



# ClearCube

## *A New Paradigm in Reducing Desktop Management Costs*

*An IDC White Paper*

*Analyst: David Tapper*

### **Introduction**

Though it may seem like PCs have been around forever, the reality is that until the mid-1970s, most computers in corporations were large, centralized machines staffed with a team of technicians responsible for keeping them up and running. The advent and adoption of the PC created distributed computing, which allows the power of computing to be spread throughout the enterprise but also distributes users' computer problems. Adoption of the PC was driven by a need for more individual power. Although this need was addressed by the advent of the personal computer, it was done so at the added cost of increased management. To diagnose and resolve all of these PC-related problems in a centralized fashion, corporations created internal help desks and ramped up IT staff to handle technical support problems at the employee's desktop.

Today, many enterprises are looking at alternatives to more easily and efficiently manage their desktop computers. Some of the drivers of more efficient desktop management include an increased focus on

### **IDC Opinion**

In interviews with ClearCube Technology's customers, IDC found that ClearCube's technology can enable customers to radically maximize the efficiencies of managing their PC infrastructures while significantly improving worker productivity. The impact of these factors can enhance both top-line and bottom-line performance while reducing operating costs. Overall, the 17 customers examined for this study realized significant benefits from leveraging ClearCube technology. IDC found that a customer with a 100-seat ClearCube implementation could save the equivalent of \$35,120 annually in IT time. Based on this data, IDC calculated that a firm of 5,720 employees — the average used for this study — could realize potential savings of \$2 million annually in desktop management costs as a result of implementing ClearCube. Moreover, the potential increase in employee productivity for this size firm could amount to the equivalent of 25 employees at essentially no additional cost. While ClearCube is not appropriate for all organizations, it does allow certain types of companies to do more with less.

using technology to improve employee productivity, an increasingly complex IT environment, the rising costs of supporting the hardware and software in that environment, and the challenge of hiring and retaining qualified IT professionals to manage these systems. Further complicating these challenges is the pressure on organizations to leverage their IT infrastructures as a competitive advantage, an advantage that relies on doing more with less. In order to address some of these issues, this white paper:

- Discusses challenges associated with managing the desktop infrastructure in an enterprise, including employees' productivity and PC downtime, IT complexity, cost of hardware and software support, and the IT skills shortage
- Introduces ClearCube Technology, a company that has developed a way to mitigate many of these problems through an innovative alternative to traditional desktop management
- Presents the findings of interviews with 17 ClearCube customers that show how these customers have saved time and money while increasing productivity as a result of implementing the ClearCube architecture

## **Challenges of Managing the Desktop Environment the “Traditional” Way**

### ***Employee Productivity and PC Downtime***

Call volumes to help desks are rising. Applications are becoming more complex, and employees are using them to do more tasks than ever before. When questions and problems arise with these applications, the PC support help desk is typically the first resource called. Meanwhile, upper management is becoming more aware of the impact that PC woes and “downtime” have on employee productivity. When employees cannot access the data and applications stored on their PCs, that downtime costs the company money. In the traditional desktop management environment, the employee has to call the help desk and may even wait several hours for an IT staff member to respond.

IDC research shows that the average ratio in a commercial business-processing environment is approximately 100 PCs per IT support staff member (i.e., help desk). Although 64% of help desk calls are handled in less than one hour, almost 36% of help desk calls can take anywhere from one to 12 hours (see Table 1). Over time, PC downtime accumulates and results in a significant amount of lost productivity for the employee and the company.

Copyright © 2001 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*



**Table 1**  
**Time Required to Resolve Help Desk Calls**

Time Required (hours)	Percentage of Calls (%)
< 1	64.2
1–3	17.1
3–6	10.9
6–12	7.8

Source: IDC, 2001

### ***Increasingly Complex IT Environment***

The world of IT has moved from what seemed like the simplicity of the mainframe world in which a few large computing systems managed all IT functions to a potpourri of IT architectures that include a vast array of technologies. Today's IT environment, while still dominated by the traditional PC, has expanded with the introduction of portable devices, from laptops and personal digital assistants (PDAs) such as Palm Pilots, to wireless environments and Web technologies. Combining all of these new capabilities and technologies is taxing the ability of most organizations to maintain control of their IT infrastructures.

The complexity of the IT environment is magnified by the distribution of resources across multiple sites, often in multiple states or countries. As a result, most enterprises must maintain an IT staff at each office location to resolve issues at the local desktop. The result may be costly and inefficient, particularly for companies that have IT staff at offices with a small number of users, thus lowering the average ratio of 100 PCs per IT support staff member.

### ***Rising Cost of Hardware and Software Support***

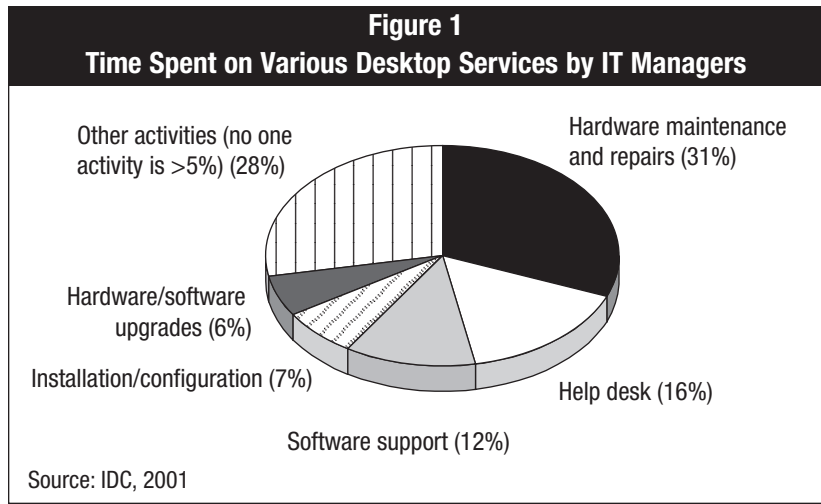
The support function within IT often takes a back seat to more high-profile project initiatives. Yet, IDC research has found that IT managers spend nearly 60% of their time addressing hardware and software support issues and responding to help desk inquiries (see Figure 1).

