One for HP Client Automation Center
- One for HP Data Protector
- One for HP System Insight Manager
- One for HP Service Manager

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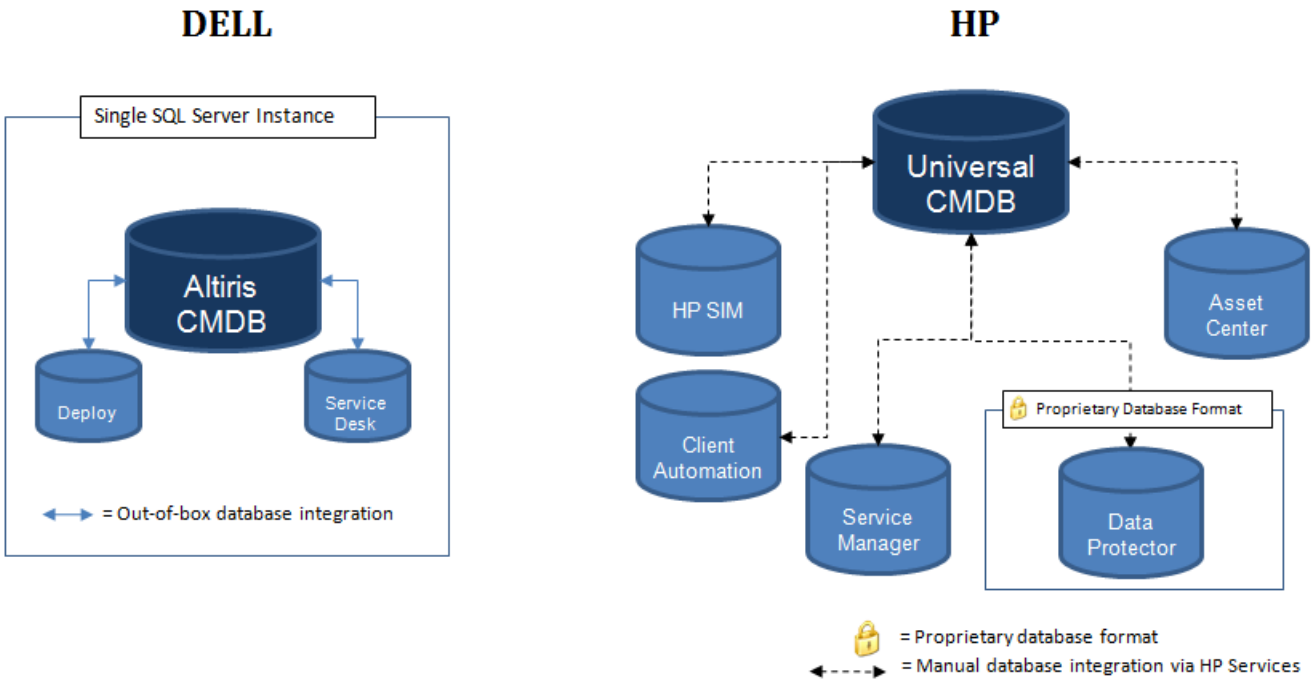
Figure 1: Database federation architectures for a typical installation



Number of Consoles Required: There is some disagreement among the consultants as to whether HP's Smart Plug-Ins counted as separate consoles. For the purposes of this paper we did not include these as additional consoles.

HP AssetCenter provides multiple consoles for basic administration, database viewing & field editing, console customization, policy monitoring (for expiration), and 3rd party application integration. Independent analysis suggests that while there may be more than 4 consoles required to use the product at various times in its lifecycle, the following 4 consoles are accessed on a fairly regular basis: HP AssetCenter, HP AssetCenter Database Administrator, HP AssetCenter Server, and HP Connect-It Scenario Builder.

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Appendix B: Pricing Analysis Details

This pricing analysis was conducted in February 2008.

