



Turning IT Overhead into Business Value by Improving Infrastructure Management

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Analyst: Paul Mason

IT AS OVERHEAD: THE CHALLENGE OF PROVING THE VALUE

The Cost of Managing Distributed Systems

Over the past decade, enterprise IT managers faced all the problems of implementing and managing the highly complex, distributed, and heterogeneous systems and infrastructure that have been demanded by users and business managers. Many of these systems were put in place to provide tactical solutions to urgent organizational problems, such as achieving better access to corporate data, creating fast responses to competitive threats, and making possible new initiatives, such as deploying a Web site, for corporate competitiveness.

But these systems, networks, and applications were typically not deployed by following any master plan, and the deployment of final business applications was seen as the ultimate goal. Rarely has the problem of managing them after deployment been seen as anything but an unfortunate overhead expense.

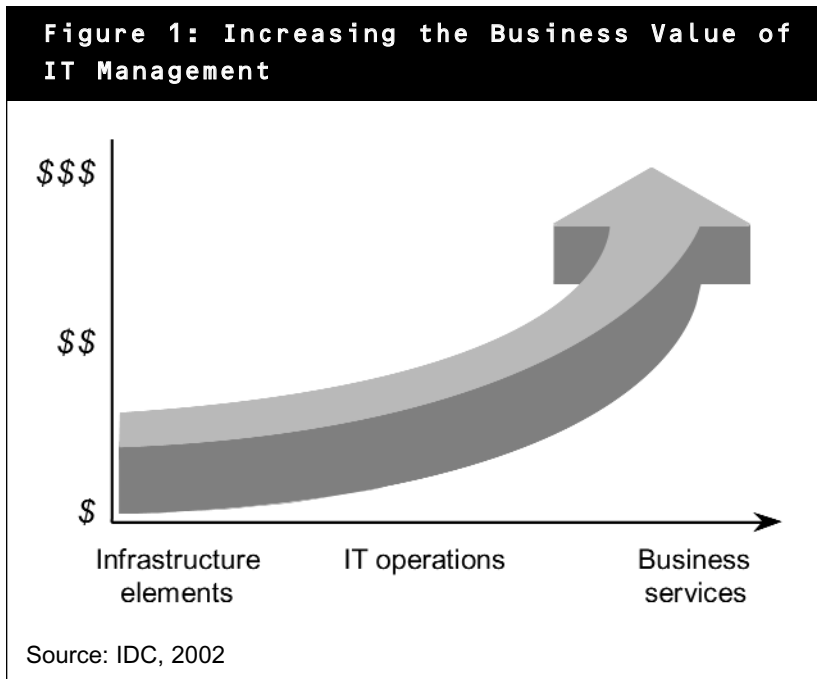
When searching for management solutions, IT soon discovered that the investment in deploying suitable distributed operations management tools was considerable. These solutions must solve the pressing problems of obtaining stability and high bandwidth in the network, managing the frequent changes in the configurations of the desktops and servers, operating an effective user help desk, and achieving adequate reliability for the servers.

When the budgets for tools required to solve these problems and the staff salaries needed to operate them were presented to corporate and line-of-business management, IT quickly found itself on the defensive by being viewed as excessive overhead.

Turning Overhead into Business Value

As long as IT operations are seen as nothing but overhead, managers will remain on the defensive — having to continually prove that they are doing everything possible to reduce expenditures and increase efficiency. While it is certainly reasonable to expect any manager to run an operation at maximum efficiency, it is much easier to defend one's budget if the business value of the operation is evident.

The reality is that IT has created significant value for most enterprises and continues to do so, but the value of continuing management of the infrastructure is harder to relate to the business. IDC believes that the best approach to this problem is for IT to raise the quality, and thus the value, of IT management from one of managing elements, through the management of operations, to management of business services (see Figure 1).



Increasing the value of IT management links the process more closely to the business and permits IT managers to position the value of such management in terms of its value to the business.

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Building Credibility for IT

Raising the level of IT management from infrastructure and operational management to service management has the additional advantage of raising the credibility of IT managers within the organization. Those seen as contributing in a continuing manner toward the success of the business are more likely to be viewed as partners in the enterprise rather than undesirable burdens. For this reason, IDC recommends that IT managers create an analytical framework for analyzing the business impact of investments in management tools and processes. Such an analytical framework should be based on the same principles used for all other business investments — return on investment (ROI).

To make possible this quantitative analysis of value, IDC has developed an ROI methodology that assists in estimating the business value of various infrastructure management processes by using some real-life cases of the costs of deployment of management tools and their returns to the corporation.