These internal support activities not only monopolize a majority of IT staff time but also are generally viewed as a cost center. In fact, IDC research has shown that the staffing needed to provide the support services associated with the continual operation of hardware equipment and software applications can represent 50–60% of the total cost of owning a PC.

### ***Hiring and Retaining Qualified IT Professionals***

The shortage of technically skilled professionals continues to rise. According to IDC, at the end of 2000, almost 760,000 unfilled IT worker positions existed in the United States. With demand for IT help rising to more than 5.4 million positions in 2002, the shortfall

between supply and demand is expected to increase to almost 850,000 positions in the United States in 2002 (see Table 2).



**Table 2**  
**Skills Shortage in the United States**

	1999	2000	2001	2002
Supply	3,685,408	4,054,397	4,460,331	4,906,907
Demand	4,061,566	4,468,235	4,915,624	5,407,808
Skills shortage	722,158	759,838	801,293	846,901

Source: IDC, 2001

In light of these challenges, many companies are constantly looking for more efficient alternatives to manage the desktop environment. With its architecture for desktop PCs, ClearCube has developed a viable solution to the challenges facing all IT departments.

**ClearCube: An Alternative to Traditional Desktop Management**

ClearCube Technology, founded in 1997 and based in Austin, Texas, has developed a solution to the traditional challenges of desktop management. ClearCube provides a managed desktop architecture that delivers dedicated, Intel-based PC functionality to the desktop from a centralized, rackmounted environment. By taking the PCs off the desktop and centralizing them in a back room with the servers, ClearCube dramatically increases manageability, agility, and security while providing mission-critical reliability and improvements in uptime — all without adding to IT staff.

## A Look at ClearCube Technology

ClearCube's architecture includes a managed desktop solution that provides customers with the ability to dramatically increase control, security, mission-critical reliability, and significantly improve system uptime — without compromising the PC's performance. Figure 2 provides a holistic view of three types of architectures: the traditional “fat rich” PC client/server, a pure thin-client environment, and ClearCube's desktop architecture.

