IT@Intel Brief

Intel Information Technology
Business Solutions
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Business Continuity and Disaster Recovery with Mobile Business PCs

- About 7,500 Intel employees have experienced a disruptive event and remained productive on their mobile business PCs.
- Employees can work from any location with full computing capabilities.
- When disasters occur, employees can focus on operational changes because they do not need to learn new technologies to stay productive.

Intel IT has found that mobile business PCs have been crucial to enabling business continuity during a variety of disaster situations.

We have standardized on a mobile business PC solution for Intel's highly mobile workforce because they enable employees to work productively, with full computing capabilities, from any location. To further support remote collaboration, we also use tools such as Voice over IP (VoIP)-based videoconferencing and unified messaging.

We have found that these technologies also enable employees to continue working effectively during disasters that impact individual locations or entire regions, as summarized in Table 1.

- Using laptops, employees have telecommuted when flooding or snowstorms made it impossible to access their offices.
- During regional disasters, employees stranded by travel restrictions have been able to work from any location.
- At locations suffering brief or unexpected power outages, laptops enable employees to continue working unaffected, using battery power.

Overall, we estimate that about 7,500 of Intel's 80,000 employees have experienced disruptive events in which their mobile business PCs played an essential role in enabling them to continue working productively.

Intel has also provided laptops for humanitarian relief efforts following natural disasters that destroyed infrastructure, such as the 2010 Haiti earthquake. Mobile PCs and wireless communications provided immediately available technology infrastructure that assisted relief workers and victims.

Table 1. Examples of How Mobile Business PCs Help in Disaster Situations

Intel facility unusable due to flooding caused by burst water pipe.	▪ 450 employees worked from on-site locations such as travelers' workstations, conference rooms, and lunch rooms, or telecommuted effectively for up to two months during renovations.
Snowstorm causes dangerous road conditions, preventing access to multiple Intel facilities.	▪ 5,000 employees telecommuted for three days.
SARS outbreak forces closure of Intel office and interrupts travel to some Asian countries.	▪ Employees telecommuted, and stranded employees were able to work from any location.
Intel facility in India suffers frequent brief power outages.	▪ Employees remain productive because mobile business PCs continue running unaffected, using their own battery power.

Background

Intel is a global company, with approximately 80,000 employees in 63 countries and regions. Employees are highly mobile, and Intel IT has deployed a variety of technologies that help them work productively from home or while on the road—including mobile business PCs and a broad set of communication and collaboration technologies.

We have repeatedly found that these technologies have also been crucial to enabling business continuity during disaster situations. Using mobile business PCs, employees have continued to work effectively during major events impacting Intel facilities or entire geographic regions, as well as during smaller disruptions such as power outages.

Laptops donated by Intel have also provided similar benefits to relief organizations and individuals to aid recovery after major natural disasters.

MOBILE BUSINESS PCS

Intel IT has standardized on mobile business PCs, and they are currently used by more than 80 percent of our employees. We are deploying PCs with 2010 Intel® Core™ vPro™ processors, which offer the performance, manageability, flexibility, and security that Intel's employees and Intel IT require.

Mobile business PCs provide employees with full computing capabilities when they are out of the office. They provide the performance required for resource-intensive multimedia applications such as VoIP-based videoconferencing and for data analysis. They support multiple wireless broadband technologies, including Wi-Fi*, cellular networks, and WiMAX*, providing more flexibility to take advantage of whichever networks are available in different locations. PCs also have large local data storage, so employees have access to their data even when they are offline; we have begun deploying PCs with solid-state drives, which increase performance and have lower failure rates than hard drives.

Using laptops, employees can perform activities that are not feasible on smaller handheld devices. For example, they can create and store complex content such as large spreadsheets and presentations.

Mobile business PCs offer additional flexibility because they support all current and emerging computing models, including locally installed, Web-based, and streamed applications. For example, we are evaluating the use of virtualized client and application environments downloaded to laptops, an approach that may increase manageability and security without sacrificing mobility.

To keep our applications and hardware up to date, we refresh mobile PCs every two to four years based on user segmentation; this also helps reduce support costs, as the average age of an Intel employee laptop is less than 24 months. This is a key element in our approach to managing PCs as strategic assets, which has enabled us to reduce TCO by 67 percent over 11 years. We are using Intel® vPro™ technology—a set of manageability, security, and power management capabilities in 2010 Intel Core vPro processor family-based PCs—to increase remote manageability and further reduce TCO.

UNIFIED COMMUNICATIONS AND COLLABORATION TECHNOLOGIES

We have deployed a range of communications and collaboration technologies, that, in conjunction with mobile business PCs and wireless networks, enable employees to be productive anywhere.

- Use of VoIP-based videoconferencing has grown rapidly across Intel, enabling employees to participate in meetings remotely. In 2009, this saved more than 43,000 travel hours and avoided USD 14 million in travel costs.
- Unified messaging has improved productivity, while saving more than USD 1 million by replacing legacy voicemail systems. Employees use their PCs for all messaging, including voicemail, and they can easily access their messages from home or while on the road.

We also use a variety of other technologies that support mobile productivity, including Webcasts and an enterprise portal that provides access to the Intel intranet and enterprise applications. Selected technologies are described in Table 2.

Table 2. Selected Technologies that Help Enable Business Continuity at Intel

Mobile business PCs	Local execution for good performance, including graphics-intensive applications such as Voice over IP (VoIP)-based videoconferencing
Unified messaging	Employees' PCs are used for all messaging, including voicemail; employees can easily access their messages from work, home, or while on the road
Videoconferencing	Multiple uses, including allowing employees to attend meetings remotely using VoIP
Enterprise portal	Enterprise applications and intranet are available wherever employees have network access

Enabling Business Continuity

We have found that the technologies that support everyday mobile productivity also enable business continuity during disasters that impact Intel facilities and employees.