Table 7: Altiris product pricing that minimizes volume discounting

Item	Unit Cost	# of Units or Users	Extended Cost
Altiris Asset Mgmt. Suite	$12,595.00	5	$62,975
Altiris Mgmt. Suite for Dell Clients	$79.00	2900	$229,100
Backup Exec System Recovery (BESR)	$899.00	135	$121,365
Altiris Recovery Solution	$32.67	2900	$94,733
Altiris Mgmt. Suite for Dell Servers	$253.00	135	$34,155
Altiris Monitor Solution for Servers	$288.00	135	$38,880
Altiris Helpdesk Solution	$2,872.99	5	$14,365

Table 8: Altiris product pricing that includes volume discounting

Item	Unit Cost	# of Units or Users	Extended Cost
Altiris Total Management Suite	$125	3035	$379,375
Backup Exec System Recovery (BESR)	$599	135	$80,865

Table 9: Altiris implementation costs

Item	Unit Cost	# of Units or Users	Extended Cost
Altiris QuickStart 15 days	$29,250	1	$29,250
Estimated weekly consulting rate	$14,500	9	$130,500

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Table 10: HP product pricing that minimizes volume discounting

Item	Unit Cost	# of Units or Users	Extended Cost
HP Enterprise Discovery (100 pk, tiered pricing)	$2,400.00	25	$60,000
HP Enterprise Discovery (100 pk, tiered pricing)	$1,925.00	5	$9,625
HP AssetCenter	$3,073.00	5	$15,365
HP Service Manager v7 (software license)	$36,840.00	1	$36,840
HP Service Manager v7 (per user licensing)	$1,832.00	5	$9,160
HP Universal CMDB	$60,000.00	1	$60,000
HP Client Automation Center (Standard Edition)	$70.00	2900	$203,000
HP Data Protector	$1,158.00	135	$156,330
HP Data Protector for notebooks (10 pk)	$2,490.00	29	$72,210
HP System Insight Manager	$0.00	135	$0
HP Insight Control Environment	$659.00	135	$88,965
HP Server Migration Pack Universal Edition	$33,000.00	1	$33,000
HP Virtual Machine Management Pack Flexible License	$575.00	35	$20,125
HP ProLiant Essentials Rapid Deployment Pack	$139.00	135	$18,765

Table 11: HP product pricing that includes volume discounting

Item	Unit Cost	# of Units or Users	Extended Cost
HP Enterprise Discovery (100 pk, tiered pricing)	$2,400.00	25	$60,000
HP Enterprise Discovery (100 pk, tiered pricing)	$1,925.00	5	$9,625
HP AssetCenter	$3,073.00	5	$15,365
HP Service Manager v7 (software license)	$36,840.00	1	$36,840
HP Service Manager v7 (per user licensing)	$1,832.00	5	$9,160
HP Universal CMDB	$60,000.00	1	$60,000
HP Client Automation Center (Standard Edition)	$50.40	2900	$146,160
HP Data Protector	$1,158.00	135	$156,330
HP Data Protector for notebooks (100 pk)	$1,665.83	29	$48,309
HP System Insight Manager	$0.00	135	$0
HP Insight Control Environment	$527.00	135	$71,172
HP Server Migration Pack Universal Edition	$33,000.00	1	$33,000
HP Virtual Machine Management Pack Flexible License	$575.00	35	$20,125
HP ProLiant Essentials Rapid Deployment Pack	$139.00	135	$18,765

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Table 12: HP implementation costs

Item	Unit Cost	# of Units or Users	Extended Cost
HP ICE quick start implementation cost	$3,200	1	$3,200
HP Data Protector quick start implementation cost	$7,000	1	$7,000
HP Client Automation quick start implementation cost	$3,200	1	$3,200
AssetCenter quick start implementation cost	$50,000	1	$50,000
ServiceDesk w/CMDB quick start implementation cost	$95,000	1	$95,000
Estimated weekly consulting rate	$14,500	21	$304,500

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Appendix C: Next Steps

Follow up research plans include:

- TCO and ROI analysis over 3 years
- A customer survey to validate the importance of these issues in simplifying their IT environments.

Completion of these efforts depends on data and cooperation from sources that are outside of PNA's control. PNA cannot guarantee if or when these activities will be completed.

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With a belief that business success and IT success are inseparable, Ptak, Noel & Associates works with clients to identify, understand and respond to the implications of today's trends and innovations on the future of IT Operations.

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