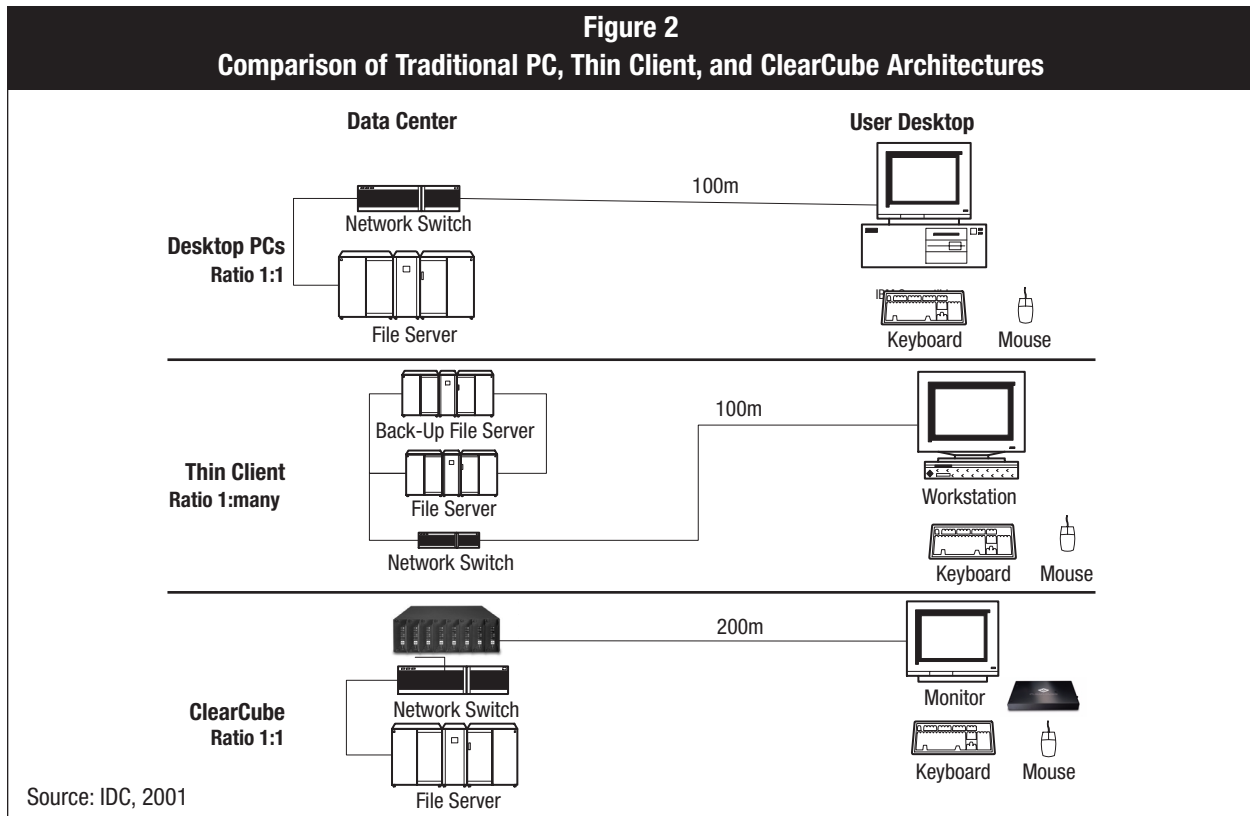


Table 3 highlights the essential differences between these three types of architecture. ClearCube's architecture provides a hybrid between the two predominant computing architectures. ClearCube's CPU Blade is essentially the PC with a dedicated hard drive and memory, but it is rackmounted back in the data center.

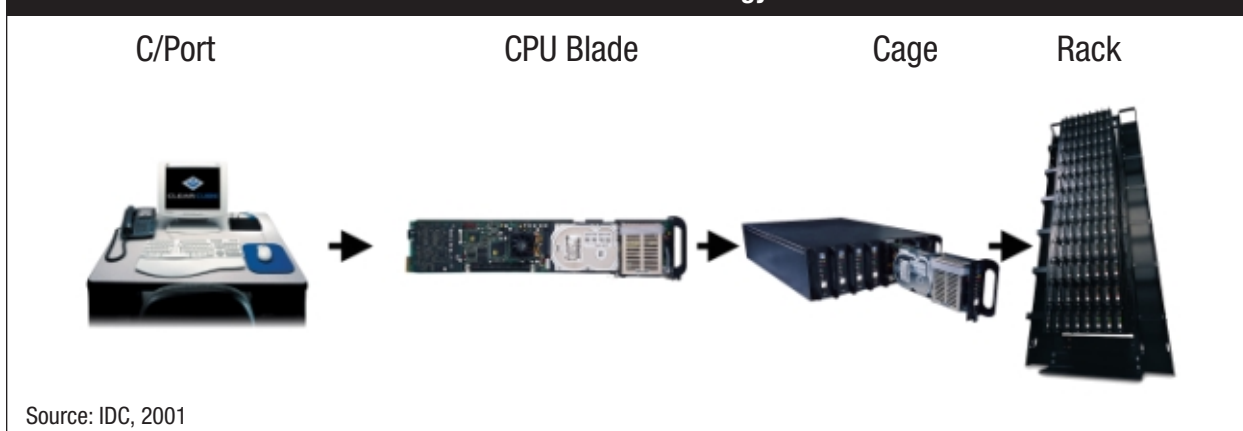
Similar to a thin client environment, ClearCube's Command Port (C/Port) sits on the desktop, acting as a terminal for the CPU Blade back in the data center. This C/Port provides users with a complete desktop experience without having a PC at their feet. ClearCube's distance technology allows the computer to be rackmounted in a secure room away from the users; in this room resides the CPU Blade. ClearCube's CPU Blade is a rackmountable 3U desktop that is just like a traditional managed desktop, providing each user with his or her own dedicated PC (see Figure 3).

**Table 3  
Key Architectural Differences**

<b>Key Differences</b>	
PCs	All processing, memory, and storage functions are located physically at the desktop within the hard drive. The viewer screen is integrated with the PC.
Thin clients	All processing, memory, and storage functions are located “remotely” and shared by all users on a central server or mainframe system. The user accesses processing power remotely through a “dumb” or standalone screen.
ClearCube	User experience is just like a traditional PC but without a hard drive at the individual’s feet. ClearCube provides each user with a dedicated machine that is rackmounted in a data center. These machines are referred to as CPU Blades.

Source: IDC, 2001

**Figure 3  
ClearCube’s Technology**



**Evaluating the Costs and Benefits of the ClearCube Architecture**

To demonstrate the business and financial benefits of the ClearCube architecture compared to the traditional approach to desktop PC management, IDC conducted in-depth interviews with 17 ClearCube customers. Customers ranged in size from \$45 million to \$5.5 billion in revenue and represent a variety of industries, including telecommunications, business services, manufacturing, and financial services. Table 4 shows key characteristics of the customers interviewed.

**Table 4**  
**ClearCube's Customers at a Glance**

	Range	Average
Number of employees onsite	75–1,500	360
Total number of employees	54–42,000	5,720
Total number of sites (physical establishments)	1–200	31
Annual revenue	\$20 million–\$5 billion	\$810 million

N = 17  
Source: IDC, 2001

***ClearCube: Enabling Internal IT Departments to Do More with Less***

Overall, the 17 customers interviewed for this study realized significant operational improvements by leveraging ClearCube technology. These benefits included:

- Reductions in downtime
- Increases in productivity due to fewer trips to the desktop, faster time to configure new users, and faster moves, adds, changes, and upgrades
- An increase in the number of PCs per IT staff

All of these improvements contributed to significant operational savings for ClearCube's customers.

***Reduction in Downtime***

Before implementing ClearCube's architecture, enterprise customers were experiencing an average of two hours of PC downtime per month per user. This equates to 24 hours in lost productivity each year per employee.

However, similar to a server environment, ClearCube aims to provide a level of uptime that is higher than a PC. More specifically, the downtime experienced by companies is equivalent to 98.8% uptime versus 99.7% with ClearCube technology. In fact, according to IDC's research, after implementing ClearCube, the same customers reduced downtime to an average of 38 minutes per month per user, a 68% reduction in downtime and a potential increase in productivity of 16.4 hours per year per employee. This equates to more than two full work days per user.

