



Return to Business Value

Gaining ROI from Enterprise System Management

*An IDC White Paper
Sponsored by Tivoli*

Analyst: R. Paul Mason

THE SEARCH FOR VALUE

Over the past few years, companies have made massive investments in web infrastructure, enterprise computer systems, and software. These investments have always been made with the intention of creating some type of business value, but the relationship between the investment in information technology and the resulting value to the business has sometimes become obscured. For example, although the growth of distributed and web-centric computing has brought with it many benefits, it has tended to break the simple relationship that used to exist between the single-system workload and the business process it supported. Now there are many different components of the infrastructure that are shared among a large number of business applications. Some of these applications are inward-facing and support only internal systems. Some are outward-facing and relate directly to customers and suppliers. And still others represent a mixture of the two. This makes it very difficult to quantify the investment as it relates to a particular business process. The benefits sometimes accrue directly to the organization, whereas at other times they accrue indirectly via customers, partners and suppliers.

In the heady days of the economic and e-business boom of the past few years, it was relatively easy for IT management to justify further investments on the basis of meeting competitive challenges or even just to gain a web presence. Now that the business climate has turned less positive, hard questions are being asked about the real value of IT investments. For these reasons, it is necessary to step back and evaluate the actual business return on investment (ROI). This is true for all enterprise software, but nowhere is this more the case than for the software used to manage the infrastructure.

What Is the Value of Enterprise System Management?

The greater level of complexity involved in today's distributed and web-based architectures has made it a challenge to achieve the reliability, maintainability, and availability at levels that were typical of traditional mainframe implementations. The promise of enterprise system management has been that appropriate enterprise system and network management tools can bring about real, measurable business benefits by restoring these "-abilities" to higher levels. Past

www.idc.com

5 Speen Street • Framingham, MA 01701 USA • Phone 508.872.8200 • Fax 508.935.4015

IDC studies have provided unambiguous verification of the hypothesis that businesses can show extremely favorable ROI from the use of integrated enterprise management tools. The value of improved application availability and the enhanced automation of the system management process can create a payback of the investment in very short order. But the key to verifying this ROI in a specific environment requires asking detailed questions about the implementation costs and the business value of using various management functions.

This paper describes the methodology one would use to perform this analysis.

BACKGROUND

Three distinct, but closely related, technological forces have combined with business imperatives to create a high level of complexity in the IT infrastructure of today's enterprises: the rise of the distributed enterprise, the growth of the client/server computing model, and impact of the World Wide Web.

The Rise of the Distributed Enterprise

Most people credit the development of the LANs, the invention of the personal computer, and the commercialization of Unix with driving the adoption of distributed systems architectures. But this revolution could not have occurred at all unless it was reinforced by the success it achieved in flattening the traditional business organization. This shift altered the information access patterns of individuals across the enterprise by increasing the need on the part of departments and project teams to gain access to traditionally centralized information. It also encouraged previously independent and isolated departments to share information and expertise. The growth of this computing model then made it possible for senior executives to gain tools to evaluate the results of independent business units in order to streamline management and encourage the rapid resolution of business problems.

The Complexity of the Client/Server Model

The client/server model that evolved unfortunately added a substantial degree of complexity to an organization's IT environment. There grew to be a large number of desktop PCs that, in themselves, were very complex and hard to configure. The many network elements such as switches, bridges, and routers that connect them added to the confusion. In addition, there developed a variety of servers, applications, and database management systems distributed throughout the organization that further complicated the IT environment.

Copyright © 2002 IDC. Reproduction without written permission is completely forbidden.

External Publication of IDC Information and Data — Any IDC information that is to be used in advertising, press releases, or promotional materials requires prior written approval from the appropriate IDC Vice President or Country Manager. A draft of the proposed document should accompany any such request. IDC reserves the right to deny approval of external usage for any reason.

Printed on
recycled
materials



It was this new level of complexity that has caused distributed systems to exhibit availability, reliability, and maintainability (the "-abilities") that were frequently inadequate and to demand expensive IT support that tended to obscure the business value they created by the distributed systems.

The Growth of the Worldwide Web

The rapid growth in e-business and Web applications has brought increasing attention to the importance of high availability and good end-user response time. Now, for the first time in most cases, the end-user (who is increasingly a customer or buyer) is in direct contact with the application — meaning that poor response time can lead directly to lost revenue if an end-user becomes "discouraged" and abandons the site in favor of a competitor's.

