Information Technology 2006 Performance Report

A look inside Intel's IT operations

IT@Intel

UC Davis Center for Future Information Technology

In late 2005, Intel IT and the University of California at Davis (UC Davis) founded the Center for Future Information Technology (CFIT). CFIT's mission is to advance information technology leadership. Its vision is to innovate the future of IT through vital research that has cross-cutting impact on the broad application of technology. Through a working partnership between the university and industry, CFIT is influencing a pragmatic roadmap for IT.

CFIT is dedicated to increasing information technology innovation, as well as student career opportunities. Intel IT and UC Davis worked together on several activities in 2006:

- Multiple collaborative research projects on trusted autonomics, wireless mesh networks, wireless multimedia, cryptography, and secure wireless communications
- Two successful Intel researcher-in-residence positions with the UC Davis Computer Science Department
- Intel IT seminar series sponsored by the UC Davis College of Engineering and Graduate School of Management
- Several Intel instructor-led graduate and undergraduate courses in computer science

CFIT has been enthusiastically endorsed by the deans of the UC Davis College of Engineering and Graduate School of Management, the directors of the UC Davis Center for Health and Technology and Energy Efficiency Center, and Hewlett Packard's University Relations Group.

"We're passionate about quality management education and research, and we're very excited to partner with Intel IT on researching management issues facing the information technology industry," said Nicole Biggart, dean of the UC Davis Graduate School of Management.

"The consortium fits in quite well with strengths in the college and builds on our strong collaborations with other units on campus, particularly the Graduate School of Management," said Enrique Lavernia, dean of the UC Davis College of Engineering.

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L to R: Prasant Mohaptra, professor of computer science at UC Davis, with Dhruv Gupta, and Daniel Wu, computer science doctoral students

Cover: Damaris Christ, IT support specialist

Contributing to Intel and the IT Industry

Welcome to our sixth edition of the Intel IT performance report. In this publication, we will discuss how Intel's Information Technology organization contributes to the success of Intel as we keep the business running and growing.

2006 was a year of true transformation for Intel IT. We conducted a comprehensive self-assessment that led to substantial organizational changes, ratification of key programs, stopping some internal programs, and launching others. I can truly say we transformed our organization into a more nimble and focused IT operation. As you would expect, these changes were both very difficult and very exciting.

In restructuring our organization, we reduced management layers and trimmed our staffing by 14 percent overall. This was extremely difficult for all of us in the organization, as it impacted many friends and colleagues.

We completely re-engineered our IT governance model for decision making and accountability. We began implementing a program to transform our enterprise resource planning (ERP) environment, which is now our highest priority development effort. And we ratified our commitment to our new service desk model, the Capability Maturity Model Integration* (CMMI*) approach to project management, and our data center virtualization and data center consolidation programs.

In 2006, our innovation program led to a 102 percent increase in invention disclosure submissions and a 46 percent increase in patent submissions.

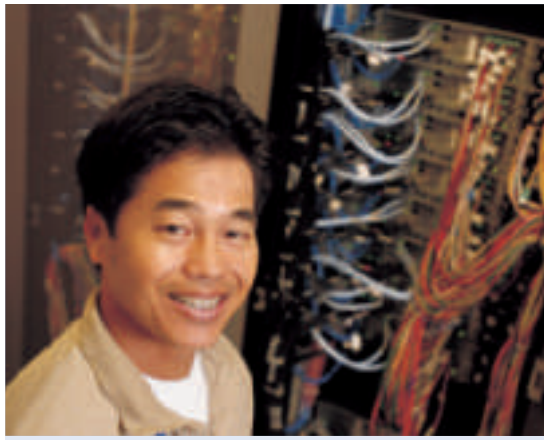
We deployed automated wireless network access at one site, with more sites planned in 2007. And we deployed new technology to enable our global workforce to collaborate more easily and effectively.

Our improved Web site (www.intel.com/IT) gives our customers better access to the latest information about our technology and our operations. We launched the IT@Intel blog (blogs.intel.com/IT), where many of our IT leaders discuss industry issues that impact a high-performance, leading-edge IT organization.

In 2007, we will continue to keep Intel running and enable growth. We will further integrate all IT activities into our corporate organization. And we will continue to empower our employees and promote operational excellence.

It has been a challenging year and without our employees we would not be a world-class IT shop. I am grateful for the many creative and brilliant people who make up Intel's IT team. I look forward to working with them throughout 2007 as we evolve into the next generation of IT.

John "JJ" Johnson
Vice President
Chief Information Officer



Richard Nguyen, network engineer

Our Mission

Deliver IT capabilities that keep Intel running and enable growth.

Our Vision

Intel IT capabilities are a core competitive strength.

Our Results

We supported Intel's business

- Plant expansions at all manufacturing facilities
- Launched 2 new manufacturing facilities and 2 test facilities
- 7 acquisitions and divestitures
- 1.3 billion (USD) in business value delivered[1]

We managed Intel's data centers

- 428 million (USD) projected ROI from data center consolidation and data center virtualization
- 64+% total compute server utilization
- Opened a new remote data center

[1] Estimate at time of publication

2006 PERFORMANCE

Clair Celeste Carnes, sales and marketing technical assistant

"An Intel IT solution helped us analyze materials spending across Intel, saving more than USD 100 million in 2005-2006."

– Craig C. Brown
Vice President and Director of Materials
Technology and Manufacturing Group

A Look Inside Intel IT

Our IT Operations

Intel IT employees: 6,100

IT sites: 74 in 31 countries

Data centers: 136

- Enterprise: 2
- Regional and small site: 27
- General purpose: 78
- High density: 7
- Manufacturing computing: 22

Who do we support?

- Intel employees and contingent workers: 97,500
  - Americas region: 55,300
  - Europe region: 15,100
  - Asia region: 27,100
- Sites: 144
  - Americas region: 42
  - Europe region: 51
  - Asia region: 51
- Countries and regions: 60

Americas region: North America, South America, Latin America
Europe region: Europe, Middle East, Africa, Russia
Asia region: Asia, Australia

Intel Information and Data Traffic

DATA TRAFFIC	2004	2005	2006
Average network throughput (terabytes per day)	200	218	248
WAN traffic (terabytes per month)	76	100	166
Backup data stored (terabytes per month)	400	580	812
Audio conferencing (millions of minutes per month)	31.8	35.7	39
MESSAGING TRAFFIC			
E-mail mail boxes	109,000	138,000	95,000
E-mail messages (millions per month)	87	113	137
Instant messaging users	48,205	66,000	70,395

Operational Efficiency

INFRASTRUCTURE SERVICES	2005	2006	EFFICIENCY GAIN
Cost per LAN node	USD 90.14	USD 81.30	9.8%
Volume of LAN nodes	*210,000*	*243,214*	
Cost per terabyte of WAN traffic	USD 0.34	USD 0.24	29.4%
Terabytes of WAN traffic per month	*100*	*166*	
Cost per data center square foot	USD 7.87	USD 6.95	11.7%
Data center square feet (thousands)	*453*	*466*	
CLIENT SERVICES			
Weeks of PC inventory	10.8	9.8	9.3%
SERVICE DESK (EMPLOYEE TECHNICAL SUPPORT)			
Consultant cost per contact	USD 26.22	USD 15.19	42.1%
Contact resolution rate	*92%*	*93%*	

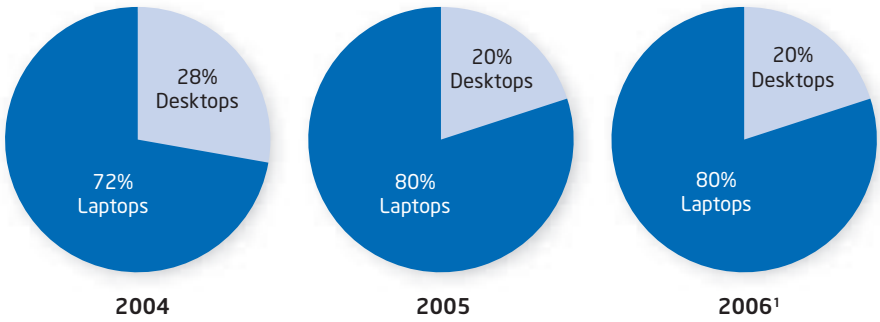
Sanjeev Gupta, server manager

5,335
Wireless Access Points at Intel
Up 14% from 2005

250
Buildings with Wireless Access
Up 10% from 2005

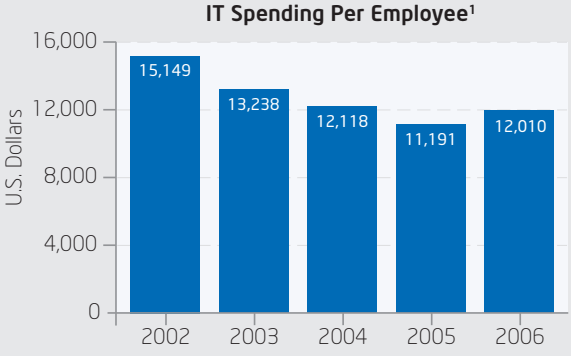
77,000
Wireless Users
Up 3% from 2005

Intel Employee Laptop to Desktop Ratios

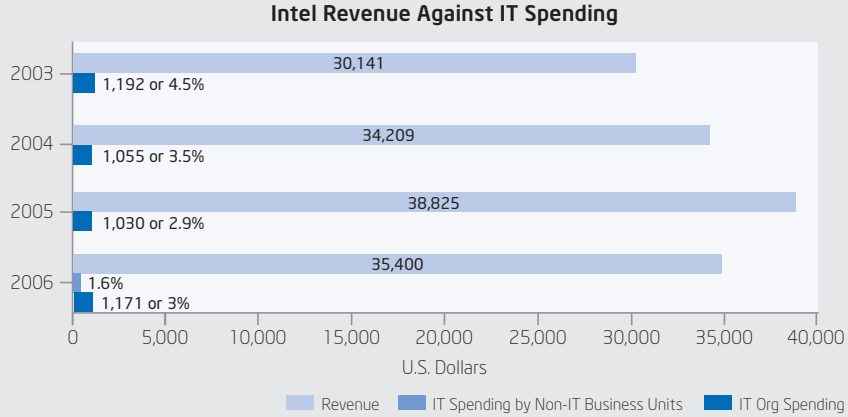


[1]2006 Regional Breakdown of Laptops: Europe 12.73%; Asia 20.41%; Americas 66.86%

How Much Does Intel Pay for IT Service and Support?



[1]2006 spending based on 97,500 workers



Cheri Brown, administrative assistant

Organizing IT for Results

2006 became a year of change at Intel, as the corporation initiated a broad review of the company's structure and efficiency. In response to this corporate initiative, Intel IT did a critical analysis of our IT organization and made high-impact structural changes that will improve the effectiveness of our operations going forward.

New Organizational Model

Our new organizational structure is designed to improve workflow and remove bureaucracy.

- We flattened the organization by reducing layers of management and increasing the number of employees who report to each manager.
- We reduced duplicate roles within IT.
- We lowered overall IT headcount by 14 percent.