IDC'S ROI METHODOLOGY

Basic Methodology

IDC's ROI methodology measures the efficiency of management products and processes and uses the findings to calculate ROI for the deployed management software.

The method does this in four steps:

- Evaluates the internal and external costs of administering the distributed networks, systems, and applications
- Measures the gains in productivity, availability, and efficiency, and thus the associated cost savings
- Evaluates the investments made in the purchase and implementation of the management software tools
- Calculates the ROI for the enterprise management software

Research Method

IDC interviews system and network administrators who are using the management products and asks questions about specific management processes and about both time and staffing requirements. These interviews are conducted before and after the implementation of the software.

The portions of the interviews dedicated to discovery of savings concentrate on the three areas of IT productivity, IT management efficiency, and application availability. A fourth section concentrates on the estimation of the cost of implementation. Let us look at each of these in turn.

IT Productivity

To measure changes in IT productivity, we ask questions about the use of staff time in such deployment and operational areas as setting up servers, deploying and updating software, tracking hardware and software assets, and dealing with user problems. Staff time for these tasks before and after implementation of the tools are recorded, together with the fully burdened, (i.e., after fringe benefits and overhead) hourly staff salary rate.

IT Management Efficiency

IT management efficiency pertains to efficiencies achieved in user administration and supported by obtaining better management scalability. Some questions relate to the ability of the IT staff to manage remote locations from a central location to achieve reductions in travel costs, while other questions relate to the additional staff that would be required to support expected growth in the user or server population, with and without the tools.

Application Availability

To measure the effects on application availability, we concentrate on determining the effect on user productivity and business revenue caused by downtime by asking questions about systems, network, and application unavailability patterns before and after implementation. The fully burdened hourly salary rates of the user base are also required, and an estimate is sought of the loss of business that would be associated with an hour of downtime.

Investment in Tools

It is important to estimate not only the initial purchase cost of software but also the required implementation, integration, and staff training costs, which can also be very significant expenses. To measure the total investment required to deploy the tool, IDC is careful to include questions not only on the cost of purchasing and setup of the software but also the integration costs and the annual software maintenance fees.

Normalizing the Data

To normalize the data, we present all results in terms of per 100 users.

A RECENT STUDY ON INTEGRATED ENTERPRISE MANAGEMENT

IDC recently performed a study of some successful deployments of enterprise management tools — in this case, the sample was drawn from customers of the HP OpenView network, system, and application management solutions from Hewlett-Packard. In this study of 14 companies, the IT departments' strategy had been to concentrate on achieving rapid deployment of the tools to provide a rapid ROI, and they had chosen tools accordingly. The management tools were principally selected to manage the availability of the systems and applications, although other management solutions had been implemented at the sites.

The surveyed companies were usually large, and the IT operation supported a large number of servers and PCs that were typically at many remote sites (see Table 1).

Table 1: Characteristics of Surveyed Corporations	
	Mean Value
Number of employees	19,500
Corporate revenue (\$M)	17,400
Number of sites	178
Total number of servers	1,280
Total number of desktops	17,800
Number of IT management FTEs*	125
* Full-time equivalents (employees)	
N = 14	
Source: IDC, 2002	

Summary Results of the Research

The research results are consistent with those obtained in several previous IDC studies. The surveyed companies achieved considerable savings from improved IT management productivity and efficiency and from increased user productivity and decreased loss of business revenue brought about by improvements in system and application downtime. By deploying HP OpenView, the companies surveyed were able to reduce downtime by an average of 79% and realize an average ROI of 1,296%. The savings achieved allowed the companies to quickly pay back the investment required to purchase and install the system management tools.

IT Productivity

IT productivity measures how effectively IT management and its staff use their time. Savings come about by decreasing the time required to execute the various operational functions, such as software deployment and user administration. Effective system management software can free up managers and staff so that they can take on more proactive activities.

The respondents reported that the enhanced productivity permitted IT to perform routine operations tasks, such as system and software setup, configuration and upgrades, network troubleshooting and repair, backup and restore, file management and user administration, with fewer people.

In total, productivity gains within the IS staff allow businesses to save costs in day-to-day operations, improve return on hardware and software resources, and most important, enable the business to implement new initiatives more rapidly, thus increasing overall competitiveness.

In this case, the average annual savings from improved management productivity were \$7,088 per 100 users.

IT Management Efficiency

IT management efficiency differs from IT productivity in that it measures the scalability of the IT management staff — that is, how many additional network devices, servers, or desktops can be managed without requiring additional staff.

By decreasing the time and travel required to support remote users, efficient management software increases the user-to-manager ratio. The savings impact is thus felt as the companies grow and add more users without growth in management staff to deliver the same level of support. This is particularly beneficial in a replicated environment. An effective manager-of-managers architecture allows a variety of organizational structures that can provide efficient user support across time zones, based on either centralized or decentralized expertise models.