In addition, Web-based technology adds even greater complexity to applications. A business transaction may originate from an end-user's client PC, traverse a local network to the public Internet, arrive at a Web server, be transferred to an application server, create a transaction on one or more host-based databases, and eventually return a result back to the originating client via the Web. This architecture means increased infrastructure complexity and more places where things can go wrong.

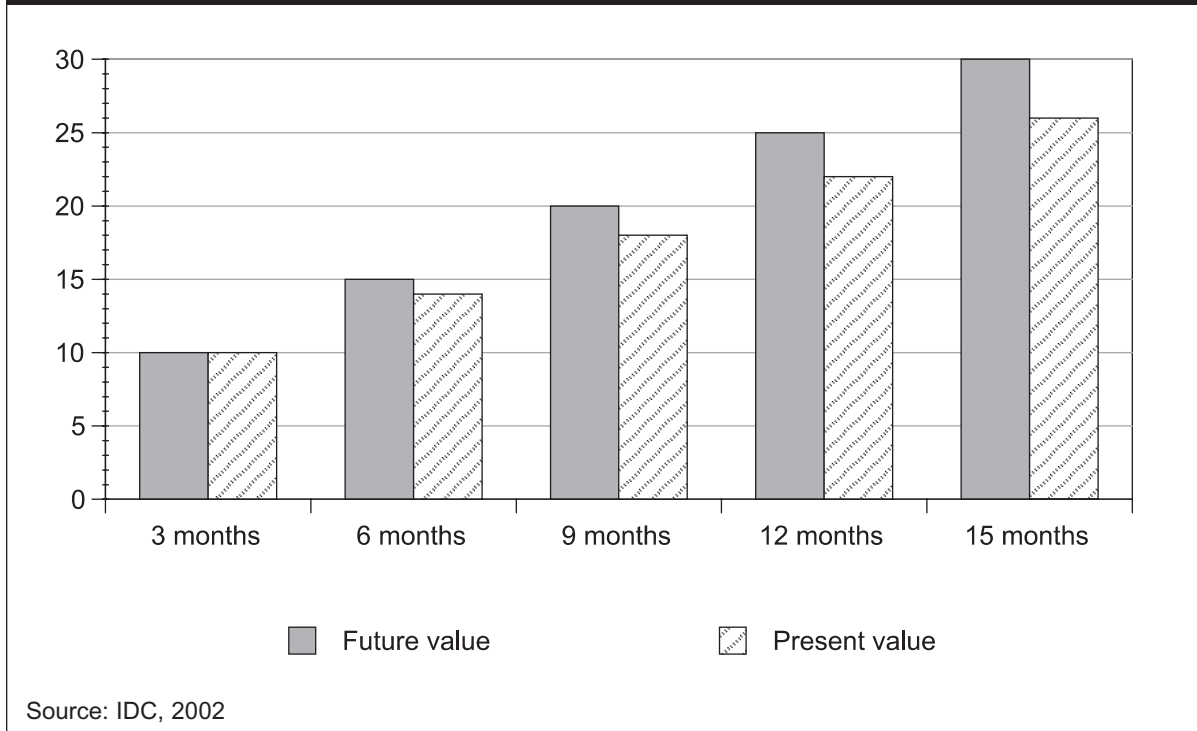
OUTLINING AN ROI METHODOLOGY

How Do You Do the Analysis?

When calculating the return on investment (ROI), it is usual to use either the net present value (NPV) method or the payback period method. The NPV method translates future value into today's dollars for the five-year returns on an investment. Future costs and benefits must be translated into today's dollars to gain an accurate picture of the investment, since a dollar spent or earned tomorrow doesn't have the same value as a dollar spent or earned today. One discounts each future amount by an appropriate "discount figure" (such as the expected rate of inflation or an internal corporate financial metric) to obtain an easily-comparable present value, representing today's dollars.