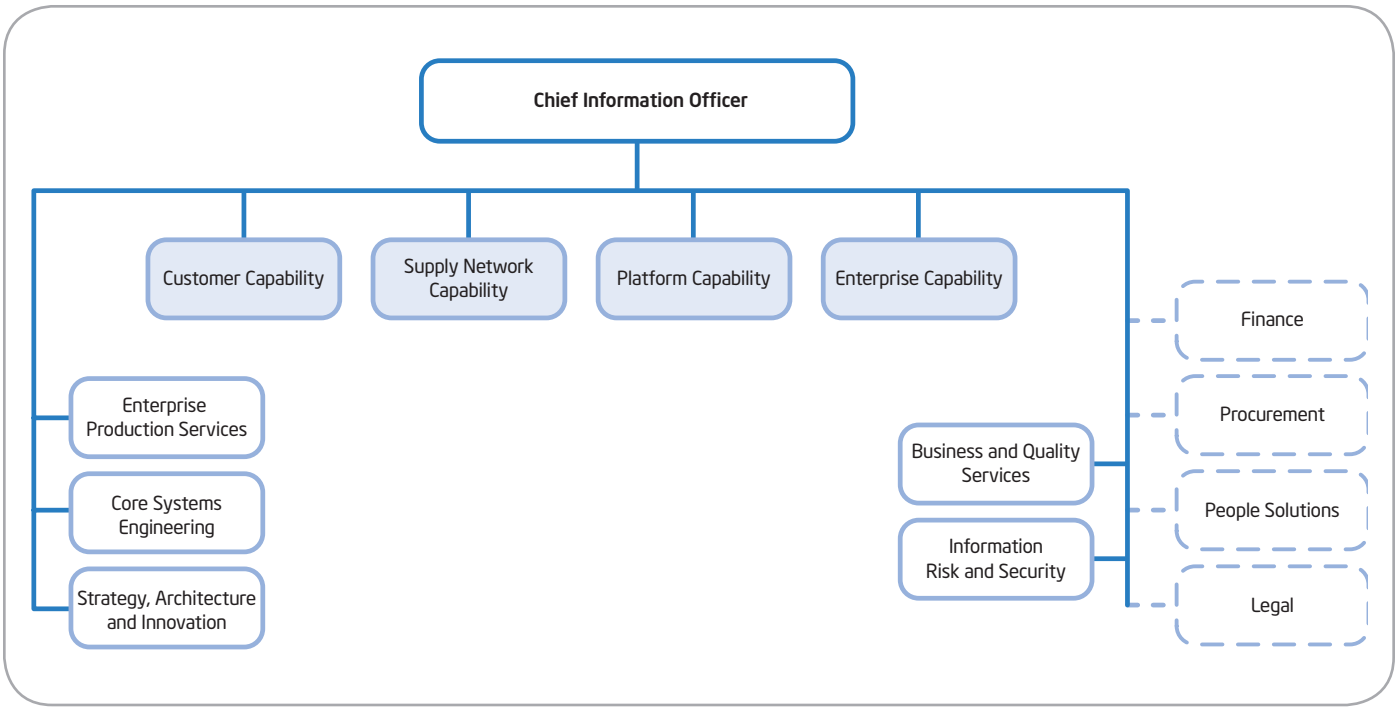
We decreased the layers of middle management—making a less hierarchical organization—to improve decision making processes and allow managers and their staffs to communicate more quickly, accelerating our ability to deliver on our commitments.

New IT Governance Model

We introduced corporate-level governance and a revised funding model. We set a goal of decreasing total IT spending versus Intel revenue by 1 percent in the next four years, from 4.8 to 3.8 percent. This includes IT spending and headcount currently funded outside the IT organization.

In our new model, the CIO will provide oversight of IT spending by both the IT organization and non-IT groups. With this framework, we can better control standards and investment decisions and align IT spending to Intel's overall corporate strategies, values, and priorities.

Intel IT Organizational Structure



Aligning with Intel Business Groups

As part of our reorganization, we created four key business units (capabilities) within IT that align directly to our Intel business partners, shown shaded in the chart on page 6.

- **Customer Capability.** Works with Intel's Sales and Marketing Group (SMG), emphasizing the needs of Intel's customers. This group partners with SMG to support Intel customer relationships.
- **Supply Network Capability.** Interfaces with Intel's materials and manufacturing organizations in the four critical areas in the supply chain: Plan, Source, Make, and Deliver. This group figures out how to build and deliver the right IT product, at the right time, at an acceptable price for our internal customers.
- **Platform Capability.** Supports the Intel organizations who develop technologies for Intel's Digital Enterprise, Digital Home, Digital Health, and Mobility platforms, as well as the Corporate Technology Group and Software and Solutions Group. Critical to the success of these business partners, the Platform Capability provides engineering tools and product design capabilities, including data center optimization.
- **Enterprise Capability.** Provides the IT infrastructure for the corporation and for the IT organization. Working with Intel's legal, finance, and human resources groups, this group optimizes Intel's finance applications, human resources and legal systems, and IT management systems.

Our new organizational structure will allow us to make continued improvements and sustain those improvements long term. These changes lay the foundation for increasing the effectiveness of our IT operations as we move into 2007.

2006 Strategic Objectives

At Intel, each business group works toward strategic objectives (SOs) that map to the overall corporate SOs. In 2006, IT identified three SOs.

1. Increase Intel's profitability.

Intel IT capabilities are a core competitive strength; we contribute to Intel's profitability.

- Provide business value that directly impacts Intel's bottom line.
- Enable Intel's supply chain.
- Design and develop new products.
- Demonstrate IT industry leadership.

2. Set the standard for operational excellence inside Intel and throughout the IT industry.

IT is critical to all of Intel's business units and we set high standards for how we operate.

- Increase IT's cost competitiveness.
- Evolve and maintain the "right" service level.
- Consolidate our infrastructure.
- Simplify the architecture environment.
- Manage risks to our data, applications, and information.

3. Make Intel IT a great place to work.

We support our IT employees—our most valuable asset—by making sure they are challenged in their jobs and can grow professionally.

- Provide training and education.
- Reorganize and streamline our IT organization so that our employees are empowered to make strategic decisions more quickly.
- Give employees the tools and technologies they need to get their jobs done.
- Provide opportunities to give back to the community.

Key Focus Areas

In 2006, we focused on critical long-range goals.

- IT organization streamlining (page 6)
- Data center virtualization and data center consolidation (page 10)
- Cost management (page 25)
- Supply chain management (page 9)

John Musilli, data center operations

one PROFITABILITY

1.3B[1]
Total Business Value (USD) Delivered by Intel IT

748M
Business Value (USD) from Supply Chain Improvements

32M
Business Value (USD) from New IT Innovations

2006 STRATEGIC OBJECTIVE ONE

Increasing Intel's Profitability

At Intel, we view IT as a competitive capability that directly affects Intel's bottom line. Our business value program analyzes IT's contributions to the corporation, helping us make better IT investments. By understanding how existing capabilities add business value, we work with Intel business leaders to plan, build, and deploy new strategic capabilities to keep Intel competitive.

Business Value Program

IT business value is the dollar value an IT organization returns to the corporation in the form of top-line growth or bottom-line improvements.

Our business value program provides data that helps us optimize investments in programs and projects. It monitors and tracks the actual value returned versus forecast. With a common language and measurement methodology across the organization, this innovative closed-loop process gives us an enterprise-wide view of our investments and our contributions to the overall success of Intel.

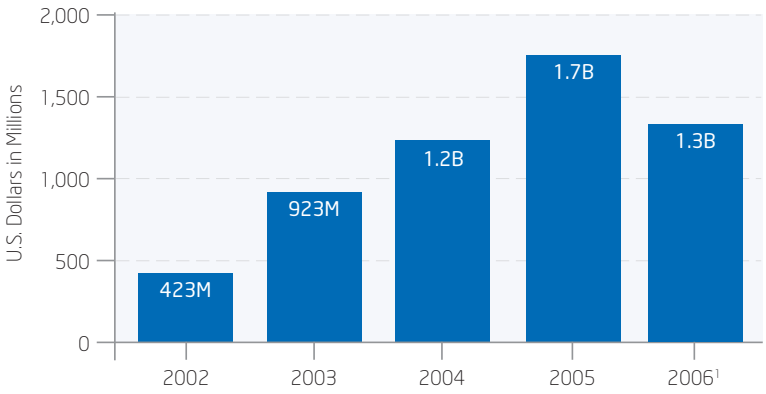
To date, our investments managed by this process have delivered more than USD 5.5 billion in gross business value since the business value program's inception in 2002. This represents a growth in business value of more than 33 percent, year over year.

Leading the Industry

Our business value program has generated interest and queries from other companies. We've been invited to speak about it at numerous CIO forums and customer engagements through our IT industry outreach program, IT@Intel.

A number of academic institutions have endorsed the business value methodology, introducing the practice to future IT leaders and executives. At a Stanford University-sponsored CIO symposium, Stanford University's Graduate School of Business recognized Intel's leadership on business value, highlighting our program as a best known method.

IT Business Value



[1] Estimate at time of publication

Helping Manage Intel's Supply Chain

Intel IT keeps our manufacturing facilities running efficiently by providing tools to support the mission-critical inflow of goods and services and outflow of product. We improve Intel's supply chain performance by reducing manual operations, resulting in timely delivery of products and services at the lowest cost.

In 2006, we provided operations support and facility startup services that exceeded quality goals and schedule requirements. We improved our resource management by deploying an integrated automated solution for managing contingent workers.

We moved indirect materials purchases to a standard enterprise resource planning (ERP) solution and provided global procurement reporting and analysis in a single tool. This gave our purchasing department the ability to find the best values available worldwide.

Jennifer Barbour, corporate manager

CAPABILITY	GOAL	RESULTS
Keeping the Manufacturing Facilities Running		
Manufacturing Facilities Support	▪ Provide operations support that meets or exceeds facility quality goals.	▪ Exceeded goal by 4x.
Manufacturing Facility Startups	▪ Provide facility startup services and support that meet or exceed schedules.	▪ All new facility ramps and modifications completed on time. ▪ Maintained manufacturing availability during a process upgrade.
Improving Our People Systems		
Contingent Workforce Management	▪ Provide an integrated automated solution to manage contingent workers.	▪ Deployed a single company-wide ERP solution and process to manage contingent workers.
Enhancing Supply Chain Capability		
Global Procurement Reporting	▪ Provide centralized Intel procurement data and analytical capabilities.	▪ Deployed a single reporting and analysis solution, capturing and centralizing 98% of Intel worldwide spending information.
Worldwide e-Purchasing Solution	▪ Consolidate Intel indirect materials procurement.	▪ Moved 100% of indirect materials purchases to a standard ERP e-purchasing solution.
Tactical Demand Forecasting	▪ Respond to 60-80% of customer requests within one business day for targeted products.	▪ Met this goal for targeted products.
Direct Materials Supply/ Demand Alignment	▪ Reduce supply-and-demand alignment cycle time for direct materials.	▪ Deployed solution on time, at one third of the estimated cost.

Partnering with Business Groups Speeds Time-to-Market

In IT, we not only support the Intel product design process, but also look for ways to improve it. In 2006, we moved our competitive platform benchmarking assessments earlier in the product design cycle. This shortened product time-to-market by up to six months, enhanced our quality assurance capability, and enabled third-party software application developers to optimize for Intel® platforms.

For the Design Automation Conference in July 2006, we worked closely with electronic design automation (EDA) application vendors to educate them on the power and performance benefits of the Dual-Core Intel® Xeon® processor 5100 series. IT helped increase press coverage for the new architecture prior to and during the conference, making Intel® products more compelling. "IT has made significant contributions to our launch," said Diane Bryant, vice president and general manager of Intel's Server Platforms Group, noting how much "industry CIOs and IT decision makers value hearing the firsthand experience of Intel IT" through the technical papers we've published on this new platform.