***Fewer Trips to the Desktop***

As computing environments become more distributed, IT staff must support PCs in multiple buildings, on multiple sites, and, often, in multiple ZIP codes. When problems arise, IT staff spends valuable time traveling to the desktop.

With ClearCube’s architecture, customers can dramatically reduce IT staff time making visits to the desktop. IDC’s research found that before implementing ClearCube, customers’ IT departments were spending an average of 21% of their work week making visits to the desktop. After implementing ClearCube, they reduced their trips to the desktop to 5%, an average reduction of 16%. With fewer trips to the desktop, IT staff can use their time for other activities. IDC calculated that the time savings as a result of fewer trips to the desktop equates to an increase in productivity of almost 333 hours a year per IT staff member (see Table 5).

<b>Table 5</b>		
<b>Time Savings from Fewer Trips to the Desktop</b>		
	Pre-ClearCube	Post-ClearCube
Percent of time making trips to the desktop	21	5
<i>Assume 2,080 work hours/year</i>		
Time making trips to the desktop (hours)	437	104
<i>Time “savings” = 332.8 hours</i>		
N = 17		
Source: IDC, 2001		

Based on this statistic, a company with a 10-member IT support staff could increase productivity by more than 3,300 hours a year — or 1.6 working years — allowing IT staff to focus on projects that better align with the companies’ core competencies.

***Faster Time to Configure New Users***

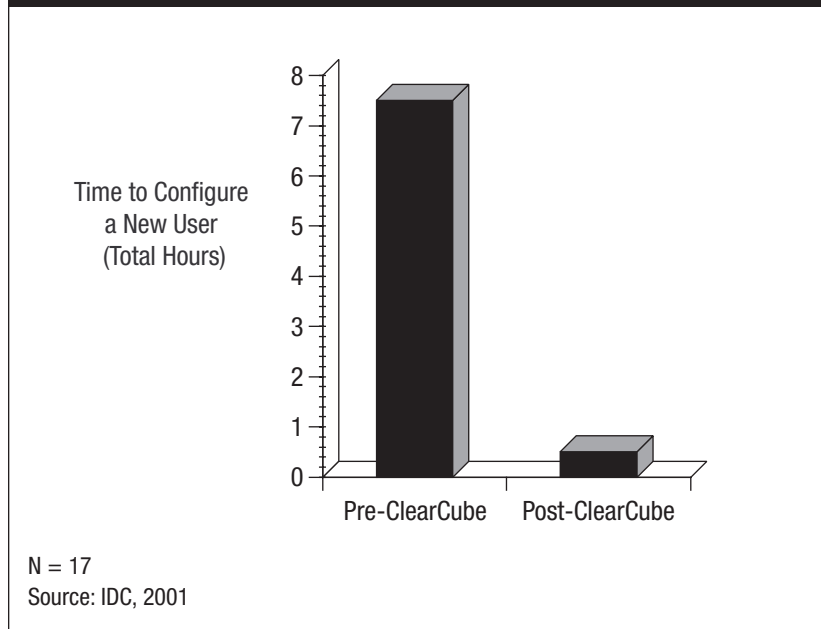
With employee turnover of 15% per year, the time for IT staff to configure new users can be significant. Before implementing ClearCube, IT staff members were spending an average of 7.34 hours to prepare, install, and configure a PC workstation for a new employee. In many organizations, new employees were waiting days without access to a PC or the necessary productivity applications. After implementing ClearCube, customers were able to reduce the time to configure a new user to only 34 minutes, a 92% reduction in installation time (see Figure 4).

***Faster Moves, Adds, and Changes***

One of the most time-consuming activities for PC support staff is moving, adding, or changing PC hardware. Typically, each time a new employee is hired, each time an employee changes his or her workstation, and each time a department or a company relocates, the company must deploy IT staff. For example, a Manhattan investment firm



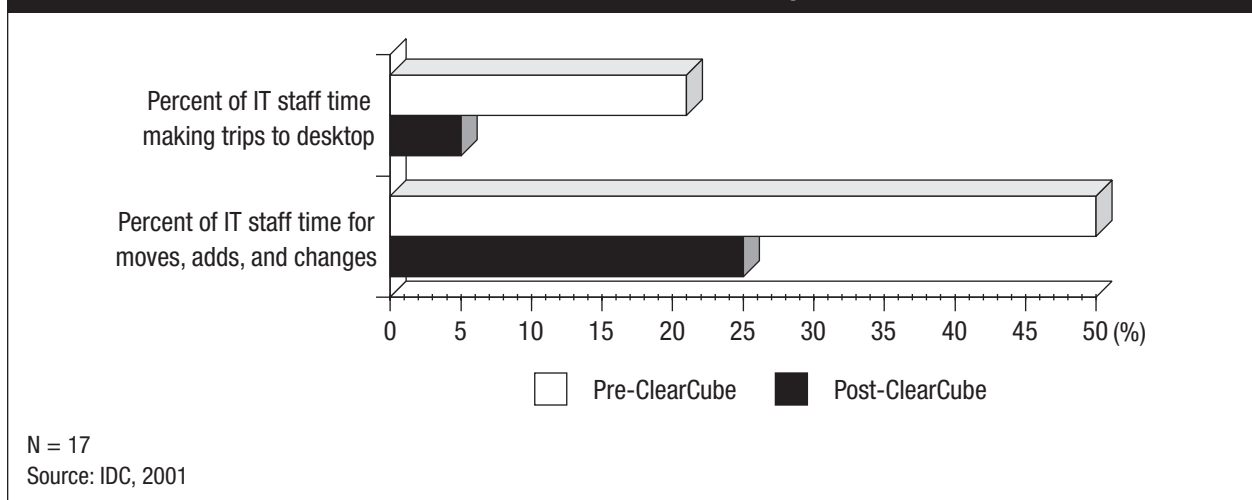
**Figure 4**  
**Reduced Time to Configure New Users**



said it moves all of its traders at least once a year, at the average cost of \$1,000 per move.