For our purposes, one first takes the initial, one-time costs of purchasing the software, including licensing fees, setup, and integration. Then one adds ongoing costs such as training, support, and annual maintenance (usually around 15%) over the five-year period to calculate the total investment over five years. These future values must be discounted appropriately, as we shall see. The returns consist of the annual cost savings or benefits over the same time period in management efficiency, management productivity, and application availability. However, rather than adding the annual costs or benefits to arrive at a total figure, each future year's amount must be discounted so that it is stated in today's dollars. This calculation yields the NPV. (See Figure 1, Net Present Value.) By using present value, investments of different lengths and complexity can be directly compared with one another.

Figure 1: NPV — Net Present Value Shows Future Values Expressed in Terms of Present Values



The alternative, and one that is a little simpler and sufficiently accurate for a short time period, is to calculate the payback period. This is simply the period in months or years of savings that would add up to the total implementation costs. In other words, how long does it take to pay back the investment? If this time is less than a few years (and past IDC research has typically found payback periods as short as two months), then the complexity of using the NPV method is not justified. (See Figure 2, Payback Period.)

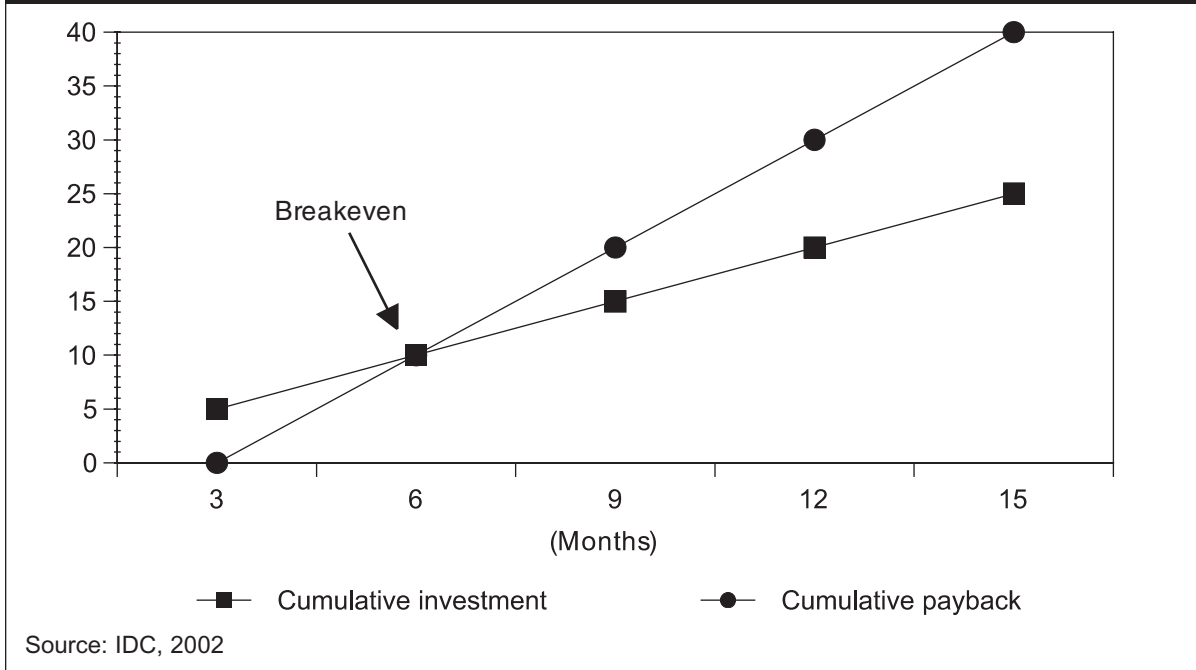
Where Should One Focus the Study?

Although past IDC research has demonstrated that there is considerable value in deploying a comprehensive, integrated system management solution, it is rare that a business that installs even a comprehensive package will implement all system management disciplines at once. Rather, IT management will typically concentrate its efforts on gaining value from those key areas where it believes it will find the most value.

In general, it is possible to focus on the following three areas of potential value:

- Enhancement of automation — the business value from achieving greater IT productivity by automating management processes
- The value of availability — reducing the cost of the downtime that prevents access to business applications by both internal and external users

Figure 2: Payback — Payback Period Method Shows Time Required to Recoup Investment



- Managing by business system — the value gained from the use of a business-process, rather than platform-specific, view of the systems

IT PRODUCTIVITY — DOING MORE WITH LESS

When trying to estimate ROI, the first thing one generally considers is the direct savings to the IT organization itself. Investments in system and network management software will presumably have the greatest effect on productivity and efficiency. The automation of system management processes creates quantifiable value in many ways. In particular, companies usually find that the increase in efficiency of the support staff permits them to service the user base with fewer additional hires and lower travel costs.

