

WHITE PAPER

Virtual Collaboration with HP End-User Workplace Solutions

Sponsored by: HP

Mark Levitt

Stephen D. Drake

September 2006

IDC OPINION

In a global economy with rapidly vanishing borders, new requirements for knowledge sharing, virtual interactions, telecommuting, communications, and business workflows are driving organizations to re-evaluate their IT infrastructures and business processes. Organizations are responding to new requirements for knowledge-based workers to collaborate in virtual teams or workplaces across geographic, time, and organizational boundaries with flexibility and adaptability, and to access skills, expertise, and information remotely or on demand.

IT plays an indispensable role in this transformation. Organizations need the technology components and services that will offer individuals and teams secure, reliable, and consistent access to information, applications and people, regardless of time or location.

The need to accommodate such variability in today's workplace arrangements and operations models calls for a holistic approach to planning, selecting, deploying, and managing workplace solutions. Ultimately, organizations will need a comprehensive portfolio of end user-focused IT solutions and support services to help workers do their jobs smarter, better, and faster, wherever they may be.

SITUATION OVERVIEW

Changes and Challenges in the 21st Century Workplace

Enterprises are always seeking higher levels of productivity, economic efficiencies, and profits. New technologies mushroomed over the last two decades to reflect and to answer these business needs; in the process, they empowered individual workers to become more efficient and productive via personal productivity tools, and through faster, more reliable, and more pervasive network connectivity for applications and information access.

At the same time, however, these new technologies ushered in new work patterns, business behaviors, and operational needs, such as:

- ☒ The drive to maintain flexible, decentralized/virtualized operations without ceding control or losing coordination
- ☒ Market expectations for rapid integration and assimilation after mergers and acquisitions
- ☒ Customers' demands for "high-touch" and higher-quality sales and services
- ☒ Social push for improved balance between professional and personal lives and the disappearance of clear demarcations between the two
- ☒ Economic pressures to reduce capital and operational overhead, so that shareholder value can be maximized

Other changing behaviors in the workplace are compounding the challenges. The market is seeing a rapidly increasing proportion of workers who are mobile while on the job. IDC forecasts that the mobile worker population in the United States alone will reach 114 million in 2009, up from 98 million in 2004. Included in the mobile worker population are office mobile workers (mobile frequently, occasionally, and at one location), non-office mobile workers (mobile in the field and at one non-office location), and telecommuters (at least 3 days a month). The rising mobility of the workforce means that whether workers are in the office, at a customer site, at home, or traveling in between, they need secure and reliable access to information and business applications.

In addition, workers are no longer staying in the same positions, companies, or even geographic locations for long. When those who generate best practices, efficiencies, and new skills are constantly on the move or working remotely, companies struggle to capture and maintain developed knowledge and competencies. The lack of mechanisms to manage institutional knowledge, and the resulting repetitions and duplications of processes and resources, can potentially constitute a significant liability and competitive disadvantage that companies can scarcely afford.

To compete effectively while supporting virtual/remote work practices, companies are faced with instituting more sophisticated and complicated business processes: Field agents have to be managed as customers ask for new interaction and service channels. Back-office workers in locations outside of headquarters need to integrate their work with those in central offices. Suppliers and partners from afar demand more efficient and more direct connections to the supply chain.

A fundamental theme emerged over the last five years in response to these challenges: Organizations are increasingly realizing that they need to find ways to significantly enhance virtual collaboration in the workplace. Collaboration can be a powerful solution for enterprises to:

- ☒ Replicate gains in knowledge and best practices beyond the individual
- ☒ Disseminate gains in productivity regardless of location
- ☒ Maintain control, coordination, and consistency in the face of a highly mobile workforce
- ☒ Protect institutional knowledge from attritional forces
- ☒ Tackle increased complexities in end-to-end business processes

Information technology is on the frontlines of enabling enterprisewide virtual collaboration, but the challenge is not insignificant, as no single technology solution can provide an all-encompassing answer. To enable cross-pollination and sharing of knowledge, best practices, and processes across time zones, geographies, operational environments, and equipment platforms, a comprehensive and holistic technology framework for the end-user workplace is needed.

HP'S APPROACH TO ENABLE COLLABORATION IN THE WORKPLACE

Over the years, HP has steadily built a wide portfolio of business and technology solutions to meet different end-user needs. Therefore, when the above-mentioned collaboration trends and requirements became pronounced among its customer base of CxOs, line-of-business managers, and IT managers, HP began to harness its wide range of solutions, and developed a consolidated portfolio specifically for solving enterprises' virtual collaboration challenges.