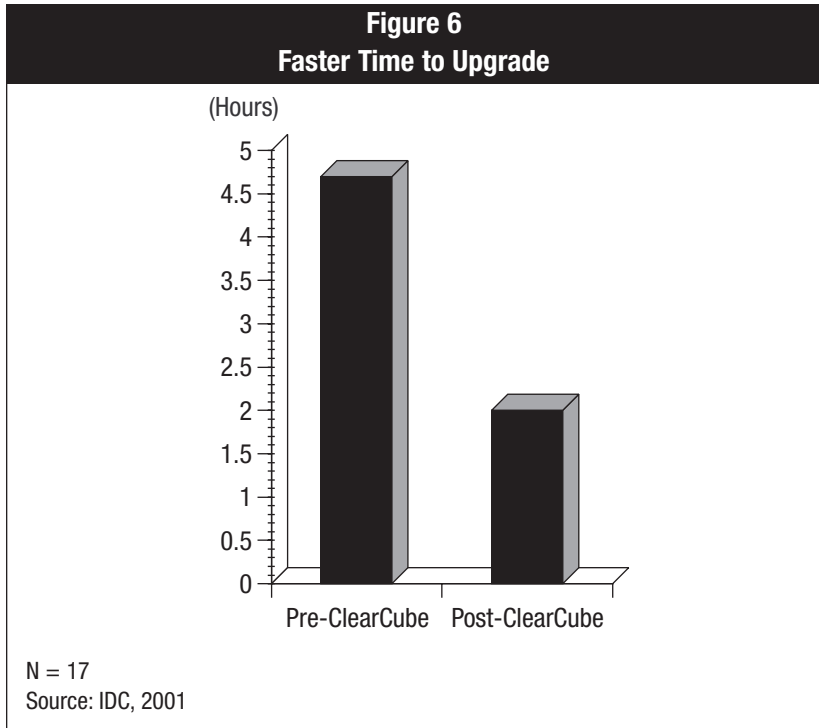
This time released as a result of ClearCube can dramatically increase the productivity of internal IT staff. In fact, before implementing ClearCube, customers' IT staffs were spending an average of 50% of IT staff time on moves, adds, and changes. After implementing ClearCube technology, customers saw the amount of IT staff time spent on moves, adds, and changes drop by 25% (see Figure 5).

**Figure 5**  
**Faster Moves, Adds, and Changes**



### *Faster Time to Upgrade*

ClearCube customers not only reduced the time for moving, adding, and changing a PC but also significantly reduced the time required to upgrade PC technologies. On average, ClearCube customers were able to reduce the time to upgrade from 4.7 hours to two hours per PC — a reduction of 57% (see Figure 6).



### *Reduced Demand on PC Support Staff*

Due to the simplicity of the ClearCube technology, ClearCube customers are able to add new users with desktops without adding IT staff. IDC's research with ClearCube customers found that customers were able to increase their number of users by 23% without additional burden to IT staff. In fact, before implementing ClearCube, customers maintained an average of 91 PCs per IT staff member with an average of approximately three IT staff. After implementing ClearCube, customers were able to increase this ratio to 115 PCs per IT staff member — while maintaining the same staff levels and without adding or expending additional resources (see Table 6). Although customers are unlikely to reduce IT staff, ClearCube does free up IT resources and funds for more value-added activities, such as strategic ebusiness or networking activities.

**Table 6**  
**Number of Desktop PCs and IT Staff Supporting Them:**  
**Pre- and Post-ClearCube**

	Pre-ClearCube	Post-ClearCube
Number of desktop PCs	308	380
Number of desktop support staff	3.4	3.3
Number of desktop PCs per IT staff member	91	115
N = 17		
Source: IDC, 2001		

**Total Operational Savings**

Customers realized a number of benefits as a result of implementing ClearCube, including:

- Reductions in downtime
- Increases in productivity due to fewer trips to the desktop, faster time to configure new users, faster moves, adds, changes, and upgrades
- An increase in the number of PCs per IT staff