The enhanced productivity permits IT to perform routine operational tasks, such as backup and restore, system setup and upgrades, password administration, and the virus detection and purging process with fewer people.

It is easiest to focus the examination of the management tools' impact on productivity on the following three general areas:

- System and software setup, configuration, and upgrades
- Responding to user issues, such as security violations and virus attacks
- General IT operations (e.g., backup, restore, problem isolation and resolution, and the re-issue of passwords)

Productivity Gains in System and Software Deployment

The deployment of new systems and applications has become an immensely more difficult task than it was prior to the development of distributed computing. The factors that have aggravated the situation include:

- The "dis-integration" of both hardware and software products so that the buyer becomes the integrator
- The greater complexity of today's multi-tiered applications
- The greater demand for user flexibility and choice
- The rapid rate of product and organizational change found in most organizations today

The result is that some hardware upgrades are performed yearly (or even more often), major software reengineering occurs every few years, and system software changes (such as the switch from Windows 98 to Windows XP) are a constant concern.

In most companies the greatest challenge is the maintenance of internal users' desktops as the combination of hardware, operating system, and application suite changes may result in a need for frequent software updates. This is made all the more complicated by the increased use of laptops that are only intermittently attached.

IT managers generally report that the use of automated tools creates substantial savings in staff hours that are expended on such system and software deployment.

In other environments, such as large ISPs, the challenge may be in the setup, configuration and maintenance of a large number of server "blades" running multiple instances of Windows 2000 or Linux.

Productivity Gains in Responding to User Problems

IDC research has found that issues surrounding user-reported security problems and other security-related violations consumed a substantial amount of support resources. User complaints about viruses was another large time-consumer.

The use of a single sign-on tool can help with the management of the multiple passwords that users are expected to remember, but any formalized user-support and change management process can help immensely in creating productivity gains for IT staff.

The ability to efficiently resolve problems of remote, off-site users from a central location also creates massive savings in travel time and expense.

Faster resolution of user problems has additional benefits that are discussed later.

Operational Efficiency Gains in a Growth Environment

We have already discussed the improved management efficiency that can be created by the deployment of enterprise management solutions. In a growth environment, however, there is a further benefit of management efficiency. An efficient, scalable IT staff will require fewer new administrators as the business expands, resulting in a reduction in future head count.

THE BIG KAHUNA: THE VALUE OF AVAILABILITY

Everyone understands that business losses occur due to system and application downtime. These losses can be felt in many places throughout the entire company. But they usually do not show up in the IT budget, nor are improvements in that area typically credited to IT's success. If the matter is dealt with at all it is done typically via a service-level agreement (SLA) that usually ensures that IT is simply punished if it fails to honor the agreement.

This makes it all the more necessary for IT management to communicate to corporate management the cost associated with downtime and the potential savings to be achieved by reducing it. It is equally important for IT management to be able to proactively manage in the context of the service level agreements. Not only do managers need to know which agreements are in danger of violation, but also which outages actually affect the SLA, and which outages do not.

As the distributed, Web-centric computing model is deployed for more and more new business initiatives and rolled out to new classes of users, the business increasingly relies on this distributed network and system infrastructure. However, these new systems have proved difficult to sustain the levels of availability, reliability, and maintainability that was, and is, typical of the mainframe. The resultant downtime has its effect in the form of lost end-user productivity and lost business revenues.

The Savings from End-User Availability

When users do not have access to business applications, they are unable to perform their duties. The impact, of course, varies according to the task in which they are engaged. Some users will not be affected at all by downtime, other than experiencing a minor inconvenience, while others may be unable to complete key business-critical responsibilities. Point-of-service applications, remote order entry or inventory tracking, time-sensitive production environments, and anyone involved in collaborative work are all examples of environments in which system and network down-time simply stops work.

By minimizing downtime, companies can obviously reduce inefficiencies in the processes undertaken by networked employees, thus improving end-user productivity and overall company competitiveness.