Dual-Core Intel® Xeon® processor 5100 series

L to R: Laura Giese, server administrator, and Paul Vargo, network engineer

Optimizing our Data Centers

Over the last year, Intel IT faced the significant challenge of increasing compute capacity while keeping costs down. We developed a plan to increase our server usage capacity and efficiency, and to reduce costs while improving our data center strategies. We adopted strategies to deliver a more efficient high-performance environment to our engineers.

The activities we began in 2006 achieved a net present value (NPV) return of about USD 158 million and will provide an estimated return of USD 428 million NPV by 2010, primarily from three sources:

- Increasing computing system utilization to 80 percent or more
- Actively refreshing servers on a four-year cycle, to return a value of USD 140 million over five years
- Significantly decreasing the number of data centers worldwide

All of these sources equate to cost avoidance: we have less capital expenditure and our data centers require fewer support people. The following four interrelated strategies help us achieve these results.

Data Center Virtualization (DCV)

Our DCV strategy enables us to remove the physical, geographic, and organizational boundaries for sharing compute servers. Traditional data centers support local business units with many standalone computers performing dedicated functions for individual applications. Through data center virtualization, we remove the dependencies to specific machines, allowing applications to compute where servers are available on a global basis.

While not all design activities can benefit from DCV, those that do account for about 70 percent of the batch demand, and an impressive 50 percent of all compute cycles. We increased our batch computing utilization from 55 to 66 percent, yielding an estimated return of USD 77 million. For every additional 1 percent utilization, we will earn an estimated return of USD 7 million (in 2006 dollars).

In a recent proof of concept, our Israel design team ran compute tasks on servers located in data centers in several locations worldwide. By relying on 6,000 unused and available servers at remote locations, the team shortened the design schedule by two weeks, speeding up time-to-market and avoiding expensive server purchases.

Visit www.intel.com/IT to read related content:

High-Density Air-Cooled Data Centers: Case Studies and BKMs

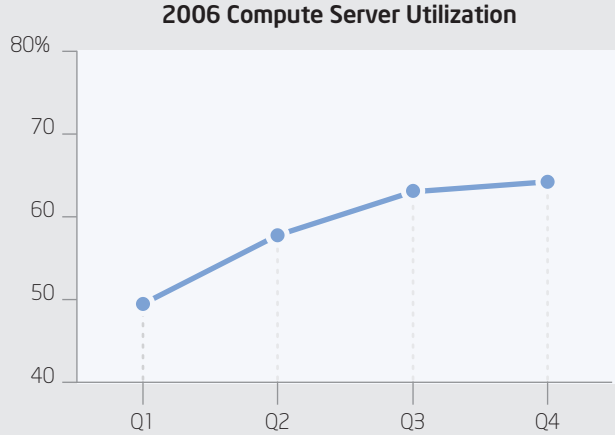
Energy-Efficient Performance for the Data Center

Key Design Engineering Metrics

Design Engineering Efficiency

	2005	2006	Decrease
Installed Compute Servers	~60,000	~58,000	3% ↓
Design Sites	66	58	9% ↓
Data Centers for Design	77	74	4% ↓

2006 Compute Server Utilization



Cutting Costs through Remote Data Centers

Intel IT's Data Center Implementation team is cutting costs by looking at alternative models for providing compute power. As part of this initiative, we are consolidating compute capacity into a series of remote data centers at lower-cost locations.

This year, we added 7,500 servers to one of our existing remote data centers. And in March 2006, the team opened a new remote data center in the southwest United States, converting an outdated Intel facility into a high-performance data center with approximately 2,600 remote servers in just 12 months.

We chose this specific location because it allowed us to reuse an existing facility. In addition, power is relatively inexpensive and taxes are low, compared to other areas of the United States. In 2006, this data center returned savings of more than USD 7 million.

The remote data centers serve numerous sites located in different geographies. The cross-site regression capability greatly reduces the manpower and other resources needed, while effectively making use of our existing compute capacity. Intel design engineers now have access to much greater and more flexible compute power. "The extra capacity provided by the remote data centers improved our design engineers' ability to stay on schedule, with the compute power they need, when they need it," said Richard Malinowski, vice president of Intel's Mobility Group and general manager of Intel's Chipset Group.

Lisa Wade, data center computer support technician

Data Center Consolidation (DCC)

DCC capitalizes on the cost-effectiveness of large data centers. Whether measured in cost per square foot or cost per megawatt, Intel's new modular, large-scale data center designs are much less expensive than our older models. Combined with the flexibility offered by data center virtualization, this strategy lets us stop or slow improvements on legacy data centers and refocus our data center investments in locations that offer the lowest costs for power, cooling, building expansion, and labor.

For example, using these strategies, we converted an outdated manufacturing facility to a low-cost, centralized, remote computing hub (see story above).

Long-Range Planning (LRP)

LRP establishes processes and indicators for improving our storage and server capital requirement planning. With DCV and DCC, an improved planning and forecasting system means we can make smarter decisions about how we purchase and place servers in the location that delivers the highest value to Intel.

Proactive Server End-of-Life (EOL)

Our program to proactively EOL our legacy servers plays a significant role in our savings strategy. By deploying the latest generation of servers based on Dual-Core Intel® Xeon® 5100 series processors, we gained 80 percent performance improvements while using 40 percent less power. This allows for faster execution of design workloads, conserves energy, and reduces requirements for data center floor space.

We achieved an estimated return of USD 9 million in 2006 by actively refreshing about 5,000 servers this year. Each Dual-Core Intel Xeon 5100 series processor-based server replaced three to four low utility- and space-consuming servers.

By accelerating our server replacements to a four-year cycle, we can take advantage of new technologies that reduce the costs further, such as demand-based switching to dynamically tailor power loads and Intel® I/O Acceleration Technology (Intel® I/OAT) to optimize network I/O throughput.

"The extra capacity provided by the remote data centers supports our design engineers with the compute power they need, when they need it."

– Richard Malinowski
Vice President, Mobility Group
General Manager, Chipset Group

Visit www.intel.com/IT to read related content:

Server Consolidation Using Quad-Core Processors

Server Rightsizing: Dual-Socket Systems Cut Costs

Mario Vallejo, senior wireless network specialist

"IT's data center strategies give engineering increased capability, allowing us to deliver products ahead of schedule."

– Pat Gelsinger
Senior Vice President
Chief Technology Officer

Visit www.intel.com/IT to read related content:

Architecture and Design of a Primary Wireless Network

Wireless LAN as the Primary Network

Emerging Technologies

Exploring and adopting leading-edge tools and technologies gives Intel a competitive advantage through productivity improvements and cost savings. More than just a service provider, we add value to Intel by acting as a voice of the IT industry and by being Intel's number one customer.

We collaborate with groups throughout Intel to improve designs and processes. We serve as a test subject to analyze and benchmark technologies, develop usage models, and conduct proofs of concept. Our work has influenced not only Intel's product design roadmaps, but also industry IT solutions.

To meet the demand for higher computing capacity, we created a virtualization solution that provided high performance, energy efficiency, and lower operational costs without adding servers to the data center. By consolidating four physical machines into one physical machine running four virtual machines, we calculate a USD 6 million reduction in annual direct operating costs for a data center with 10,000 servers.

"IT's improved data center strategies give engineering increased capability, allowing our product teams to continue to deliver products ahead schedule," said Pat Gelsinger, senior vice president and chief technology officer.

We encourage ongoing innovation within IT, harnessing our IT practitioners' ingenuity into an invention submission and patent program. In 2006, IT was approved for 32 patents in various stages.

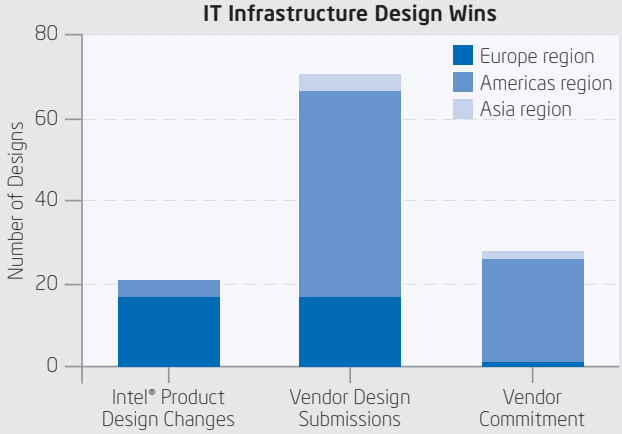
Prior to 2006, we had multiple tools for compliance, patching, and provisioning. Our goal was to automate the process and reduce the number of tools to one.

We improved the efficiency of our system management process and tools on 46 percent of Intel's devices, adding 3,500 devices per day. The solution improved individual productivity tenfold and cut the build time by almost half. In our manufacturing facilities, the new process reduced client and server build times by a full 50 percent.

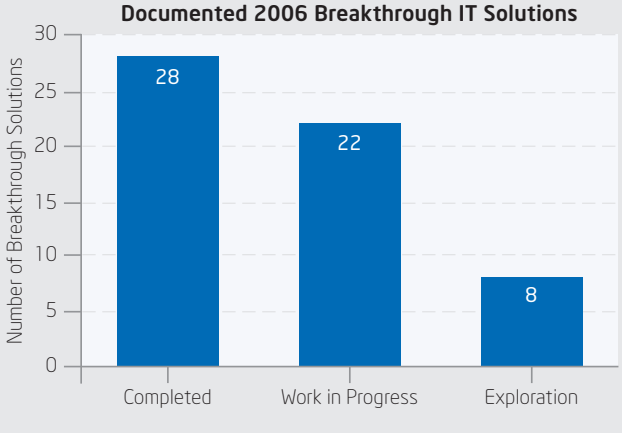
In addition, we developed and deployed a primary wireless network for data, voice, and video. We achieved comparable network performance between wired and wireless LANs, which affords Intel's employees more flexibility in the way they work. The primary wireless network was deployed on one campus with 6,000 employees and we're planning additional future deployments.

Key Emerging Technologies Metrics

IT Infrastructure Design Wins



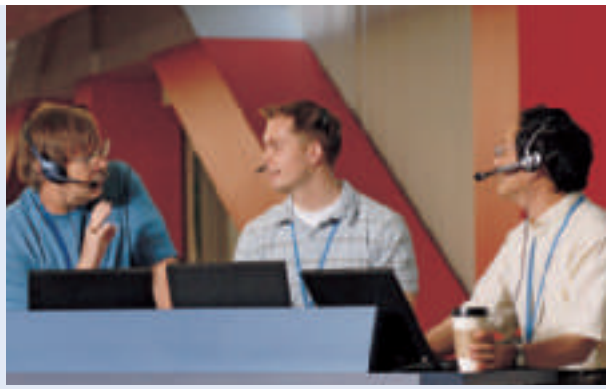
Documented 2006 Breakthrough IT Solutions



Primary Wireless Network Improves Intel's Work Environment

Intel IT is developing and deploying a wireless network that carries data, voice, and video. With performance and reliability comparable to wired networks, this network will become the primary access method for Intel's increasingly mobile workforce, helping employees stay connected wherever they are.