In this study, the average annual savings, over a three-year period, due to management efficiency improvements were \$13,331 per 100 users.

Reduced Downtime Increases User Productivity

When users do not have access to their business applications because of systems, network, or application unavailability, they are unable to perform their duties. The impact of this downtime obviously varies. Some users will only experience a minor inconvenience, while others may be unable to perform any of their business tasks. Even if the staff members are not performing customer-oriented, transaction processing tasks, such as order or reservation taking, the tasks can still be internally important in time-sensitive production environments. Similarly "knowledge workers" involved in collaborative work are examples of situations where system downtime can equate directly to user productivity.

Obviously, by minimizing such downtime, companies can reduce inefficiencies in all their processes and improve end-user productivity and overall company competitiveness.

In this study, IDC's estimate of the savings in user productivity due to better system and network availability is \$34,500 per 100 users. For the companies surveyed, the reduction in downtime averaged 79%.

Downtime Leads to Lost Revenue

The loss of business revenue due to system, network, and application downtime is a very obvious cost. Highly sensitive businesses, such as airlines and brokerage operations, are not the only organizations affected by this problem. Most businesses concentrate their efforts on reducing the risk of losing immediate business, but downtime can also reduce revenue by minimizing the companies' ability to respond to customer problems. Today's customers expect service to be available 24 hours a day, and, if it is not provided, they may leave dissatisfied. This problem is even more serious in the new world of the Web. As soon as a company creates a Web site, it becomes a worldwide, around-the-clock operation, and the competition is only a click away.

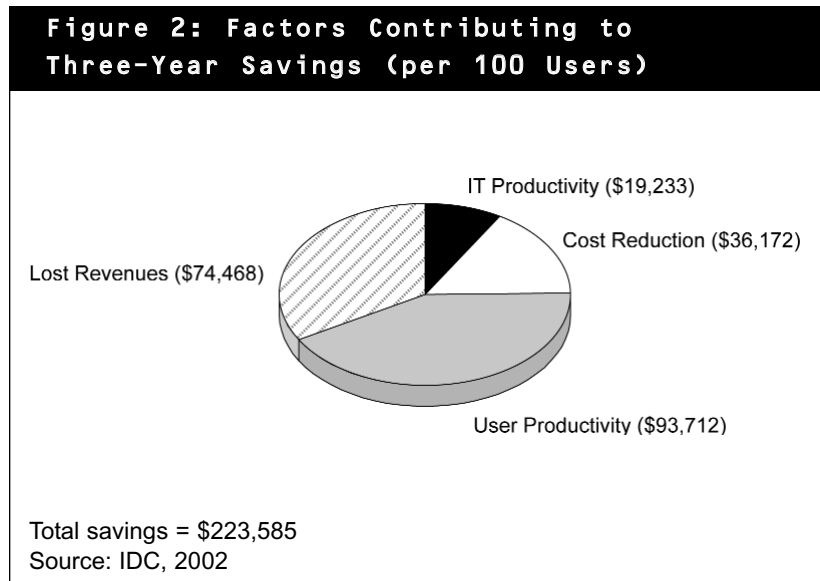
In this study, the respondents estimated that the savings in reduced business revenue from improved downtime averaged \$27,400 per 100 users.

Tools Investment

Obviously, system management tools suitable for the enterprise cost money to purchase and deploy. The total investment in the tools was considerable — a mean of \$1,330,000 in total expenditure. This represents an average of \$6,800 per 100 users over three years after taking into account software maintenance and training.

Total ROI

The total savings over a three-year period averaged \$223,585 per 100 users (see Figure 2).



The biggest savings resulted from an average 79% reduction in downtime, leading to an average savings in lost revenue of \$74,468 per 100 users over the three years, and an average savings from increased user productivity of \$93,712 per 100 users.

IDC used the net present value (NPV) methodology to determine the average total ROI of deploying the HP OpenView solution. The NPV method calculates the value in today's dollars for the three-year ROI, including the annual average reductions in operational expenses made possible by the OpenView deployment, and the cost savings from reduced downtime and increased IT staff and user productivity.

For the HP OpenView customers surveyed, these savings averaged \$223,585 per 100 users over the three years (see Table 2). IDC then accounts for the opportunity cost realized by not having invested the initial amount in some other investment yielding a 12% return. This resulted in an NPV of \$166,198 for the companies surveyed. The ROI is the net return on investment, or the NPV divided by the investment. Based on an average investment of \$12,819 over the three years, the average ROI was 1,296%.