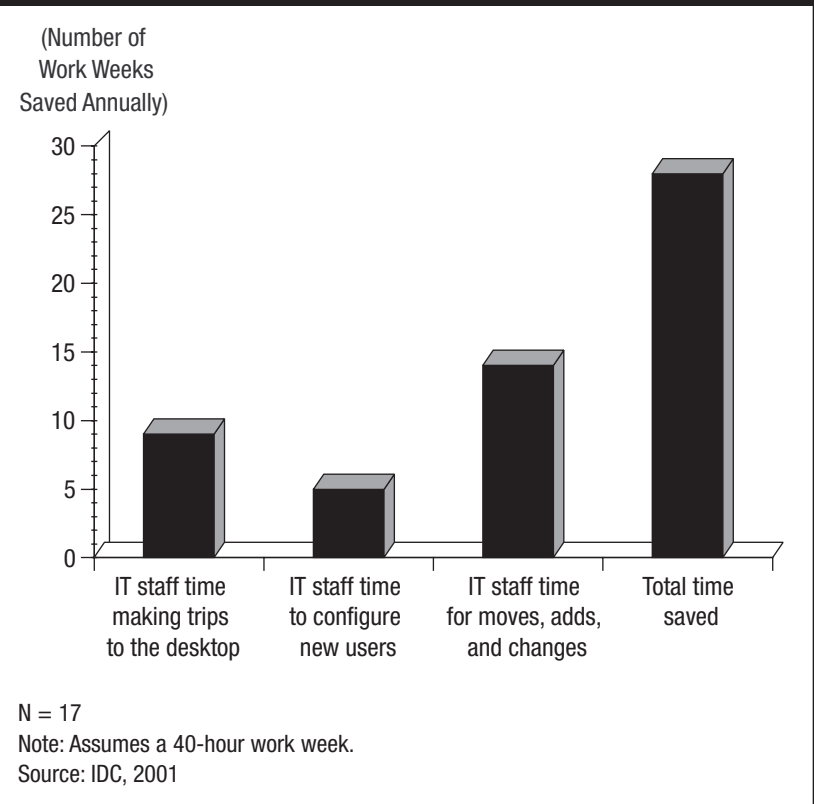
The net result of these productivity improvements is significant operational savings for ClearCube’s customers.

As shown in Figure 7, the total time saved per IT staff member in a 100-seat ClearCube implementation during the course of one year for this study is 28 weeks. This is a combination of fewer trips to the desktop (nine weeks), less time for moves, adds, and changes (14 weeks), and faster time to configure new users (five weeks).

Financially, based on an average annual IT staff salary of \$65,000, the 28-work-week savings equate to \$35,120 in annual savings for a 100-seat implementation. While this may not seem significant, it can amount to huge savings for a large or midmarket enterprise. For example, measured against the average size organization of this study of approximately 5,720 employees and using a ratio of 100 PCs per IT staff member, an enterprise with a 5,720-seat ClearCube implementation could realize an opportunity of more than \$2 million annually (see Table 7 for calculations and assumptions) in desktop management costs.

Figure 8 shows the operational cost savings for companies of varying size. Based on the data from existing ClearCube customers, a company with 100 users can expect to save \$105,000 over the useful life of the technology due to the efficiency and productivity gains associated with ClearCube (\$35,000 annually over a three-year period). A large Fortune 1000 company with 10,000 users potentially can save more than \$3.5 million annually in operating costs. While these potential savings do not necessarily mean that ClearCube customers will, or can, reduce costs and IT staff, they do imply that they are able to reallocate valuable IT staff time for more productive, nonsupport activities.

**Figure 7**  
**Number of Work Weeks Saved Based on a 100-Seat Implementation**

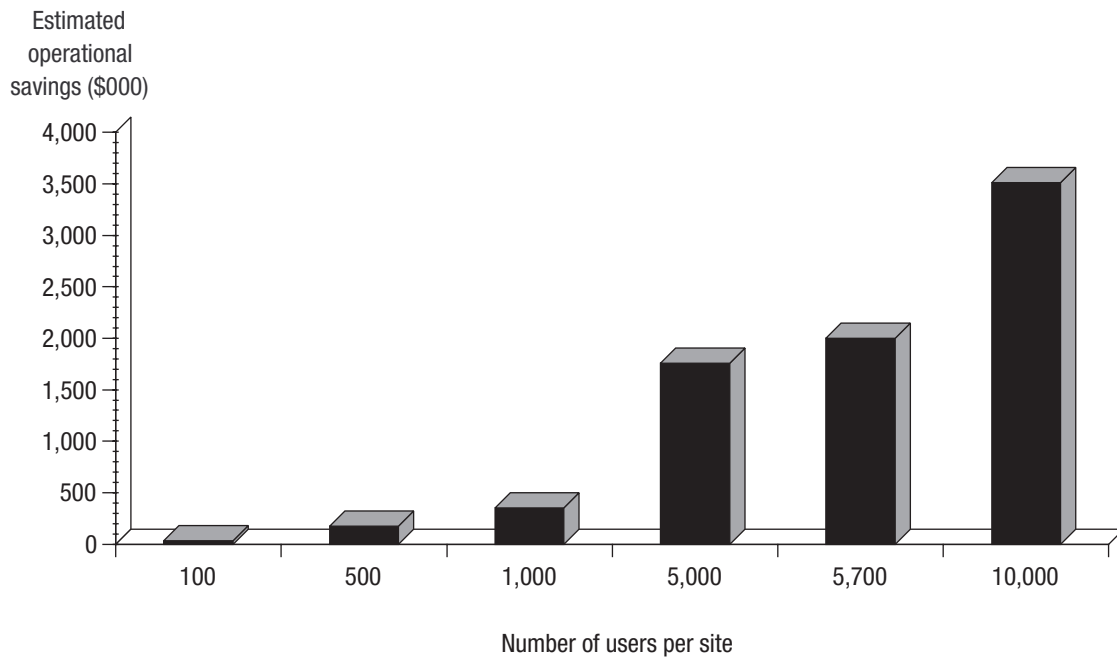


**Table 7**  
**Operational Savings from ClearCube: Calculations and Assumptions**

	Data
Time saved per IT support staff member (monthly) as a result of time savings/increases in productivity due to fewer trips to the desktop, faster time to configure new users, faster moves, adds, changes, and upgrades*	93.7 hours
Time saved per IT staff member (annualized, assuming 2,080 work hours/year)	1,124 hours or 28 weeks
Assume ratio of 100 PCs per IT staff member (i.e., one support) staff person for a 100-PC firm)	1
Assume salary of \$65,000 per year	\$65,000 x (1,124/2,080)
Estimated annual cost savings for a 100-seat implementation	\$35,120
Estimated annual cost savings for a 5,720-seat implementation (w/ 57 support staff)	\$2,001,840 or 57 x \$35,120