We've installed the network at a large 6,000-user campus in the United States, and we're deploying the technology at two other locations. The network supports our office productivity software, as well as high-quality voice over IP (VoIP). It enables employees to take their "office phones" with them, continuing to make and receive calls without interruption as they roam over the wireless network.



L to R: Dave Brooks, network engineer; Leigh Wing, network specialist; and Li Wang, network manager

This groundbreaking technology initiative enables Intel employees to stay seamlessly connected to applications on their laptops and handheld devices when they leave their desks to attend meetings elsewhere on site, instead of having to reconnect to the network at each location. Many features are available for traveling—anywhere that offers a wireless connection, including hotel rooms, airports, and other Wi-Fi* hotspots. Employees can use the same technologies and tools when they work from home as they do in the office, making it easier to achieve a work/life balance. With richer online collaboration tools they can use wherever they are, they can reduce meeting travel time.

Employees have responded positively to the new technology so far. Our studies show that they particularly like the ease and speed of connecting to the network, and that overall they prefer the wireless over the wired LAN.

CAPABILITY	GOAL	RESULTS
Application Simplification, Standardization, and Replatforming	▪ Improve our ERP system platform so it is more stable, flexible, and scalable.	▪ Identified a stable, scalable ERP and business suite infrastructure as the foundation for all new ERP system capabilities and for replatforming legacy system functionality. ▪ Began migrating functionality from legacy to new ERP system. ▪ Landed master data foundation.
Network Security Enforcement on Connection	▪ Improve security and increase control of access to Intel's network.	▪ Created methodology for validating devices as they connect to the Intel network. ▪ Integrated emerging technologies to create an additional layer of perimeter security.
Intel® Architecture Platform Testing and Benchmarking	▪ Demonstrate performance and cost benefits of servers based on the Dual-Core Intel® Xeon® processor 5100 series with Intel® Virtualization Technology.	▪ Demonstrated that the Dual-Core Intel Xeon processor 5100 series delivered higher performance and better energy efficiency, compared to a competitor processor, using five IT workloads ▪ Intel's servers supported 49% more virtual machines (VMs) using the same power and performance in a four-socket server, and 25% more VMs in a two-socket server, compared to competitor servers.
Network Transformation and Unified Communication	▪ Transform Intel's wide area network (WAN) architecture for next-generation unified communication.	▪ Developed a global network architecture and deployed next-generation VoIP on one primary campus. ▪ While keeping costs flat, quadrupled WAN capacity and migrated the network core to a Layer 2-agnostic network.
Consolidated Hosting, Reuse, and Sharing	▪ Streamline operation, increase utilization, and reduce costs by defining a consolidated data center strategy while developing a virtualized hosting environment.	▪ Developed a large data center strategy that will enable an estimated return of USD 428 million by 2010. ▪ Completed a production pilot of an end-to-end (procurement to production) hosting model.

L to R: Mark Dineson, research engineer (remote), and Fred Alexander, human factors and usability engineer

Innovation and Research

Intel IT is a culture of continuing innovation. We support Intel's core value of risk taking in a variety of ways, such as fostering creative thinking, challenging the status quo, embracing change, learning from our successes and our mistakes, and rewarding informed risk taking.

In 2006, we responded to Intel's business challenges with a shift in our strategy, designing projects to generate immediate business impact. Working with business units across Intel, we accelerated adoption and delivered projected business value of USD 32 million, holding flat to 2005 despite significant program cuts.

Intel® Innovation Centres

Our global network of Intel® Innovation Centres provides platform demonstrations to stimulate innovation in IT design, development, and use-case modeling. In 2006, IT hosted more than 32,000 visitors at our 12 Centres.

These Centres initiated programs such as the interactive Web site www.skoool.ie, WiMAX* in Russia, work with the Chinese Olympic Committee, and education collaboration with the Ministry of Education in Malaysia, Nigeria, and other emerging markets.

Measuring Innovation

Measurement is critical to successfully managing our innovation programs, allowing us to identify and analyze our work. In 2006, we increased the number of innovations that reached mass adoption, with five projects achieving broad diffusion or external usage. We had more than 700 invention disclosures, 89 of which were accepted for intellectual property protection.

Collaboration

A network of labs and experts work on collaboration projects. Immersive face-to-face videoconferencing (shown in photo) enables life-size video collaboration that reduces travel costs for meetings. A 3-D information workspace lets users intuitively organize and navigate documents and applications, allowing work groups to collaborate online and share their work environment.

Enterprise Computing

We created a test environment for virtualization that enables dynamic infrastructure design. Through virtualizaton with grid, we can scale-up and scale-out for more efficient resource sharing and deployment. 2006 projects included on-demand e-mail capacity and workload and power optimization.

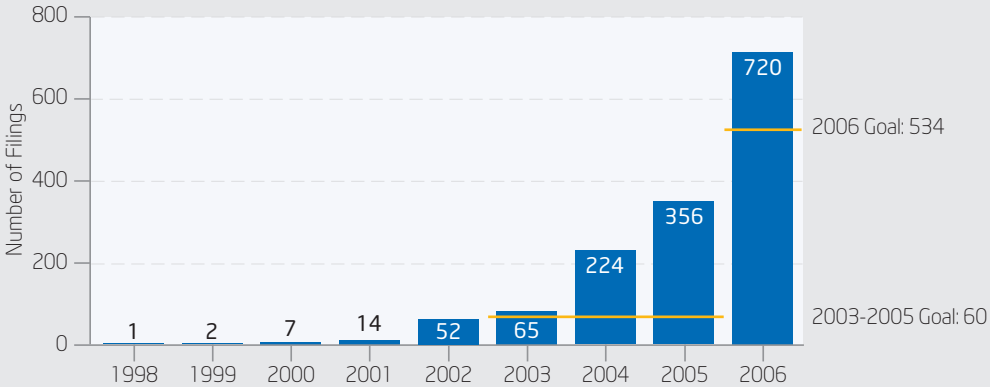
Visit www.intel.com/IT to read related content:

Developing Systemic Innovation in an IT Organization

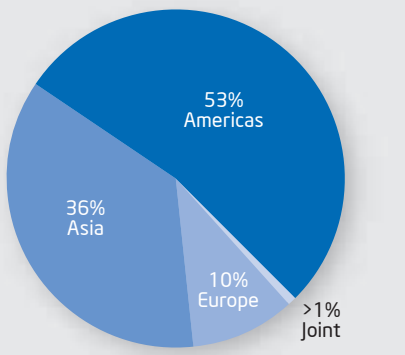
Systemic Innovation Plus Extreme Programming Improves IT Software

Key Innovation/Research Metrics

2006 IT Invention Disclosures



2006 IT Invention Disclosures by Region



Enabling Information Technology Investments

Intel IT's new Innovation Value Institute (IVI) was officially opened at the National University of Ireland Maynooth, with sponsorship from a broad spectrum of industry and government sources. The institute will serve as a global hub for research on how to credibly determine the business value of new information technology capabilities as they are implemented in businesses and the public sector. The methodologies and tools developed at IVI will provide CIOs and CEOs the data they need to make disciplined IT investment decisions.

In a key foundation program, a consortium of organizations has begun collaborating, using an open innovation approach to develop an IT Capability Maturity Model* (CMM*). A senior Intel IT leader is providing the initial IT Capability Maturity Framework* (CMF*) supporting the initiative. In 2006, more than 15 classes on the IT CMF were taught through the IT@Intel industry outreach program.

Humanity House, National University of Ireland Maynooth

CAPABILITY	GOAL	RESULTS
Systemic Innovation	• Increase the incorporation of systemic innovation (innovative thinking and business practices) into the Intel IT culture.	• Established a comprehensive framework of tools, practices, and people to nurture innovation across IT and Intel, including a champion in each IT organization, a toolkit, and training. • Created an index of innovation indicators, showing achievement of goals.
Big- and Little-Bus Architecture	• Establish reference architectures and guidance for service-oriented architecture (SOA) at Intel. • Support high-volume manufacturing.	• Implemented SOA based on a highly resilient, multi-layered enterprise message-bus configuration; includes reusable infrastructure services such as caching, logging, and notification. • Developed a reference implementation that proved that the architecture works. • Laid a foundation for a projected cost savings of USD 250 million.
Prediction Markets	• Generate accurate, stable, and timely demand signals, enabling improved supply network planning.	• Mobile CPU and channel supply management teams ran monthly markets, each with a solid participant base. • Market forecasts generally met or beat traditional forecast accuracy and were more consistent over time.
Innovation Intranet Site	• Establish an intranet site for rapid dissemination of compelling new IT products.	• Deployed site and received more than 10,000 unique visitors in first five months, with more than 10,000 product downloads. • Thriving community of early adopters established, with more than 175 active contributors.
Mobile Data Grid in Telemedicine	• Work with Intel's Digital Health Group to provide cost-effective solutions for remote cardiac care to under-served and remote areas.	• Solution deployed in four centers in India; currently working on scaling the solution to multiple centers for collaboration with multiple hospitals. • Selected for the Technology Showcase as part of the Digital Health Demo at the 2006 Intel Developer Forum in San Francisco.
Imagination Camps	• Solve real business problems using a cross-section of an organization's employees.	• Deployed three week-long prototype camps, where participants learned and used effective innovative and collaborative thinking and problem solving techniques, then presented findings to staff. • These deep-dive focus camps—exemplifying systemic innovation as a way of life—focused on issues developed through a network of IT champions and supported or driven by the group's general manager and staff.

Ryan Johnson, global PC technical services

Global Workforce Productivity

In our continuing efforts to enable increased productivity across Intel's global workforce, we developed and expanded remote connectivity options for our mobile employees, rolled out new collaboration tools, and ran programs to help employees understand and adopt these technologies.

Simplifying Access for Remote Workers

We expanded the reach of our intelligent mobile connectivity program, which significantly simplifies remote access management, use and tracking for Wi-Fi*, Ethernet broadband, and dial-up services while on the road. We deployed the service to more than 9,000 employees, up from 900 in 2005. Employees can now use the service at more than 60,000 hotspots. We are working with providers to extend it to more locations, such as airports and hotels.

We began deploying wireless wide area networking (WWAN) to Intel's most mobile employees. We worked with Intel business groups to identify employees who needed always-on connectivity, then arranged for local cellular providers to provision service.

Using cellular WWAN on their laptops and handheld devices, our sales teams experienced a productivity gain of more than 1.5 hours per week. They used instant messaging to get quick answers to questions, downloaded up-to-date documents for Intel customers, and found they could deploy live Internet-enabled technology demonstrations more quickly.

As we switched to faster and more convenient alternatives, we discontinued our older dial-up service, saving Intel business groups an estimated USD 6.1 million by September 2006.

Wireless LAN

We extended secured wireless LAN (WLAN) coverage to 100 percent of Intel office space, delivering wireless access onsite to more than 81,000 employees by equipping more than 290 buildings with more than 5,300 wireless access points.

Audio Conference Scheduling

We launched a new audio conference scheduling system and integrated it with our other conferencing tools. We expect it to deliver a 30 percent productivity increase.

Real-Time Collaboration

We introduced an online conferencing application that improves productivity and reduces costs. Approved external collaborators can participate in online meetings. It is easier to use and integrates with our office productivity software.

User Adoption

We helped employees adopt technology through a coaching and mentoring program, IT roadshows, and targeted education. We found that by explaining how technology meets specific business requirements and molding training to users' immediate needs, employees more readily accept technology and use it to become productive.