Table 2: Average ROI Results for HP OpenView Solutions (per 100 Users)

	Average Result
Three-year savings due to productivity, efficiency, and availability (\$)	223,585
NPV over the three-year period (\$)	166,198
Total investment over the three-year period (\$)	12,819
ROI	1,296%

Source: IDC, 2002

KEY FACTORS CREATING A RAPID ROI

As in all similar studies performed by IDC on this topic, this research clearly shows that the effective use of system and network management tools can transform the view of IT from one of overhead to one of a business contributor. In other words, it can create benefits that continue to contribute real value to the business long after the cost of the investment has been paid off.

But what are some of the design features that such a management tool needs to create such a rapid ROI? The primary features revolve around high scalability and the combination of effective availability monitoring and event automation.

Effective and Efficient Availability Monitoring and Response Automation

Effective and efficient availability monitoring and event automation involve many things, such as:

- Monitoring that can detect a deterioration in service in advance of a failure so that corrective action can be taken either manually or automatically prior to the failure
- Determining the "root cause" of any problem, thus turning data into information that may be acted upon (this requires fairly complex event and data correlation)
- Relating the application and infrastructure components to the business services so that the impact on the business can be assessed
- Obtaining specific solutions for leading enterprise resource planning (ERP) applications (such as SAP, Oracle, and Baan), popular messaging applications (such as Lotus Notes and Microsoft Exchange), and Internet applications
- Monitoring the end-user experience, including compatibility with the Application Response Measurement (ARM) standard, so that future applications so instrumented can be managed from an end-user perspective

- Supporting a comprehensive and shared data and event repository to make possible highly sophisticated event correlation at a higher level, permitting multiple approaches to recovery
- Maintaining a well-managed persistence of the event data repository to permit later analysis and modeling

Operational Scalability

There are two aspects of scalability that are important — physical scalability and management scalability.

Physical Scalability

Physical scalability is the ability to scale to large environments. When the architectural design of the tool is such that polling can be reduced to a minimum, then manager-of-managers architectures that can scale to many thousands of systems are possible. This is typically achieved by using intelligent and autonomous agents on the managed systems that can take local action and only send messages to the "manager" after evaluating the need to do so. Such a design has the additional advantage of being more robust (especially in a WAN environment) because actions may be taken even when disconnected briefly from the "manager."

Management Scalability

Frequently overlooked, management scalability refers to the ability to support a wide range of organizational sizes and structures and effective delegation rules. This requires creating separate levels of responsibility with templates that define operator roles across the organization, creating user group templates, achieving mass deployment of rules and scripts, and showing the state of a service without flooding the operator with multiple messages. This may also require bidirectional message passing so that acknowledgments can pass down the hierarchy as easily as events go up it.

CONCLUSION

Integrated enterprise management tools, such as the HP OpenView network, system, and application management solutions, can be expensive to purchase and implement, but they can yield extremely rapid returns in savings in IT management efficiency and productivity as well as in reduced system and application unavailability. This recent study of successful implementations showed that the companies surveyed realize an average ROI of 1,296% based on an NPV of \$166,198 discounted at 12%.

Once the cost has been paid back, the business benefits continue to flow. IDC has consistently found that the largest single benefit of integrated enterprise management tools is the reduction in system downtime, with its associated improvements in user productivity and reduction in lost business revenue. For the companies surveyed, the average reduction in downtime from deploying HP OpenView was 79%. Thus, the investments made by IT can readily be seen as creating real value for the business — making IT a hero instead of a burden.

CASE STUDY: ATMOS ENERGY CORPORATION

With 2,500 employees, Atmos Energy Corporation is one of the largest "pure" natural gas utility companies in the nation. Founded in 1906, the Dallas-based company delivers natural gas to about 1.4 million customers, located primarily in small urban and rural areas across 11 states. Because of its geographical breadth, Atmos relies heavily on its corporate network to conduct its operations, which are considered among the most efficient in the industry.

Five years ago, Atmos started deploying its client/server network. This network replaced one based around a mainframe computer, which was difficult to support and could not scale enough to handle the high growth the company has enjoyed in the past few years, primarily through significant mergers and acquisitions. According to Scott Womer, Atmos' network operations manager, the new system would not have been possible without HP OpenView. "There's no way we could do what we do without OpenView," he says.

Using HP OpenView, the company has been able to increase its IT management efficiency considerably. "OpenView monitors all my systems, all my applications, all my infrastructure," Womer says. "For events where the fix is known, I have that automated. For an event that doesn't match with the automated options, we get paged. Basically, [OpenView] has replaced a six-person staff." With OpenView, Womer can forecast better, there are fewer calls to the help desk, and downtime has been reduced. In total, Womer estimates that the IT department has avoided hiring another four to eight full-time employees (FTEs) in a period where the network has doubled in size twice.