HP's "integrated portfolio" approach serves another important purpose. Enterprises that desire truly productive virtual collaboration are faced with inherent complexities that stretch across IT disciplines — from the desktop to mobile devices, from servers to the network, from messaging tools to printing and imaging, and from initial implementation through maintenance. To achieve an integrated architecture that can successfully tie collaboration to core business processes and to reduce the associated IT complexities, costs, and support requirements, companies need solution providers, such as HP, that can bring a holistic approach to the task.

HP's End-User Workplace Solutions (EUWS) provide this holistic view through tools, technologies, infrastructure, and processes that support the end-user workplace environment. These solutions can include design and implementation services, technology support, outsourcing and underlying products and software, depending on customer requirements and sourcing preferences. By offering this integrated approach through five "solution towers," HP aims to improve productivity, simplify management, and reduce costs for the enterprise. At the high level, the five solutions can be segmented into two related categories.

The first category consists of business and technology solutions that directly facilitate virtual collaboration in the end-user workplace, as they offer new ways for employees to access corporate resources and other constituents while they are in the office, on the road, or scattered across different locations and time zones. They are:

- ☒ **Mobility and wireless solutions** for the deployment, management, and support of mobile devices and applications while providing secure access to corporate networks and information.
- ☒ **Messaging and collaboration solutions** for the design, migration, integration, and ongoing management of messaging and collaboration environment that enables workers to connect, communicate, and collaborate as part of virtual teams. Included are management of email, instant messaging, email security, archiving, shared team spaces, virtual conferencing, virtual classroom, and Halo collaboration solutions.

The second category of solutions offer foundational support for the enablement of virtual collaboration. While these solutions are not usually viewed exclusively as collaboration tools, they are required for end users to properly execute, capture, transmit, and preserve the fruits of collaboration. Furthermore, there are support services to resolve issues that may arise as employees pursue collaboration in their everyday work. These solutions consist of:

- ☒ **Desktop solutions** for the acquisition, management, support, maintenance, and eventual disposal of PCs, other end-user devices and desktop applications.
- ☒ **Imaging and printing solutions** for the optimization, support, and management of office and datacenter print infrastructure and workflows.
- ☒ **Service desk solutions** for a single point of contact to respond to and resolve end-user questions and problems. These include telephone support, remote support, and self-support through a personalized portal to solve problems before contacting the helpdesk.

Change management services assist customers in the adoption of eSupport and virtual collaboration technologies.

CUSTOMER CASE STUDIES FOR HP'S WORKPLACE SOLUTIONS

As mentioned above, macro- and microforces are driving organizations toward evaluation of existing processes and adoption of new workplace solutions. Given the scope of impact, a wide portfolio of technology solutions must be brought to bear to tackle the challenges of shifting business and operational practices, and more importantly, to comprehensively address the need for virtual collaboration in the workplace. In this following section, we profile several organizations that have chosen to take this holistic approach toward change and collaboration in the end-user environment. These HP customers share in common the effective and pervasive use of collaboration as the underlying solution to improve end-user productivity and to reinvigorate the way students or employees go about their everyday work.

State of Michigan

Freedom to Learn (FTL at www.ftlwireless.org) is a joint initiative between the state of Michigan's Department of Education and Ferris State University, aimed at improving education and engagement for underprivileged and underperforming students with the help of collaboration and mobility solutions. The program, in its third year, focuses on shifting the learning environment from teacher-centered to student-centered, so that students can have more ownership over their own learning, while teachers can find new ways to monitor students' progress and to provide them with the attention they need.

In everyday practice, FTL wanted better ways to deliver classes and learning resources remotely and individually to students. Program administrators also wanted to enable access to additional information and assignments over the campus network or through students' home Internet connections. To enable this new kind of learning environment from a technological standpoint, FTL needed a single solution provider that would be able to bring not only hardware and software, but also planning, design, and implementation resources.

FTL decided on HP as its provider and partner for this initiative. HP provided wireless networks, WiFi-enabled laptops, support services, and virtual classroom services based on Microsoft Class Servers (MCS) — all solutions that are focused on increasing knowledge sharing and collaboration in and out of the classrooms. HP also brought the planning and implementation expertise to help realize FTL's vision for educational access and collaboration.