Employee Support

In 2006, we aligned and simplified all of our support channels to reduce the confusion an employee may experience when looking for support, technical or non-technical.

By adding options like chat, online service requests, and extensive Web-based self-help and self-healing capabilities, we created a more user friendly customer experience and increased employee efficiency.

Visit www.intel.com/IT to read related content:

Architecture and Design of a Primary Wireless Network

Implementing Quality of Service for Voice Over Wireless LANs

Using Data-Driven Solutions to Meet Challenging Workspace Needs

Using Customer Segmentation to Deliver Targeted IT Solutions

Saving Time and Creating Business Value

Most Intel employees work with individuals and teams who are located at different sites. To collaborate, these cross-site teams spend more than 65,000 hours per month in audio conferences, which translates to about 400,000 audio bridges scheduled. After analyzing our audio conferencing scheduling system, IT determined that making the system easier to use and adding some critical features would mean significant time savings and business value of USD 2 million per year.

After achieving a usability rate 20 percent higher than our requirements, we rolled out the new audio conferencing scheduling system. It's been very well received by users. Their enthusiastic survey comments indicate that the new system is easier to use, saves time, and helps employees become more productive.

Roy Beiser, network engineer

CAPABILITY	GOAL	RESULTS
Enhancing Connectivity		
Wireless LAN	▪ Deploy second-generation WLAN. ▪ Enable 802.1x authentication on Intel® Centrino® processor-based laptops, eliminating virtual private networking (VPN) for wireless access onsite.	▪ Completed at all IT-supported sites. ▪ 72,500 wireless users in 2006, compared to 66,000 wireless users in 2005.
Dial-up Networking	▪ Eliminate Intel's dial-up network (DUN) infrastructure.	▪ Eliminated DUN infrastructure throughout Intel. ▪ Provided lower-cost options to employees, saving USD 2.4 million per year.
Spam Reduction	▪ Limit amount of spam reaching inboxes.	▪ Blocked an estimated 61% of inbound spam in an average e-mail volume of more than 42.5 million messages per month.
E-mail Messages	▪ Improve e-mail connectivity.	▪ More than 4.8 million e-mail messages delivered daily, on average, compared to 3.9 million in 2005.
Real-Time Data Conferencing	▪ Improve real-time collaboration data conferencing capabilities.	▪ Introduced new data conferencing application in 2006. ▪ With 49,000 users since inception, new application provided more than 1 million minutes of real-time data conferencing per month.
Refreshing Our Technology		
Conference Room Projectors	▪ Replace old projectors or install projectors (in rooms without projectors) in 400 conference rooms.	▪ 350 conference rooms refreshed (old projectors replaced with new). ▪ 350 conference rooms upgraded (projectors added to conference rooms that previously had none).
Audio Conference Scheduling System	▪ Improve the audio conference experience through a 25% reduction in time spent on scheduling.	▪ Developed and deployed a new audio conferencing scheduling system. ▪ Achieved a 30% time savings on each transaction.
Empowering Employees		
Blogs	▪ Increase communications between senior leaders and employees.	▪ Established an internal blog community with 91,246 blog users and 2,219 bloggers.

John "JJ" Johnson, Intel CIO

Leading the IT Industry

Intel faces many of the same challenges faced by enterprises around the world. By being an early adopter of new technology and a risk taker based on Intel demands, we can share our experiences and best known methods, influence the industry to innovate, and influence Intel to invest in platforms that solve IT challenges.

Influencing Product Design

We serve as an IT reference point for technology product developers, at Intel and in the industry, by sharing what we've learned in all aspects of our IT operations.

Internally, we initiate discussions with Intel platform development groups to influence platform design at the earliest stages and help Intel deliver solutions that the IT industry wants and needs. We then document those breakthrough solutions and their economic benefits (see chart below) and share them with the IT industry.

This year, we held a series of high-level strategic discussions between IT staff members and our Intel business unit vice presidents. Focusing on IT industry topics that could help optimize future platform results, the participating leaders discussed possible technologies, solutions, and capabilities needed to transform the IT business. Meeting topics included client computing and manageability.

We also contribute to Intel platform design by providing early performance evaluations. We rigorously assess and benchmark Intel's platforms against our competition and feed this information back to Intel designers prior to product launches. In 2006, we moved our platform assessments earlier in the design cycle. This shortened product time-to-market by up to six months, added another level of quality assurance to Intel's product releases, and enabled third-party application developers to optimize their software for Intel® platforms (see the Intel® Xeon® processor story on page 9).

Sharing our Experience: IT@Intel

Our IT leaders regularly share our experiences externally—in IT peer customer meetings, seminars, conferences, and roundtables, and in published white papers and technology briefs—through the IT@Intel program. Launched in August 2001, this IT industry outreach program has become an integral part of how we "do business."

Visit www.intel.com/IT to read related content:

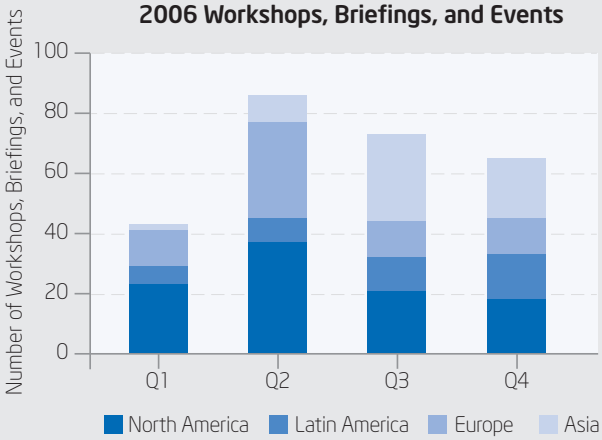
Wireless Technologies and eLearning: Bridging the Digital Divide

Chip Design on the Dual-Core Intel® Xeon® processor 5100 Series

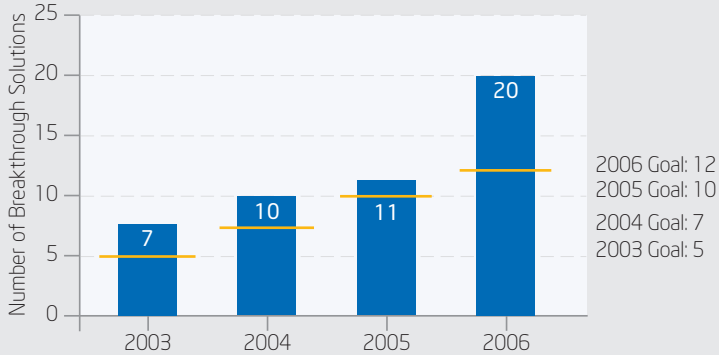
Building a Real-World Model to Assess Virtualization Platforms

Industry Leadership Metrics

2006 Workshops, Briefings, and Events



Documented Breakthrough IT Solutions



Talk with Intel's IT Leaders: IT@Intel Blog

In October 2006, IT@Intel launched the first official external Intel blog, with several IT leaders entering the blogosphere. After an unannounced launch, the blog achieved more than 20,000 visits per week. In the first four days, more than 100 blogs linked to our blog.

Blog authors discuss topics such as measuring the business value of IT, practical strategies for IT managers, computing productivity, data center management and strategies, innovation, and Intel culture. The blog allows our IT leaders to talk openly with visitors about what's happening in the IT industry and gives us a new avenue for collaboration.

See firsthand what the blogsphere buzz is about at: blogs.intel.com/IT

Meet Our Bloggers

Some of the IT leaders currently participating in the IT@Intel blog are:

Marty Menard
Director of the Platform Capability Group

Nathan Zeldes
Principal Engineer

David Sward
Senior User Experience Researcher

Martin Curley
Director of IT Innovation and Research

By publicizing our research and our implementations of next-generation platforms—such as virtualized data centers (pages 10 and 11) and primary wireless networks (page 13)—we help the industry move toward more cost effective and productive solutions.

IT at Events and Engagements

This year we doubled the number of our IT subject matter experts (SMEs)—Intel employees who manage our IT operations around the world and share their experiences with other organizations and the industry. More than 800 certified SMEs participate on a volunteer basis, providing multi-language support on a variety of IT topics and technologies.

SMEs meet one-on-one with Intel customers, provide tours of Intel facilities, speak at industry events, meet with analysts and the press, and teach workshops.

- **Conferences and workshops.** Our SMEs taught seminar sessions, shared best practices for running IT as a business, and demonstrated the latest IT technologies and solutions for IT managers around the world.

  In collaboration with Intel's Americas Sales and Marketing Organization, we cosponsored 20 Intel® Premier IT Professional Program (IPIP) workshops in 2006, with 36 planned for 2007.

  These events also helped us find out how other organizations face similar challenges, allowing our managers to build valuable relationships with local contacts worldwide.

- **Seminars and tours.** We provided seminars and tours of our U.S.-based data centers to share how we are optimizing our data centers and reducing total cost of ownership (TCO) through virtualization and consolidation strategies.

Revitalizing Our Web Presence

This year we expanded our communication channels by launching an external IT@Intel blog (see above), inviting the community to dialog with our IT leaders.

We redesigned the IT@Intel Web site, www.intel.com/IT. It features links to the IT@Intel blog, the IT Performance Report, and white papers, briefs, and videos on areas of interest to IT professionals (listed at right).

Helping Others Innovate

In partnership with Intel's Mobility group, we supported businesses in emerging markets by engaging in small and medium business makeovers. We introduced Intel® technology and showed how to derive business value from IT investments.

This year, as part of Intel's Digital Cities initiative, we helped the City of Monterrey, Mexico, set up 100 public Wi-Fi* areas throughout the city, creating the largest digital city in Latin America.

Visit www.intel.com/IT to learn how Intel IT runs its own operations:

Digital Enterprise

IT solutions that keep the enterprise running and growing

Mobility and Wireless

Mobile solutions that help Intel employees collaborate and succeed, while protecting corporate assets

Client Management

Client management, security, and collaboration to enhance employee productivity and reduce costs

Managing IT as a Strategic Business Tool

How IT provides measurable value to the corporation and helps to reduce risk

L to R: Jayne May, corporate program manager, and R. Scott Arnold, Intel® Solution Services

two
OPERATIONAL EXCELLENCE

14%
IT Headcount Reduction

87.5%
Critical Service Level Agreements (SLAs) Exceeding Goal
Down 12.5% from 2005

89%
Intel Employee Satisfaction with IT Technical Support

2006 STRATEGIC OBJECTIVE TWO

Managing the Enterprise

Operational excellence means achieving world-class results, year after year, by improving our reliability, usability, cost effectiveness, agility, and scalability. In 2006, we focused on Intel's future growth needs. By providing exemplary support for Intel's production capabilities and simplifying the IT environment, we achieved timely and repeatable performance and reduced our cost model per employee by 5 percent.

Focus Areas in 2006

In 2006, we consolidated the IT infrastructure for our call centers and data centers, delivering a standardized managed environment that can scale and reduce costs.

We also focused on providing the "right" level of service quality and improving service delivery methods.

We standardized and simplified our application environment through a major ERP replatforming effort, as well as code reuse and application end-of-life programs.

To improve the health and execution of our IT programs and projects, we transformed the workflow for delivering new capabilities. This effort will reduce project duration and cost as well as increase the quality of our deliverables.

We concentrated on increasing IT's cost competitiveness and "transparency" (attributing IT costs to specific projects so business units fully understand the impact of IT costs on their budgets).

While doing all this, we maintained appropriate levels of security protection and legal compliance.