"By allowing us to take on more transactions without hiring, OpenView has provided a lot of business value," Womer says. "Now, our managers get reports that are used for forecasting. They can look at historical charts to see what their network and server utilization is and budget accordingly. We are saving a lot of trouble by being able to budget and plan properly. For instance, one of the plots can show us that a particular resource is going to be extinguished in about nine months. So you know with far enough lead time to plan for it. If you don't have those tools, you come in one day and the resource is dead."

One reason for the savings from deploying OpenView is the significant decrease in the number of administrators required per network device. Before, more than one administrator would be required for a network segment. Now, a single administrator can manage up to about eight servers and/or several network segments. In addition to the efficiencies gained in the IT staff, the average employee is now about 35% more productive because of the new network. "Reducing the downtime has impacted the people that use information systems on their job tremendously," Womer says. "We have mobile data terminals in people's trucks that are connected wirelessly full time. For a five-minute outage, you can lose 30 minutes of work."

Although OpenView cannot take all of the credit for such a large increase in efficiency, it is mainly responsible for a 12% increase in

availability from 87% to 99.99%. Before, there might have been hundreds of hours and 10 incidents of downtime in a month. Now, it is closer to only one hour per month. This decrease in downtime is a major contributor to the increase in employee productivity. "Any time we make an investment, we relate it to the customer," Womer says. "OpenView has helped the company gain a competitive advantage, and that helps our customers. By increasing availability and our ability to grow, OpenView has allowed us to become a more important player in the industry. We've become a top provider, known for being reliable and providing exceptional customer service."

HP OpenView was quick to deploy, taking only three months. This was impressive because the network is quite large, with more than 300 network devices and 2,500 desktops at 160 sites. Also, the number of servers is growing at 10–20% per year. The management system, which monitors all systems, applications, and infrastructure nodes, is integrated with a variety of equipment-level management tools that were provided by the equipment vendors so that the Atmos team can fix 99% of the problems with the servers and network from a central location.

Over time, Atmos has increased the sophistication of how it uses OpenView. Rather than restricting it to gathering information from Network Node Manager (NNM) traps, Atmos makes use of the OpenView Operations (OVO) agent's high degree of intelligence, including its ability to provide automated diagnosis and response. Atmos also uses OpenView to prepare formal reports on the network's performance for management, including system and application performance, and such capacity metrics as growth and expected growth in network utilization.

"We have a mission-critical network that relies heavily on centralized databases," Womer says. "We serve rural America, which is too geographically dispersed to service efficiently without the network. For our business, the network is where the rubber hits the road." The service technicians use the network to receive service requests and orders and to submit meter reading — applications that rely on OpenView's management system. Before OpenView was in place, Atmos required six FTEs to support a 24 x 7 order scheduling operation. Now, it needs only two FTEs.

Network troubleshooting/repair and performance management took one FTE before. Now it requires about half of that. Backup and archiving used to take about 1.2 FTEs. Now, with OpenView, it takes about half of that. Additionally, the effort required for print-output management has been reduced from 2.8 FTEs to about one FTE. "I think that 30% of six guys handling 9TB across 160 sites is pretty good, versus 30% of one guy handling 250MB at one site," Womer says. The team has also been able to reduce the effort required for server operating system setup and support from about three FTEs to almost one. Further, the effort required to run batch jobs, file transfers, and the like has been reduced by about 20%. "Overall, I'd have to expend a lot more staff time if it weren't for HP OpenView," Womer says.

CASE STUDY: WINGCAST

Wingcast is a joint venture formed by Ford Motor Company and Qualcomm Inc. to develop and deliver wireless mobility and information services to cars and trucks on a global basis. These "telematics" services will combine the functionality of internal vehicle electronics with wireless communications, global positioning systems, and other information technology to provide vehicle users with Internet access, voice communications, entertainment, information, and safety services.

The company plans to launch its services in the latter half of 2002, using a client/server network where the in-vehicle system will act as a thin client to the Wingcast servers. During the first year, Wingcast will focus on the North American market, using Tri-mode CDMA 1900MHz, CDMA 800MHz, and analog networks.

Having 100% network and service availability 24 x 7 is critical to Wingcast. Customers expect emergency support without exception, and downtime could result in lost customers and significant loss in revenue. Because availability is so important, Wingcast was very selective in choosing its network components and its management tools and went through a six-month evaluation period, evaluating a total of five vendors. As a result, HP OpenView has become a critical part of the company's operations. "We built our business plan around the network," says Sam Balooch, senior manager of operations, "and we are relying on OpenView to make [the required] level of availability possible."