These internal costs are frequently ignored, as they are typically considered "soft costs." But they are, nonetheless, real and may be calculated using the very reasonable assumption that an employee's fully loaded hourly cost (including benefits and overhead expenses) are equal to their value to the company. If this cost is \$100 an hour, then the loss of that employee's services for one hour because of a system problem costs the company \$100.

The Savings from Reducing Lost Revenues

The loss of end-user productivity is only part of the story. Other users inside the company and customers and partners outside the company may be engaged in direct revenue-generating business activities. In that case, downtime costs the company real money. This might occur because of the inability of sales personnel to access customer information or conduct transactions. This is particularly true for financial institutions that engage in large-scale transactions, but can also be a factor in such highly competitive service industries as telecommunications and airlines.

Downtime can also reduce revenue over time if it impedes the company's ability to respond quickly to customer problems; after all customer now expect service availability 24 hours a day. If they can't get their problems resolved quickly, they may go to the competition. More subtly, downtime can affect a business simply by slowing down processing procedures and delaying revenue recognition.

When evaluating the effect of downtime on revenue generation, it is necessary to identify all these possible impacts and to estimate what they might be. IDC's past research has found that this is typically the largest single source of potential savings and can create rapid pay-back in many cases.

THE VALUE OF A BUSINESS-PROCESS VIEW

A modern integrated system management application permits the manager to perform enterprise management functions from the point of view of a business process, rather than from a system, application, or database perspective. By creating an environment that manages in the context of a line-of-business process and creates a common "piece of glass" across management disciplines, it becomes possible for staff to manage the business rather than the systems.

Unfortunately the benefits of this approach, while many, are frequently difficult to quantify. They include such benefits as the ability to manage for business success rather than IT success (what could be termed Business Systems Management), the ability to proactively manage service levels in a manner that relates to business metrics, and the creation of cross-domain historical analysis to assist in better forecasting and business-impact analysis.

THE INTANGIBLES — RETURNING TO BUSINESS VALUE

The IT operation has typically been in a more-or-less continuous crisis for some time. Management has struggled to keep up with the increasing demands on the part of the business process owners to create new solutions to a range of problems, both internal to the company and outside with customers and suppliers. It has also struggled to maintain the required amount of processing power and disk storage space while maintaining high availability.

At the same time, the problems with the IT infrastructure have continued. Desktop administrators struggle to keep up with the demands of Microsoft's continuous stream of releases. Workgroup and departmental managers attempt to keep up with the demands for increased disk storage and the exploding use of remote access and collaboration tools.

But it is time for IT to proactively manage to business objectives rather than constantly managing from crisis to crisis. The goal, in other words, should be for IT to turn off the beeper. Perhaps IT management can then create the breathing space to tackle the strategic issues that link IT to the success of the business.

CONCLUSIONS

Modern distributed and Web-based environments make possible a wide range of IT-based services that create substantial business benefits for corporations. It is unfortunate that the cost of deploying and maintaining these systems has obscured these benefits for many companies. IDC believes that it is possible for IT management to provide to business management unambiguous verification that the use of enterprise system management tools can create extremely favorable returns on investment.

By deploying such enterprise system management tools, the valuable savings achieved through improvements in management efficiency, availability, and productivity can cover the cost of purchasing and deploying these tools in a very short time. Thereafter, the corporation will see the business benefits from these systems more clearly.

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 Belgium
Boulevard Saint Michel 47
1040 Brussels, Belgium
32.2.779.4604

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
Ochandiano, 6
Centro Empresarial El Plantio
28023 Madrid, Spain
34.91.7080007

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
65.226.0330

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
159-1, Samsung-Dong
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

IDC is the foremost global market intelligence and advisory firm helping clients gain insight into technology and ebusiness trends to develop sound business strategies. Using a combination of rigorous primary research, in-depth analysis, and client interaction, IDC forecasts worldwide markets and trends to deliver dependable service and client advice. More than 700 analysts in 43 countries provide global research with local content. IDC's customers comprise the world's leading IT suppliers, IT organizations, ebusiness companies and the financial community. Additional information can be found at www.idc.com.

IDC is a division of IDG, the world's leading IT media, research and exposition company.

02C3220ABCDEF3220
January 2002



www.idc.com