Performance on Critical SLAs

METRIC AREA	METRIC DETAIL	GOAL	ACTUAL
Business Continuity	Material customer impact (no significant operational excursions on business critical applications: Order, Ship, Bill, Pay, Close)	0	0
	E-mail uptime	99.9%	99.9%
	Tape-out defect rate	3-6/week	5.5/week
	Virtual facility downtime	Achieved 5x goal	
	WAN availability	99.95%	99.987%
	Time to contain emergency response incidents	<14 days	0 Incidents
	Service desk cost per contact	USD 26.15	USD 21.45
	First call resolution rate	85%	92.5%
	Repair performance against commitment	95	97.79
Programs and Projects	Performance against schedule	85%	58%
Defect Density	Software	1.0	.72

The Right Level of IT Service

In 2006, we improved the quality of our IT internal operations and reduced cost of service by continuing to align our IT services with the current and future needs of Intel's business and customers.

Koorosh Vasseghi, system programmer

Although industry benchmarks indicate that the Intel IT infrastructure is generally considered best-in-class, we continue to strive for improvement. By providing the right level of service, consolidating infrastructure, standardizing business processes, and increasing operation automation, we reduced the long-term cost of service delivery by 7 percent. To deliver infrastructure proactively without constraining possible applications, we pre-provisioned the infrastructure in various ways, as outlined below.

CAPABILITY	GOAL	RESULTS
Implementing Quality Process Standards		
IT Infrastructure Library* (ITIL*)/Service-based Framework	▪ Establish process foundation and automation to improve operation quality, efficiency, and process effectiveness.	▪ Implemented a standard change management process and automation across financial applications. ▪ Completed standard incident and problem management process design and enhanced existing incident and problem tools. ▪ Refined the menu of services (MOS) for IT global operations to support service provisioning and end-to-end management of service-level agreements (SLAs). ▪ Established an organizational model based on service delivery, with service management roles and responsibilities defined to support MOS. Extended initial implementation to core operations teams. ▪ Applied best practice capabilities and resolved operational barriers in backup and restore, network, and data center service offerings.
Call Center Consolidation and e-Support	▪ Streamline messaging processes across operational organizations. ▪ Consolidate operations and shift to emerging markets. ▪ Simplify the customer's support experience by aligning all phone and online entry points.	▪ Reduced spending by more than USD 2 million in 2006 by changing our resourcing model and location of operations. ▪ Decreased staffing by more than 10% due to operational efficiencies, with plans to further reduce headcount over time. ▪ Reduced contact complexity by simplifying entry points. ▪ Increased call center technician efficiency through new technologies. ▪ Improved customer experience by providing a consistent interface and more choices for problem resolution.
Consolidated Infrastructure Reference Implementations (Server and Storage)	▪ Reduce complexity by deploying minimal platform reference designs (initially >150; goal ~20).	▪ Infrastructure pilot at New Mexico site demonstrated greater than 4:1 server consolidation. ▪ Identified and launched 4 new standard reference designs. ▪ Identified final set of 2007 reference designs. ▪ Completed 4 pilots, with 1 in production. ▪ Deployed reference designs in both development and preproduction.
Service-Oriented Architecture	▪ Create a reference architecture, implementations, and guidance for service creation and hosting.	▪ Delivered reference architecture and reference implementation for enterprise message bus and domain bus. ▪ Delivered processes and guidance for identifying and specifying services.

L to R: Dave Hartley and Rob Carpenter, senior IT architects

Transforming our ERP Environment

To enable a more agile response to Intel's changing business needs, Intel IT is simplifying our enterprise resource planning (ERP) environment. We have begun a major, multi-year transformation of our entire ERP systems landscape, standardizing on a reduced set of supplier-supported applications.

Background

In 1994 to 1996, Intel IT was among the first to implement a core ERP system. Over time, we customized our ERP applications and now support a complex web of applications that is costly to maintain and slow to change as business needs evolve.

Planning the Transformation

This year we faced the challenge of re-implementing our core ERP applications. We took a systematic approach.

1. **Build the new ERP infrastructure.** We validated the new ERP platform in our environment through proofs of concept.
2. **Develop a credible plan.** We identified more than 125 applications that connect to our core ERP platform currently, with more than 210 interconnecting dependencies. Our IT system architects divided the work into a series of small-scale projects and diagrammed the proposed end-state ERP environment. By mid-2006, we had a credible plan.
3. **Gather support.** We explained to Intel's senior executives how we would migrate to the proposed ERP environment, as an "imagine if" story. We intentionally did not specify all the benefits, allowing each executive to identify how the replatforming would help his or her own business.

Our plan succeeded. Intel's business leaders became enthusiastic supporters, providing funding and broad support for our ERP replatforming. For employees, we are using the analogy of retrofitting a manufacturing facility with new wafer equipment.

Implementing the Plan

We enter 2007 with the technical know-how, a credible funded plan, and passionate executives gaining employee support. We launched 10 ERP replatform projects focused on business process as much as on technology.

We will continue working closely with Intel's business units so that our ERP transformation can succeed, providing the business agility that is key to Intel's ongoing success.

Visit www.intel.com/IT to read related content:

Best Methods for Managing Enterprise Applications Releases

Examining IT Business Process at Intel

Streamlining IT Environments through End-of-Life (EOL) and Reuse

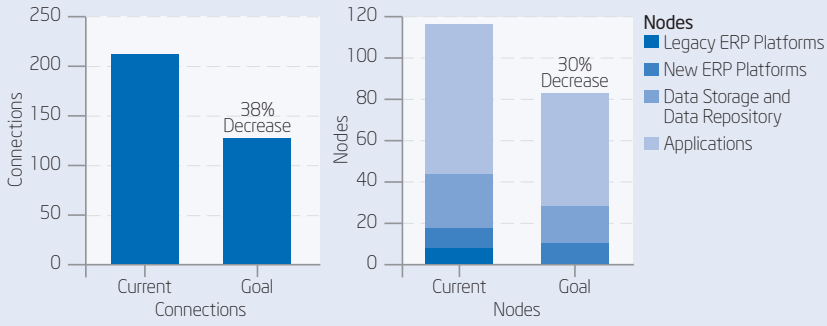
Legacy applications consume valuable IT resources and can make it more difficult to implement new technologies. This year we evaluated our IT environments. We found many inactive applications and opportunities to consolidate existing server platforms to reduce required data center space. We created a team to identify and EOL unneeded applications and infrastructure, starting in 2007. This team will put processes in place to ensure that these efforts are done consistently and on an ongoing basis.

Among the solutions:

- Requiring an EOL plan and estimated lifespan before new applications launch
- Reviewing new proposals to decide whether reuse or an ERP solution could work
- Building a database to track EOL candidates to completion

We will assess the cost and benefit of these activities during 2007 to make certain the activities are achieving their goals and providing sufficient return on the investment.

ERP Environment Transformation



Transforming IT Workflow

To increase the efficiency and effectiveness of our business processes and to reduce costs, in 2006 we began to transform the way work gets done in IT.

We implemented a program that provides methods, tools, and support (both direct and enabling) for business process re-engineering using industry standard quality frameworks.

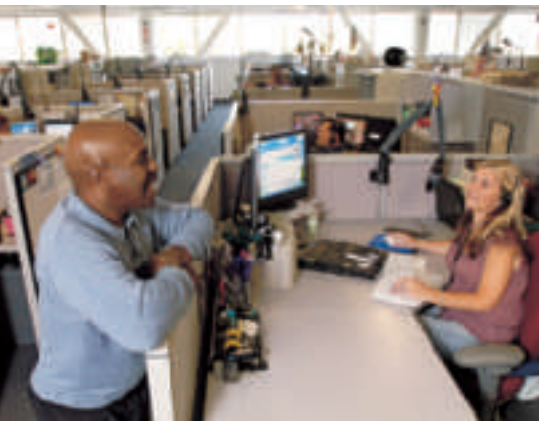
By simplifying architectural building codes, we helped program and project managers ensure compliance to architectural and security standards. We are implementing full Capability Maturity Model Integration* (CMMI*) to increase our program and project management discipline and rigor.

We are shifting the way we deliver new capabilities to an iterative, small project approach. Each increment delivers a few high-priority requirements or features that provide benefit to Intel sooner.

By broadening the roles that people play in the organization, we are increasing our staffing flexibility. And we are using a resource management solution to ensure that the right skills are available to support successful projects and on-time delivery.

L to R: Vijay Ramjan, Craig Haydamack, and Nancy Winter, business architecture office; Brian Martin, operations engagement services; and Ariel Barrera, business architecture office

CAPABILITY	GOAL	RESULTS
Business Process Improvement	▪ Certify 25 business process experts in 2006. ▪ Streamline business processes (2006 goal: USD 30 million in productivity gains and cost savings; stretch goal: USD 50 million).	▪ Trained and certified 45 business process experts. ▪ Intel business units realized USD 52 million in productivity gains and cost savings through sustained process efficiency and effectiveness in programs implementing the new business process.
Enterprise Architecture (EA)	▪ Adapt or adopt industry standard enterprise architecture frameworks, architecture development methodologies, and governance models.	▪ Delivered an IT extended architecture grid that provides a standardized classification tool for EA deliverables and artifacts. ▪ Delivered an IT architecture development methodology that defines standards for developing the EA. ▪ Delivered an IT governance model that aligns spending to business strategies, ensures compliance through a set of building codes, and enables cost competitiveness, scalability, and differentiation.
IT Program/Project Throughput Time (TPT)	▪ Measure and improve responsiveness to customers. ▪ Deliver visible results at intervals of six months or less.	▪ Developed an objective means to measure TPT. ▪ Identified opportunities for improving time-to-deliver in program structure, program management, and the management approval and resource commitment process.
Program and Project Management	▪ Use CMMI processes for appropriate IT projects, with >80 percent adoption of the IT program lifecycle. ▪ Continue to invest in the Project Management Institute's (PMI) certification program. ▪ Standardize indicators to help management track project health.	▪ Improved customer satisfaction for all IT software projects. ▪ Began to standardize our processes for non-software programs and projects. ▪ Increased our program and project management maturity. ▪ Improved management of programs and projects using accurate project health indicators. ▪ Ensured programs and projects launched only when ready and delivered intended business results.
Outsourcing	▪ Focus workforce on value tasks. ▪ Create a multi-year roadmap of outsourcing opportunities.	▪ Led IT consortiums through analysis of outsourcing and business trends. ▪ Established IT program to lead roadmap and strategic discussions.
Resource Management	▪ Implement industry standard enterprise resource management tool and process for IT.	▪ Reset the program in May, with a new scope and phased deployment plan. ▪ Deployed off-the-shelf resource management capability to two IT organizations in six months.



L to R: D. W. Scote Mathis, technical support analyst, and Kristy Lydy, IT service delivery

Customer Satisfaction

In Intel IT, we strive to deliver flawlessly on our commitments, manage expectations, and align with our Intel business partners' strategies. As the environment changes so do expectations. Asking our internal customers for feedback helps us consistently deliver outstanding solutions.

In 2006, we extended our measure of customer satisfaction. In addition to our partnership excellence program, we added an internal user satisfaction survey.

Partnership Excellence Program

Through our partnership excellence (PE) program, we assess the perceptions of Intel executive staff and senior management.

Our semi-annual interviews with senior executives tell us how well we align with internal business group needs. We receive candid feedback on our IT products, services, and performance, as well as our strategic relationship with the business groups.