Wingcast chose OpenView because of its ease of use and ability to readily integrate with other systems. "OpenView is easy to set up and get going," says Calvin Miles, network operations manager. "Other tools can take months to get going, if you get them going at all." Miles adds that OpenView has high out-of-the-box value and does not require much customization.

Its ease of integration stems from the fact that virtually all network equipment vendors have interfaces to OpenView. "We have found that writing interfaces to other management tools is an afterthought for the vendors," Miles says. "Not all vendors have interfaces to these other management tools."

Ease of use is important to Wingcast, which is a start-up working hard to launch its first billable service. Keeping on schedule is critical to its business plan, and OpenView has helped. "Because it was so easy to deploy, we got our network up and running faster than planned, and it's easier to keep running than we anticipated," Miles says. "As a result, we've even been able to speed up some of our launch milestones."

Part of the reason that the milestones have been shortened is because the systems management team is much more efficient. Wingcast finds that OpenView's ease of use has dramatically

improved the team's productivity. "OpenView is our foundation, and it is used to launch several tools and provide a summary analysis, instead of getting a message from one source and trying to figure out how it affects other sources," Balooch says. This means that the team can start the repair process immediately without having to jump back and forth among different subsystem-level management tools.

"You have one screen where operators can get a status of everything, as opposed to going to a bunch of different screens and tools and trying to get a clear picture," Miles says. "Because everything integrates into OpenView and you can bring everything to a single pane of glass, that saves you time in the troubleshooting and in the repair process. I think it really helps reduce MTTR [mean time to repair]." With OpenView, Miles finds that the NOC support team is 40% more efficient and the rest of the network management staff about 25% more efficient. Even with this level of efficiency, the company has avoided having to hire about 10 or 11 additional people.

Wingcast uses a long list of OpenView modules, including Network Node Manager (NNM), Operations, Reporter, Performance Agent, Event Correlation Services (ECS), and Internet Services. By incorporating Operations and other modules, Wingcast has been able to go well beyond the capabilities of managing the nodes. For instance, the team is mapping business processes and services to the alerts so that if a server is down, they know what service that server affects and what function the server has within that service. "NNM is just a piece of what we're doing," Miles says. "Operations takes NNM to the next step by using agents to help us manage services, not just a network and its components."

High availability already gives Wingcast a competitive edge, but OpenView has allowed the company to gain a much more significant competitive advantage by developing more advanced services. "We're preparing to launch second-, third-, and fourth-generation services, instead of just first-generation services," Miles says. To do this, the network has to be sufficiently advanced and well groomed to be able to support the new services. "We have found that we can keep the network prepared to accept what the application/service developers are preparing to launch," Miles says, "rather than trying to catch up to what the developers have already launched." He adds that this gives the company a significant lead over its competition.

CASE STUDY: BARCLAYS GLOBAL INVESTORS

Barclays is a United Kingdom–based financial services group primarily offering banking, investment banking, and investment management services. Barclays Global Investors (BGI), which is one of eight Barclays business groups, is the world's largest institutional asset manager. BGI manages more than £530 billion for over 2,000 institutional clients worldwide.

The importance of BGI's network cannot be overstated. Its clients expect to be able to perform online order placement and business-to-business account management at any time. The company looked to HP OpenView because it wanted a single network management infrastructure with strong event correlation features. BGI also wanted a standards-based solution that was easy to deploy and could provide a unified event diagnosis process for its network operation center (NOC). BGI chose OpenView with Performance Manager, OpenView Operations, Service Navigator, Vantage Point Internet Services, and the Event Correlation engine.

BGI needed just three months to deploy OpenView. It considered this a much faster deployment time than it would have achieved with a different management tool. "We wanted a simple but flexible tool that was scalable enough to handle our infrastructure," says John Nichols, BGI's global datacenter manager.

As a result of implementing OpenView, "we are implementing ubiquitous monitoring among our different business units, which we project will result in better management and reduced costs," says Nichols. Overall, the company is growing about 10% per year but has not had to increase its IT staff. Rather, OpenView has enabled BGI to reduce its NOC staff. Approximately 30 IT support people have become 12–13% more efficient because of OpenView. In addition, BGI can deploy new services three to seven days faster than before because the monitoring component of new services is standard.

With OpenView, less than one full-time employee (FTE) can perform the network troubleshooting and repair work that previously required 3.5 FTEs. Before OpenView, nine FTEs performed server operating system support and system tuning; now, approximately six FTEs perform the task. Running batch jobs, capacity planning, and disaster planning and recovery are about 20% more efficient.