MAJOR EVENTS AFFECTING INTEL EMPLOYEES AND FACILITIES

Using mobile business PCs, Intel's employees have remained productive during disasters that impacted facilities and destroyed infrastructure, and during smaller disruptions such as frequent power outages.

Disasters affecting local facilities

Employees have been able to continue working during events that rendered individual Intel facilities unusable or forced employees to stay home.

When a water pipe burst at one location, 7,000 gallons of water flooded and destroyed about 80,000 square feet of office space. Yet because the flood occurred after hours, most employees had already taken their laptops home and were able to work unaffected.

The flood required significant renovations over a two-month period, displacing up to 450 employees. These employees were able to telecommute, and as the renovation progressed, they could work from any location that became usable within the facility, such as travelers' workstations, conference rooms, and lunch rooms.

In another example, when a major regional snowstorm made roads dangerous or impassable and resulted in the closure of several facilities, 5,000 employees remained productive by telecommuting.

Disasters Affecting Business Travel

In recent years, several natural disasters have caused major disruptions to business travel. Because Intel employees use mobile business PCs, together with technologies such as videoconferencing, canceled travel has not affected employees' ability to be productive. Employees continue to work from wherever they are and attend meetings remotely.

In April 2003, the SARS epidemic severely restricted travel in Asia, with several countries imposing quarantines. By using laptops and wireless connections, our employees remained productive whether they were stranded during their travels or working from home.

Mobile business PCs have been similarly helpful in other situations that caused travel disruptions. Following the May 2009 swine flu outbreak in Mexico, business travel to that country was discouraged or canceled in accordance with U.S. government recommendations; and this year, the eruption of a volcano in Iceland caused massive disruption to U.S. and European air travel.

SHORT-TERM FACILITY POWER LOSSES

In some countries, unexpected power outages or partial power losses are common and represent constant threats to business continuity.

In India, growing demand for electrical power frequently outstrips the available supply. This has caused daily power losses at one Intel facility. Employees with mobile business PCs are able to work unaffected at the facility during these outages because their PCs continue to run using their battery power. An additional advantage is that laptops consume less power than desktops, which helps organizations meet their goals of reducing overall power consumption.

Regional outages also occur, though less frequently, in countries including the United States, China, Malaysia, and the Philippines. During one regional outage, several U.S. Intel field sales offices lost power, however field sales engineers continued to work using mobile business PCs with no disruption to customer communication.

Using Mobile Technologies for Humanitarian Aid

The devastating effects of natural disasters are exacerbated by the fact that they often leave affected regions almost entirely without infrastructure. This hampers relief efforts and makes it hard for victims to communicate and find help.

In these disasters, mobile business PCs and wireless communications can rapidly create technology infrastructure that can be used by both victims and relief workers. Intel and its employees have provided thousands of mobile business PCs, communications technologies, and expertise to aid recovery from several major disasters.

HURRICANE KATRINA

Following the massive flooding caused by Hurricane Katrina in 2005, Intel worked with technology partners to donate thousands of mobile PCs as well as wireless communications technology. This provided IT infrastructure that was used by thousands of victims and relief workers.

Intel coordinated the donation of more than 2,300 laptops for use in Red Cross shelters, donated 150 wireless Internet access points to enable wireless connectivity in priority relief center locations, and helped to establish WiMAX and wireless mesh networking connectivity.

These technologies enabled thousands of hurricane victims to communicate with relatives and contact social services. In Houston, Texas, volunteers using donated laptops helped 12,000 people fill in case forms, and 3,000 families used laptops to find permanent shelter within 24 hours.

In addition, Intel helped establish mobile clinics where medical teams were able to use laptop PCs with cellular mobile connectivity to access centralized records management, pharmaceutical, and patient tracking systems.

HAITI EARTHQUAKE

Following this devastating earthquake near Haiti's capital in February 2010, Intel donated hundreds of laptops and other hardware, as well as IT expertise, to assist operations by relief organizations and Haiti government agencies. The laptops included Intel-powered classmate PCs, based on Intel® Atom™ processors, which are rugged and have low power consumption—useful characteristics in a disaster scenario.

INDIAN OCEAN TSUNAMI

In response to the 2004 Indian Ocean tsunami, Intel assembled a team, including Intel IT experts and wireless platform specialists, that created a wireless broadband network in Banda Aceh, Indonesia. The WiMAX-based network provided a centralized communications infrastructure enabling more than 50 relief organizations to synchronize relief efforts, manage distribution of food and medical supplies, and maintain lists of missing people.

Summary

Mobile business PCs facilitate productivity in a wide variety of situations—ranging from large-scale natural disasters to smaller disruptions such as illness. Mobile business PCs enable individuals and organizations to continue being productive and respond to crisis without significant disruption to the business.

When a crisis occurs, employees can focus all their efforts on the operational changes required during a disaster since they work with mobile technologies every day and do not have to learn how to use new technologies.

Overall, we estimate that about 7,500 Intel employees have experienced significant events in which their mobile business PCs played an essential role in enabling them to continue working productively.

Mobile business PCs provided by Intel, together with other communications technologies, aid recovery from natural disasters by providing similar benefits to relief organizations and individuals.

For More Information

Discover additional IT@Intel white papers and briefs on related topics.

- "Increasing Productivity with Mobile PCs" http://download.intel.com/it/pdf/Increasing_Productivity_with_Mobile_PCs.pdf
- "Transitioning to Unified Messaging from Legacy Voicemail Systems" http://download.intel.com/it/pdf/Transitioning_to_UM_from_Legacy_VM_Systems.pdf
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