In the first half of 2006, 50 percent of the executives rated IT *better than* last year and 50 percent scored IT *equal to;* 65 percent considered IT to be a strategic partner, slightly down from the second half of 2005 and significantly below our goal of 85 percent.

Based on the 2006 PE feedback, we identified strengths and opportunities for development. In addition to business-specific improvement actions, we committed to communicate and deliver on priorities; determine "right" cost benchmarks; provide financial accountability; and increase employee awareness and use of tools.

Internal User Satisfaction

In 2006, as part of our IT Infrastructure Library* (ITIL*) program, we began consolidating user satisfaction data. Through an online survey, we gathered satisfaction data from a random sample of employees who use our service desk for technical support, scoring more than 89 percent against a target of 90 percent.

The survey tool is integrated with the incident management system used by our service desk. With this tool, our IT organizations can routinely review their performance to improve their level of service and support, as needed.

A recent study conducted by the Corporate Executive Board (CEB) identified Intel as the "Top Performing Company" in their help desk benchmark.

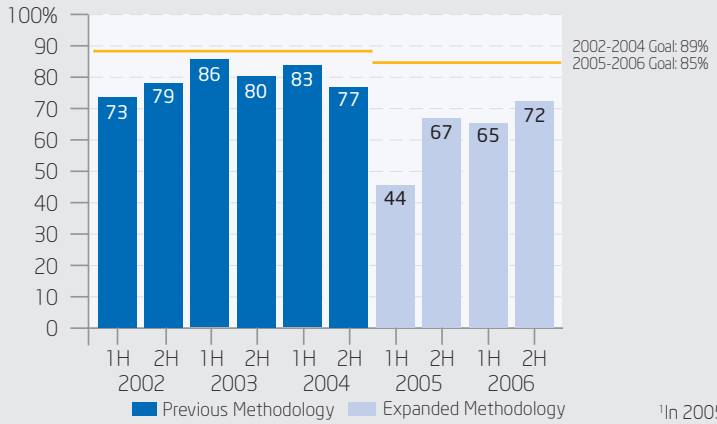
Visit www.intel.com/IT to read related content:

IT as a Strategic Business Partner

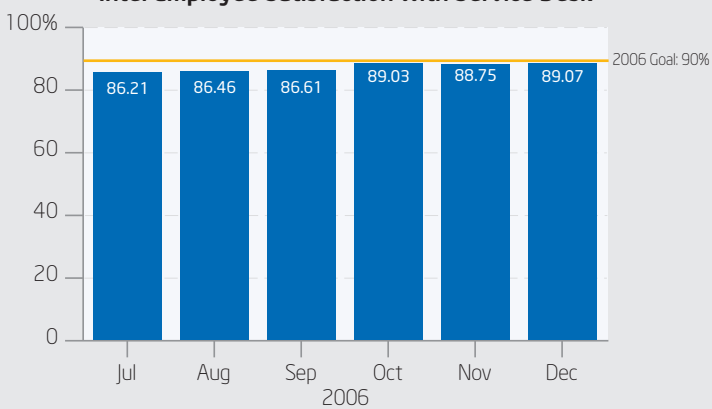
Gaining a Competitive Advantage Through User Experience Design

Key Customer Satisfaction Metrics

Intel Executives and VPs Who Consider IT a Strategic Partner[1]



Intel Employee Satisfaction with Service Desk



[1]In 2005, we changed our survey, expanding the definition and raising the standard of strategic partnership.

IT Spending

In 2006, we experienced increased demand for IT products and services across Intel at the same time as we were asked to cut IT headcount. We reduced our total headcount while continuing to deliver sustaining products and services and to introduce new programs into the environment.

Initially, we met the increased demand while maintaining a relatively flat spending and headcount budget. Then, in the middle of the calendar year, we were asked to make even greater cuts to our IT budget to align ourselves with Intel's overall financial direction.

To maintain consistent IT performance and delivery in this environment, we introduced several cost-saving initiatives to make sure we ended the year on our newly lowered budget. Those cost-saving initiatives included:

- Renegotiating contracts for peripherals and software, based on an overall lower Intel population base
- Introducing productivity improvement processes and programs into both the IT and Intel environments
- Consolidating service and data centers
- Better utilizing servers, networks, and resources as we standardize, virtualize, and consolidate our enterprise environment

In 2005, spending by the IT organization as a percentage of Intel revenue was 2.9 percent. However, when we factored in IT spending by other Intel groups, it came to 4.9 percent. In 2006, that percentage was 4.6.

In 2007, we plan to bring all IT spending within the IT organization and under the control of the CIO. In addition, we'll put into place a strategy to reduce overall IT spending by an additional 1 percent.

We expect to face another year of declining budget in 2007 while being asked to absorb growth in our WAN, LAN, and audio conferencing costs. This reflects the increasing geographic footprint for Intel's sales, design, manufacturing, and engineering communities.

Mohammad Ali, senior network specialist

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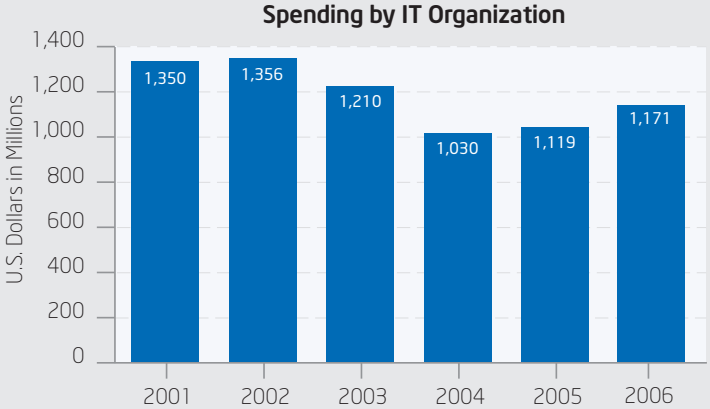
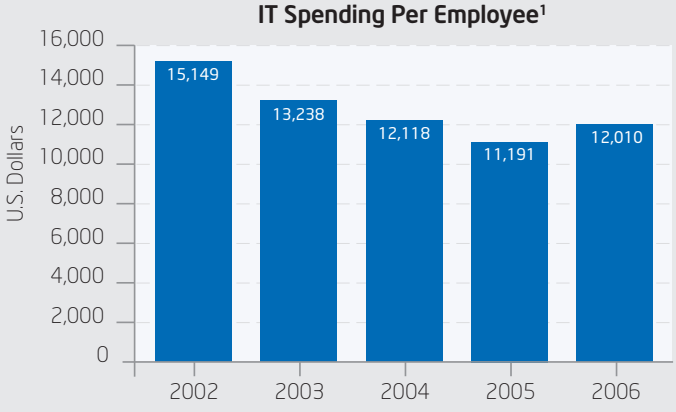
Spending by IT Organization



IT Spending Per Employee[1]



[1]2006 spending based on 97,500 workers

Hassan Salimi, network administrator

Managing Information Risk

For a company like Intel, which runs on information and data, employees can be the best security or the greatest risk. Through required training courses, a secure portal on Intel's intranet, and company-wide communications, we helped Intel's workforce become security aware at work, at home, and while traveling.

In 2006, we emphasized personal behavior and accountability. We continued to focus on data and infrastructure protection. We matured our incident response capabilities and compliance with appropriate laws, regulations, and policies (including Sarbanes-Oxley attestation).

Our priorities in 2007 will be to keep Intel legal, ensure the availability of critical information, apply the proper level of protection to Intel information assets, and assist the corporation in accepting the appropriate level of risk.

CAPABILITY	GOAL	RESULTS
Compliance Auditing and Controls	▪ Ensure compliance with regulatory requirements and manage acceptable risk for critical aspects of our business.	▪ Ensured that testing and sign-offs occurred for 2006 compliance to Section 404 of the Sarbanes-Oxley Act. ▪ Expanded risk assessments across major IT projects. ▪ Expanded engagements with host governments and industry partners to influence emerging information security and privacy laws.
Data Privacy	▪ Establish database inventory and registration program.	▪ Developed and implemented a database inventory process for databases containing personal data. ▪ Implemented a process for registering prioritized databases.
New Product Development and Validation	▪ Use Intel's security expertise to influence product roadmaps and offerings.	▪ Completed security risk assessments on various product lines, resulting in design change requests for two products, changes in product line plans, and resource redirection. ▪ Established process to engage in the planning phase of products, enabling us to influence security features.
Data Protection	▪ Develop and deploy usable and integrated data protection solutions.	▪ Developed enterprise data protection requirements and capability. ▪ Improved usability of encryption tools and services. ▪ Rolled out encryption to targeted high-risk groups. ▪ Drove data protection requirements in multiple divestitures. ▪ Reduced risk in the hard disk disposal process. ▪ Completed controlled technology compliance review at Intel sites in China and New Mexico. ▪ Implemented a secure outsourcing program.
Emergency Response Management	▪ Manage Intel IT infrastructure, systems, and applications-related crises with no material impacts.	▪ Significantly reduced the duration of cyber and non-cyber events, compared to 2005.
Secure Infrastructure	▪ Ensure a clean-room cyber environment where automated administration maintains an acceptable level of security.	▪ Delivered platform vulnerability scanning capability to enhance vulnerability management. ▪ Initiated next-generation patch management. ▪ Delivered a new integrated security protection capability for clients. ▪ Established a standardized framework for rapid deployment of secure internally protected networks.

Moving Intel IT Forward

In evaluating our business process, we identified projects to move us toward the next generation of IT. We reorganized. We began simplifying our application architecture and consolidating our infrastructure. To sustain these changes and prepare for 2007, we looked at how we do our work, our IT governance model, how we invest, and how to improve our cost efficiency and business enablement.