OpenView has also enabled the company to reduce its downtime by about 40%, resulting in roughly a 5% increase in productivity for the average employee. With nearly 2,000 employees, the increase in availability alone has repaid BGI's investment in OpenView. Avoiding downtime is critical to BGI, not only because of the productivity effects but also because of the revenue impact. "At the wrong time, a single hour of downtime could cost us millions of dollars," says Nichols.

Besides reducing downtime and increasing productivity, OpenView has generated extra business value from the network. For instance, because OpenView can monitor to the applications level while providing single-screen correlation, BGI is able to increase the range of services available to its customers.

For example, Nichols cites the case of stock transaction databases, which reside in many parts of the company, and with external sources, such as brokers. Knowing the status of trades has value for companies involved in trading, and BGI is always looking for ways to improve the response time for such applications. Clearly, knowing the health of an application is much more valuable than just knowing whether the network is up. But to get the status of applications, the company needs to correlate information from many sources. BGI is using OpenView to reliably reduce the response time to get this information. "Using Service Navigator and Service Information Portal, OpenView can give us a new level of end-to-end monitoring and load trend analysis that will allow us to reduce the response time of our applications," says Nichols.

Few management tools can correlate the information from all these sources to form a single, concise, easy-to-use summary screen. "To get this level of management from other tools, we'd have to cobble together several different tools," says Nichols. "OpenView gives us what we need for a fraction of the cost. It's much more nimble and much easier to provide feedback."

BGI's application developers find OpenView's uniform interface easy to use as a monitoring tool; therefore, new applications are more uniform in deployment. "OpenView is better able to support our business plan [than its competitors]," Nichols states.

Because OpenView plays such an important role in providing network services to end users, its criticality is expected to grow as BGI's future unfolds. "We are satisfied with OpenView," says Nichols. "OpenView's family of products gives us network solutions we can leverage. Many of our enterprise systems management strategies are tied to HP's long-term technology development vision for the OpenView product line."

IDC Worldwide Offices

CORPORATE HEADQUARTERS

IDC
5 Speen Street
Framingham, MA 01701
United States
508.872.8200

NORTH AMERICA

IDC Canada
36 Toronto Street, Suite 950
Toronto, Ontario M5C 2C5 Canada
416.369.0033

IDC California (Irvine)
18831 Von Karmen Avenue
Suite 200
Irvine, CA 92612
949.250.1960

IDC California (Mountain View)
2131 Landings Drive
Mountain View, CA 94043
650.691.0500

IDC New Jersey
75 Broad Street, 2nd Floor
Red Bank, NJ 07701
732.842.0791

IDC New York
2 Park Avenue
Suite 1505
New York, NY 10016
212.726.0900

IDC Texas
100 Congress Avenue
Suite 2000
Austin, TX 78701
512.469.6333

IDC Virginia
8304 Professional Hill Drive
Fairfax, VA 22031
703.280.5161

EUROPE

IDC Austria
c/o Loisel, Spiel, Zach Consulting
Mayerhofgasse 6
Vienna A-1040, Austria
43.1.50.50.900

IDC Benelux (Belgium)
Boulevard Saint Michel 47
1040 Brussels, Belgium
32.2.737.76.02

IDC Denmark
Omøgade 8
Postbox 2609
2100 Copenhagen, Denmark
45.39.16.2222

IDC Finland
Jarrumiehenkatu2
FIN- 00520 Helsinki
Finland
358.9.8770.466

IDC France
Immeuble La Fayette 2
Place des Vosges Cedex 65
92051 Paris la Defense 5, France
33.1.49.04.8000

IDC Germany
Nibelungenplatz 3, 11th Floor
60318 Frankfurt, Germany
49.69.90.50.20

IDC Italy
Viale Monza, 14
20127 Milan, Italy
39.02.28457.1

IDC Netherlands
A. Fokkerweg 1
Amsterdam1059 CM, Netherlands
31.20.6692.721

IDC Portugal
c/o Ponto de Convergancia SA
Av. Antonio Serpa 36 - 9th Floor
1050-027 Lisbon, Portugal
351.21.796.5487

IDC Spain
Fortuny 18, Planta 5
28010 — Madrid
Spain
34.91.787.2150

IDC Sweden
Box 1096
Kistagangen 21
S-164 25 Kista, Sweden
46.8.751.0415

IDC U.K.
British Standards House
389 Chiswick High Road
London W4 4AE United Kingdom
44.208.987.7100

LATIN AMERICA

IDC Latin America
Regional Headquarters
8200 NW 41 Street, Suite 300
Miami, FL 33166
305.267.2616