\* These are hard-cost savings and exclude time for user training and user downtime.  
 Note: Data is approximate and is based on averages of 17 ClearCube customers.  
 Source: IDC, 2001

**Figure 8**  
**Estimated Operational Cost Savings by Implementation Size (\$000)**



Note: Projected estimates based on responses from 17 ClearCube customers.  
Source: IDC, 2001

### **The ClearCube Experience: Benefits and Challenges**

In addition to the time and cost savings realized by current ClearCube customers, some companies have realized additional benefits from the ClearCube model. Nearly all responses to this question were positive, with only a few indicating any shortcomings or limitations of the technology. The most common benefits included the following:

- Saving space at the desktop
- Providing greater control from damage done by users, both from loading personal software to physical interaction
- Simplifying upgrades and configurations for new users
- Enhancing security
- Reducing complexity in managing desktop environment
- Improving reliability and performance while reducing user downtime

Although the benefits are overwhelming, ClearCube is not perfectly suited for all users and all environments. For example, ClearCube is not a mobile technology. While ClearCube can be used in conjunction with — or as an enabler of — a mobile environment, it may be better suited for certain desktop environments. ClearCube appropriately targets enterprises such as brokerage houses, call centers, or other organizations that

require significant computing power at the desktop for a large number of users that demand manageability, uptime, and security.

ClearCube may also be better suited for larger organizations. IDC's research found that a 100-seat firm would save more than \$35,000 a year. While this is not significant, the potential savings for a 5,000-seat implementation is almost \$2 million. Moreover, ClearCube is a managed desktop environment. Users essentially need to go through the IT department to add new applications or personal software (e.g., games). While the managed nature of ClearCube may seem confining to some users, it actually enables the IT department to maintain a higher degree of control and security.

## **Conclusion**

Overall, the 17 customers examined for this study realized significant benefits from leveraging ClearCube technology. For the average size firm of 5,720 people used for this study, the potential savings in managing their desktop environments could reach more than \$2 million annually. Furthermore, the potential increase in employee productivity for this size firm could amount to adding 25 employees at essentially no additional cost. These results indicate that ClearCube's technology can enable customers to radically maximize the efficiencies of the PC infrastructures while significantly improving worker productivity. The impact of these factors will enhance both top-line and bottom-line performance while reducing operating costs. That is to say, revenue should go up, operating costs down, and net income should improve.

Additional benefits of ClearCube's technology included saving space at the desktop; providing greater control from damage done by users; simplifying integration, configuration, and upgrades; enhancing security; and improving the reliability of the PC system. Despite some initial resistance, end users were very receptive to ClearCube's technology and, in one case, even enjoyed showcasing it.

It is clear that these customers have realized significant benefits and financial returns as a result of leveraging ClearCube's technology. As businesses turn to new PC technologies to improve their infrastructures, IDC believes it is critical to evaluate these technologies on their ability to not only meet critical business needs but also reduce the overall costs in servicing these technologies while improving the ability of users to leverage greater productivity from them.



**NORTH AMERICA**

Corporate Headquarters  
5 Speen Street  
Framingham, MA 01701  
508-872-8200

IDC Canada  
36 Toronto Street, Suite 950  
Toronto, Ontario  
Canada M5C2C5  
416-369-0033

IDC Irvine  
18831 Von Karman Ave, Ste 200  
Irvine, CA 92612  
949-250-1960

IDC Mountain View  
2131 Landings Drive  
Mountain View, CA 94043  
650-691-0500

IDC New Jersey  
120 Wood Ave South, Suite 509  
Iselin, NJ 08830  
732-632-9222

IDC New York  
2 Park Avenue  
Suite 1505  
New York, NY 10016  
212-726-0900

IDC Texas  
100 Congress Ave, Suite 2000  
Austin, TX 78701  
512-469-6333

IDC Washington  
8304 Professional Hill Drive  
Fairfax, VA 22031  
703-280-5161

**EUROPE, MIDDLE EAST, AND AFRICA**

IDC Austria  
c/o Loisel, Spiel, Zach Consulting  
Mayerhofgasse 6  
A-1040 Vienna, Austria  
43-1-50-50-900

IDC Benelux (Belgium)  
29 Avenue Louis Gribaumont  
B-1150 Brussels, Belgium  
32-2-779-46-04

IDC Benelux (The Netherlands)  
A. Fokkerweg 1  
1059 CM Amsterdam  
The Netherlands  
31-20-669-2721

IDC Central Europe (ECE)  
Male Namesti 13  
Praha 1 110 00, Czech Republic  
420-2-2142-3140

IDC Central Europe (Germany)  
Nibelungenplatz 3, 11th Floor  
60318 Frankfurt, Germany  
49-69-90502-0

IDC Central Europe (Switzerland)  
Niederlassung Zuerich  
WTC, Leutschenbachstrasse 95  
CH - 8050 Zuerich  
Switzerland  
41-1-307-1000