Patrick McGaughy, server landing manager

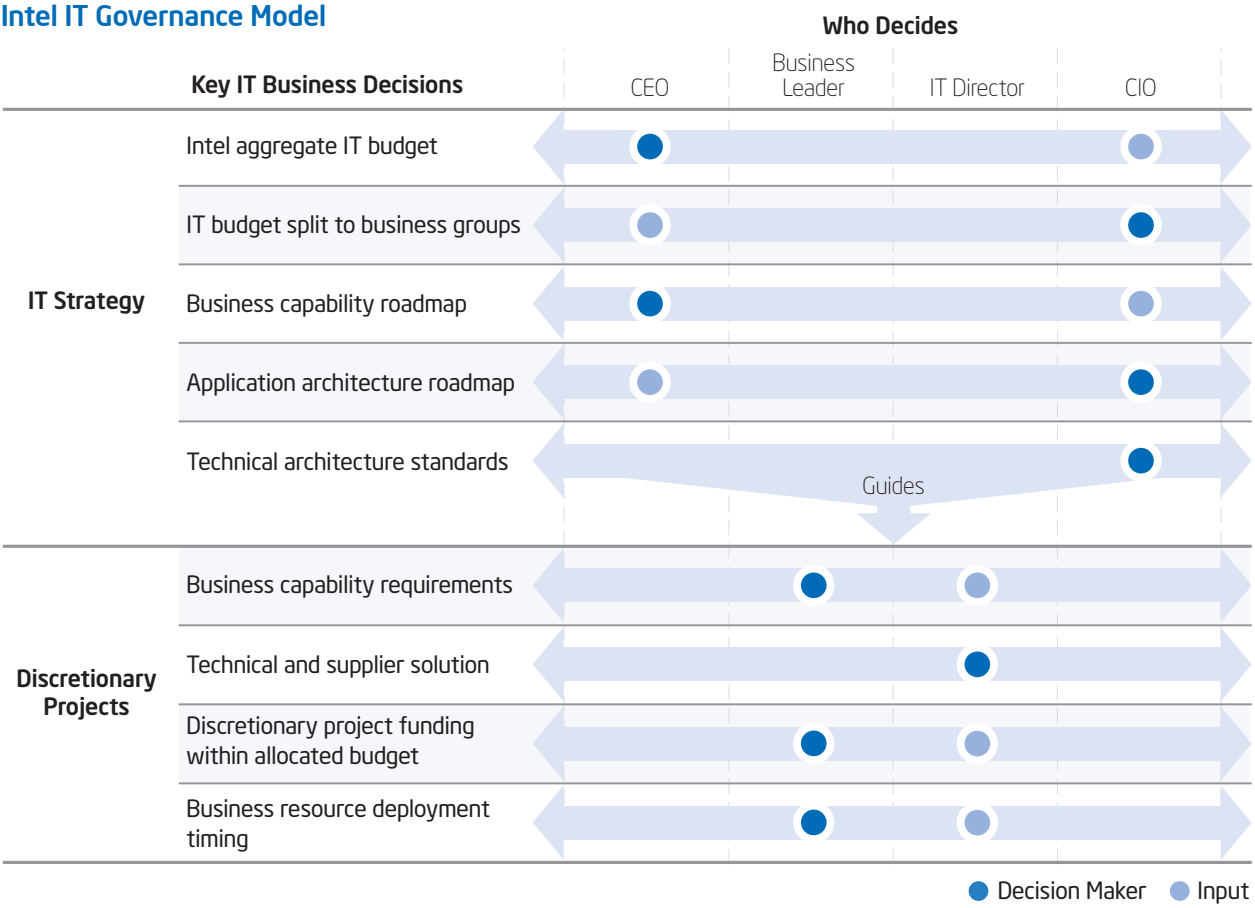
What's Different for Intel IT?

One of the biggest changes we made in 2006 was to position Intel's chief executive officer (CEO) as our customer, instead of individual business units. This change, part of our new IT governance model, helps us to make decisions and investments that will positively impact Intel as a whole.

To deliver IT capabilities more efficiently in 2007, we'll simplify the way Intel's business groups work with IT. We plan to further reduce workflow complexity. To clarify decision making, each project will have a single review body and stricter criteria for approval. We'll improve project delivery by breaking large projects into smaller ones that can be completed more quickly. We expect that these changes will create efficiencies, freeing up resources for investment in new capabilities.

In Q4 2006, we set up our new organizational structure and model for doing business with Intel's business groups. We'll continue retooling through early 2007 and move forward as a stronger, more agile, and effective organization.

Intel IT Governance Model



L to R: Lisa Spalitta, senior administrative assistant; Ken Deng, business planner; and Sari Ashe, administrative assistant

three
GREAT PLACE TO WORK

72%
Training and Career Development Participation (Goal: 70%)

90%
IT Employee Satisfaction with Training Programs (Goal: 80%)

89%
IT Employee Satisfaction with Managers' Communication (Goal: 85%)

2006 STRATEGIC OBJECTIVE THREE

Supporting Agile, High-Performing Global Teams

With a workforce of more than 95,000 who depend on the products and services IT provides, we rely on the talent and skills of our IT employees. In 2006, we broadened training delivery worldwide for our more than 6,000 IT employees. While streamlining IT, we continued to focus on developing technical and leadership capabilities. IT exited the year a more agile and focused organization.

Training

Our focus on enriching employee careers through development and training is helping IT become a competitive capability for Intel.

We offer a global career development program that provides the commitment and processes for skills training and career development to more than 6,000 IT employees worldwide. The competency and skills-based framework gives employees and managers clear job expectations, skills evaluations, and skill development through technical and IT business training.

By aligning to IT priorities, this program enables a flexible and nimble workforce. It effectively delivers training to our employees at lower cost than the industry standard.

Volunteer Instruction

Volunteer instructors play an important role in shaping Intel IT's culture of continuous learning.

Instructors are highly valued and recognized for educating the IT workforce. They share their knowledge and skills with IT employees to help our workforce achieve higher levels of skill. In 2006, more than 400 IT volunteer instructors taught 75 percent of our training classes—more than 8,100 hours—at 35 IT sites in 16 countries.

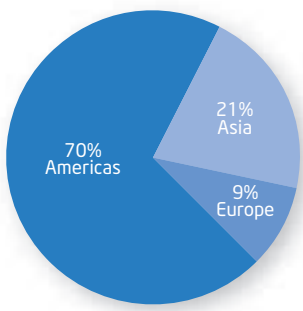
"Being a volunteer instructor gives me an opportunity to share my knowledge and meet new people across Intel sites. It is a wonderful experience and helps me to continue to grow," said Aziz Bandeli, senior systems analyst.

Career Opportunities

We expanded our technical leadership development program by increasing opportunities for IT employees to follow a technical career path. We introduced new senior technical career options. We offered technical leadership development in mentoring, networking, and education, with more than 400 IT technical contributors participating.

Intel acknowledges its top technology leaders with the job classification of Intel Principal Engineer. As of 2006, IT has 12 Principal Engineers, a 33 percent increase over 2005.

IT Technical Mentoring Program Mentors by Region



IT Employees Become Intel Principal Engineers

A large part of Intel's success rests on the shoulders of its technologists. As part of its technical career path, Intel awards the Principal Engineer designation to senior technical contributors who exercise technical leadership in areas vital to Intel and the industry, and act as role models and mentors for less senior engineers. Principal Engineers influence Intel and the industry through their innovative research and solutions, publications, participation in industry and academic conferences and committees, and awards. They work in a positive and creative ways to overcome obstacles, rise to new challenges, and advance technology.

Fifty-five IT employees are on a career path working toward achieving Intel Principal Engineer candidacy.

L to R: Shaji Achuthan, senior software engineer; Principal Engineers Vipul Lal, Shesha Krishnapura, and Ty Tang

CAPABILITY	GOAL	RESULTS
Enabling Technical Leadership and Supporting Diversity		
Career Navigation Framework	▪ Grow employee skills by providing a global training and career development framework.	▪ Delivered instructor-led training to 10,000+ employees and online training to 4,700+ employees. ▪ 400+ IT employees taught 75% of the sessions delivered in 2006. ▪ Framework applies to 95% of IT employees (up from 85% in 2005).
Critical Skills Certification Program	▪ Identify and address critical skills needs and enable employees to gain the knowledge necessary to close critical skill gaps.	▪ Deployed 9 certification programs. ▪ Moved 2 certifications into sustaining while launching 2 new certifications. ▪ 53% increase in the number of certified IT employees.
Technical Leadership Development	▪ Accelerate the development of technical contributors' competence, expertise, and influencing and leadership skills through technical mentoring, networking, education, and the availability of new senior technical jobs and career paths.	▪ 89% increase in IT technical candidates who received active coaching. ▪ 43% of technical leaders in IT volunteered to be mentors. ▪ Deployed 75 technical leadership classes; trained 400 employees.
Diversity	▪ Model an inclusive and diverse work environment.	▪ Strategic hiring program increased diverse hire representation. ▪ Conducted worldwide cultural awareness diversity training. ▪ Provided mentoring opportunities to our employees.
Strengthening Manager and Leadership Capabilities and Managing Change		
Managing for Excellence	▪ Establish clear, separate, leader and manager expectations. ▪ Deploy new manager tools to simplify the performance management process.	▪ Completed separate baseline measurements for managers and leaders. ▪ Provided new manager tools and simplified the performance management process.
Leadership Development	▪ Provide leadership training.	▪ Delivered 4 personal leadership workshops to 83 managers. ▪ Approved and deployed action learning workshop.
Performance Review Process Pilot	▪ Increase manager empowerment. ▪ Streamline the performance review process while maintaining its integrity. ▪ Reduce the amount of time managers spend on reviews.	▪ 79% of managers felt empowered to make decisions about employee performance. ▪ 82% of managers want the process repeated next year. ▪ 80% of managers believed the pilot simplified the process. ▪ Managers saved 3.7 hours per employee, on average.
Transition Change Management (TCM)	▪ Accelerate IT streamlining through integrated TCM tools.	▪ Made TCM tools available to all managers and employees, per department roadmaps. ▪ Provisioned manager guidelines, resource packages for next phase.

2007 FUTURE PLANS

Julie Rice, PC logistics

2007 Strategic Objectives

- Be an agile, high performing organization.
- Deliver a standardized, cost effective computing environment that keeps Intel running.
- Influence and deliver solutions that create bottom line improvements for Intel.

Plans for 2007

2007 will be a very exciting year for our organization. We have a significant opportunity to help transform Intel into a leaner, more efficient and flexible company.

Priorities for the Coming Year

Our top IT priority is to accomplish the second-year goals of our ERP replatforming effort. It is imperative that we work closely with Intel's business units to successfully implement this multiyear program. We know we will face competing priorities and business needs at times; however, we must maintain focus on the ERP transformation goals throughout the year.

Now that we have a new IT management structure in place, we must fine-tune it to reach a steady state throughout the organization as quickly as possible. We are adopting CMMI for an increasing number of projects and programs and we must ensure a rapid and pragmatic transition in those areas embracing CMMI for the first time.

We have completely revamped our IT governance model for decision making and accountability. Ensuring that our IT employees and business groups understand the new processes is critical. We must make this model work and work well.

On the operations side, we will focus on two parallel efforts:

- We must continue to keep Intel running worldwide. We will carefully manage our infrastructure to ensure seamless operations across our manufacturing facilities, design centers, and other operations.
- We will carry out critical programs expected to deliver cost reductions needed to stay within our spending target. At the foundation of our streamlined operation are the successful implementation of our service desk integration program, our data center virtualization and data center consolidation programs, and our application end-of-life program.

We will start a major PC refresh effort in 2007. With this refresh, we will introduce an integrated client platform that includes the latest Intel® mobile platform combined with a new operating system, virtual machine, office suite, and browser. The client platform will also include new manageability, connectivity, and security capabilities. This will be our biggest refresh effort in 10 years and it will give our employees a new level of PC capability.

John "JJ" Johnson, Intel CIO, explains: "In 2006, we took actions that transformed IT. In 2007, we will leverage those actions to transform how Intel does business."

We are committed to helping transform Intel, while at the same time reaching a new level of IT performance. We are excited about our prospects for 2007 and look forward to the challenges ahead.

IT Flex Services Makes an Impact Worldwide

When the Intel Customer Support (ICS) Web site received an award for being one of the ten best international Web support sites by the Localization Industry Standards Association and the Association of Support Professionals, it was due in no small part to the work of IT Flex Services. As part of their language pilot project, ICS contacted IT Flex Services to localize key documents into 10 different languages. About 750 of the 24,000 documents on the ICS site need updating each week, and the site grows by about 500 documents a month. "It was a unique, synergistic partnership between ICS, as the customer, and the IT Flex Services team," said Lew Tarnopol, ICS program manager, praising the IT Flex Services localization team.

Localizing the Web site reduced traffic to Intel's Customer Support Service Center. It also directly impacts sales, as customers can get the information they need in their own languages. It's part of being a truly global company.

Christina Montgomery, system administrator

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