IDC Argentina
Trends Consulting
Rivadavia 413, Piso 4, Oficina 6
C1002AAC, Buenos Aires, Argentina
54.11.4343.8899

IDC Brazil
Alameda Ribeirao Preto, 130
Conjunto 41
Sao Paulo, SP CEP: 01331-000 Brazil
55.11.3371.0000

International Data Corp. Chile
Luis Thayer Ojeda 166 Piso 13
Providencia
Santiago, 9, Chile
56.2.334.1826

IDC Colombia
Carerra 40 105A-12
Bogota, Colombia
571.533.2326

IDC Mexico
Select-IDC
Av. Nuevo Leon No. 54 Desp. 501
Col. Hipodromo Condesa
C.P. 06100, Mexico
525.256.1426

IDC Venezuela
Calle Guaicaipuro
Torre Alianza, 6 Piso, 6D
El Rosal
Caracas, Venezuela
58.2.951.1109

CENTRAL AND EASTERN EUROPE

IDC CEMA
Central and Eastern
European Headquarters
Male Namesti 13
110 00 Praha 1
Czech Republic
420.2.2142.3140

IDC Croatia
Srednjaci 8
1000 Zagreb
Croatia
385.1.3040050

IDC Hungary
Nador utca 23
5th Floor
H-1051 Budapest, Hungary
36.1.473.2370

IDC Poland
Czapli 31A
02-781 Warszawa, Poland
48.22.7540518

IDC Russia
Suites 341-342
Orlikov Pereulok 5
Moscow, Russia 107996
7.095.975.0042

MIDDLE EAST AND AFRICA

IDC Middle East
1001 Al Ettihad Building
Port Saeed
P.O. Box 41856
Dubai, United Arab Emirates
971.4.295.2668

IDC Israel
4 Gershon Street
Tel Aviv 67017, Israel
972.3.561.1660

IDC South Africa
c/o BMI TechKnowledge
3rd Floor
356 Rivonia Boulevard
P.O. Box 4603
Rivonia 2128, South Africa
27.11.803.6412

IDC Turkey
Tevfik Erdonmez Sok. 2/1 Gul
Apt. Kat 9D
46 Esentepe 80280
Istanbul, Turkey
90.212.275.0995

ASIA/PACIFIC

IDC Singapore
Asia/Pacific Headquarters
80 Anson Road
#38-00 IBM Towers
Singapore 079907
65.6226.0330

IDC Australia
Level 3, 157 Walker Street
North Sydney, NSW 2060
Australia
61.2.9922.5300

IDC China
Room 611, Beijing Times Square
88 West Chang'an Avenue
Beijing 100031
People's Republic of China
86.10.8391.3610

IDC Hong Kong
12/F, St. John's Building
33 Garden Road
Central, Hong Kong
852.2530.3831

IDC India Limited
Cyber House
B-35, Sector 32, Institutional
Gurgaon 122002
Haryana India
91.124.6381673

IDC Indonesia
17th Floor, Tower 2
Jakarta Stock Exchange
Jl. Jend. Sudirman Kav. 52-53
Jakarta 12190
62.21.515.7759

IDC Market Research (M) Sdn Bhd
Jakarta Stock Exchange Tower II
17th Floor
Jl. Jend. Sudirman Kav. 52-53
Jakarta 12190
62.21.515.7676

IDC Japan
The Itoyama Tower 10F
3-7-18 Mita, Minato-ku
Tokyo 108-0073, Japan
81.3.5440.3400

IDC Korea Ltd.
Suite 704, Korea Trade Center
159-1, Samsung-Dong
Kangnam-Ku, Seoul, Korea, 135-729
822.551.4380

IDC Market Research (M) Sdn Bhd
Suite 13-03, Level 13
Menara HLA
3, Jalan Kia Peng
50450 Kuala Lumpur, Malaysia
60.3.2163.3715

IDC New Zealand
Level 7, 246 Queen Street
Auckland, New Zealand
64.9.309.8252

IDC Philippines
703-705 SEDCCO I Bldg.
120 Rada cor. Legaspi Streets
Legaspi Village, Makati City
Philippines 1200
632. 867.2288

IDC Taiwan Ltd.
10F, 31 Jen-Ai Road, Sec. 4
Taipei 106
Taiwan, R.O.C.
886.2.2731.7288

IDC Thailand
27 AR building
Soi Charoen Nakorn 14,
Charoen Nakorn Rd., Klongtsonai
Klongsan, Bangkok 10600
Thailand
66.02.439.4591.2

IDC Vietnam
Saigon Trade Centre
37 Ton Duc Thang Street
Unit 1606, District-1
Hochiminh City, Vietnam
84.8.910.1233; 5

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