IDC Egypt  
39 Iraq Street  
Mohandesseen, Cairo, Egypt  
20-2-336-7355

IDC France  
Immeuble La Fayette  
2, Place des Vosges, Cedex 65  
92051 Paris la Defense 5, France  
33-14-904-8000

IDC Hungary  
Nador utca 23, 5th Floor  
H-1051 Budapest, Hungary  
36-1-473-2370

IDC Israel  
4 Gershon Street  
Tel Aviv 67017, Israel  
972-3-5611660

IDC Italy  
Viale Monza, 14  
20127 Milano, Italy  
390-2-284-571

IDC Nigeria  
House 2, 'C' Close, 403 Road, 4th Avenue  
New Extension, Festac Town  
Lagos, Nigeria  
234-1-883585

IDC Nordic (Denmark)  
Jagtvej 169B  
DK-2100 Copenhagen, Denmark  
45-39-162222

IDC Nordic (Finland)  
Jarrumiehenkatu 2  
FIN-00520  
Helsinki, Finland  
358-9-8770-466

IDC Nordic (Sweden)  
Box 1096 Kistagangen 21  
S-164 25 Kista, Sweden  
46-8-751-0415

IDC Poland/ProMarket  
Wrobla 43  
02-736 Warsaw, Poland  
48-22-754-0518

IDC Portugal  
Av. Antonio Serpa, 36 Piso 9  
1050-027 Lisbon  
Portugal  
351-21-796-5487

IDC Russia  
c/o PX Post, RDS 186  
Ulitsa Zorge 10  
Moscow 125525  
Russian Federation  
7-501-929-9959

IDC South Africa  
c/o BMI-TechKnowledge  
3rd Floor, 356 Rivonia Blvd.  
PO Box 4603, Rivonia, 2128  
South Africa  
27-11-803-6412

IDC Spain  
Ochandiano, 6  
Centro Empresarial El Plantio  
28023 Madrid  
34-91-7080007

IDC Turkey  
Tevfik Erdonmez Sok. 2/1 Gul Apt.  
Kat 9D; 46 Esentepe  
Istanbul, Turkey  
90-212-275-0995

IDC U.K.  
British Standards House  
389 Chiswick High Road  
London W4 4AE  
United Kingdom  
44-20-8987-7100

**ASIA/PACIFIC**

IDC Asia/Pacific (Hong Kong)  
12/Floor, St. John's Building, 33 Garden Road  
Central, Hong Kong  
852-2530-3831

IDC Asia/Pacific (Singapore)  
71 Bencoolen Street, #02-01  
Singapore 189643  
65-226-0330

IDC Australia  
Level 4, 76 Berry Street  
North Sydney  
NSW 2060, Australia  
61-2-9922-5300

IDC China  
Room 611, Beijing Times Square,  
88 West Chang'an Avenue, Beijing,  
P.R. China, 100031  
86-10-8391-3456

IDC (India) Limited  
Cyber House  
B-35, Sector 32 - Institutional  
Gurgaon - 122002  
Haryana, India  
91-124-6381673 to 80

IDC Japan  
10F The Itoyama Tower  
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  
82-2-55-14380

IDC Malaysia  
Suite 13-03, Level 13, Wisma KiaPeng  
No. 3, Jalan Kia Peng  
50450 Kuala Lumpur, Malaysia  
6-03-2163 3715

IDC New Zealand  
Level 7, 246 Queen Street  
Auckland, New Zealand  
64-9-309-8252

IDC Philippines  
7F, SEDCCO 1Bldg  
Rada Street Corner  
Legaspi Street  
Legaspi Village  
Makati City, Philippines  
632-894-4808

IDC Taiwan Ltd.  
10F, 31  
Jen-Ai Rd, Sec 4,  
Taipei 106, Taiwan, R.O.C.  
886-2-2731-7288

IDC Thailand  
27 Soi Charoen Nakorn 14  
Charoen Nakorn Road, Klongtongnai  
Klongsan Bangkok 10600, Thailand  
66-2-439-4591-2

IDC Vietnam  
37 Ton Duc Thang Street  
Unit 1606  
District-1 Hochiminh City Vietnam  
84-8-910-1235

IDC Colombia  
Carrera 40 # 103-78  
Bogota, Colombia  
571-533-2326

IDC Mexico  
Select - IDC  
Av. Nuevo Leon No. 54 Desp. 501  
Col. Hipodromo, Condesa  
C.P. 06100 Mexico, D.F.  
52-5-256-1426

IDC Venezuela  
Calle Guaicupuro  
Edif. Torre Seguros Alianza  
Piso 6, Ofc. 6-D, El Rosal  
Caracas 1060, Venezuela  
58-2-951-3270

**LATIN AMERICA**

IDC Miami  
Latin America Headquarters  
8200 NW 41 Street  
Suite 300  
Miami, FL 33126  
305-267-2616

IDC Argentina  
Trends Consulting  
Rivadavia 413, 4th Floor, Suite 6  
C1002AAC, Buenos Aires, Argentina  
54-11-4343-8899

IDC Brasil  
Alameda Ribeirão Preto, 130 cj 41  
01331-000 São Paulo  
SP Brazil  
55-11-253-7869

International Data Corp. Chile  
Luis Thayer Ojeda 166 Piso 12  
Providencia, Santiago 9, Chile  
56-2-231-0111

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](http://www.idc.com).

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

Sponsored by ClearCube  
01C3006SERVIC3006  
August 2001



IDC  
5 Speen Street • Framingham, MA 01701  
(508) 872-8200 • Fax (508) 935-4015 •  
[www.idc.com](http://www.idc.com)