As of last count, HP has provided WiFi-enabled laptops on an individual basis to students and teachers at 200 public and private school campuses across 100 school districts. Enabled with these workplace solutions, both students and teachers can benefit from improved efficiency and ease of collaboration in the learning environment. Students now use their laptops to view, complete, and submit assignments. Productivity has improved as students now enjoy anytime, anywhere access to their assignments via the Web and HP's virtual classroom services based on MCS. Further exchange of ideas and collaboration are facilitated when students

use the technology to team with their peers and to share information with teachers. At the same time, teachers are empowered with new tools that allow them to provide increased individual attention to students, as they can now monitor and send questions in real time to each student's laptop, and can broadcast information for other students to see.

In the first two years of the FTL program, the State of Michigan has seen the following benefits:

- Improved student engagement due in part to increased parental involvement, and improved collaboration due to the ease of sharing assignments and information
- Improved student performance on standardized tests
- Rise in student attendance and drop in disciplinary problems
- Re-invigoration of teachers who have become learners/students of technology themselves; who now feel that they and their students are better prepared for 21st century jobs
- Bridging of the digital divide, since many schools — including those from high poverty areas in Michigan — can now enjoy comparable levels of access to technology and information

United States Postal Service (USPS)

USPS operates on a business model that is predicated on high transaction volumes but relatively low margins per transaction. To maximize revenues and profits, operational efficiency and cost reduction are paramount.

However, to achieve the desired business results, USPS needed to harness maximum productivity from a highly mobile workforce. Dispatched carriers are not the only ones who are on the road constantly; the organization's officer corps, executive managers, and senior staff frequently work outside of their main offices, and they require reliable and consistent ways to stay in touch with their teams.

These senior USPS managers have long relied on electronic mail to facilitate business communications while working from remote locations. Today, USPS has 175,000 email users and 2.3 billion emails delivered each year. As workforce mobility trends upward and as mobile technologies mature, USPS is seeing increased usage of mobile devices to manage remote communications and collaboration. Over the last three years, USPS equipped 6,000 managers and senior staff with Research In Motion (RIM) Blackberry devices, and installed 17 Blackberry Enterprise Servers (BES) to service these devices. Through the mobile devices, USPS executives on the road are staying connected to their workplace and facilitating remote collaboration with their teams.

At the start of the program the Blackberry devices and servers were purchased and set up through HP's managed services offering, which include tier 2 remote systems management and support. HP also assisted in configuring servers and training when USPS took on these new devices.

In addition, leveraging the mobile infrastructure that HP put into place, USPS has also deployed three primary mobile applications, all of which are browser-based, for authorizing external funding and requisition activities, managing security and clearance, and submitting and approving travel expenses. Web-enabling these processes and making them available through mobile channels have greatly enhanced the organization's ability to facilitate virtual execution of business processes and to eliminate productivity loss while the senior managers are offsite.

There is another mobile application that supports the Postal Emergency Management System, which is now capable of sending a single message to a large number of users across multiple communications options, including mobile channels such as SMS, or to other offsite locations such as the workers' homes. Last but not least, HP is providing remote server management of all USPS servers, including Microsoft Exchange Servers for collaboration.

From both a mobile and non-mobile perspective, HP has enabled USPS to build, manage, and support a comprehensive virtual collaboration infrastructure that increases employees' productivity.

International Rice Research Institute (IRRI)

The IRRI's driving vision is to eliminate poverty, improve food security, and protect the environment by increasing food productivity. Similar to the other profiled organizations, IRRI recognizes that it must provide its researchers with reliable and cost-effective IT solutions and support, so that they can focus on researching new rice varieties and disseminating information about the latest scientific advances in rice production.

However, a significant hurdle stood in the way. IRRI, being a non-profit organization, had limited IT resources to facilitate technology use and efficiencies amongst more than 1,000 employees, as it generally employed only four to six IT staff members. The organization did a study previously and discovered that IT human resources were, on average, 56% below needed capacity.

The lack of IT manpower presented a serious challenge for IRRI. The Institute needed to supply field researchers with laptops and research workstations for work in rice growing areas throughout 12 Asian countries. It also had to support a number of affiliated institutes, training schools, and residential complexes for researchers, which all came with different computing requirements and in multiple languages. When the IT team was stretched beyond its capacity, they found it extremely difficult to keep pace with technology trouble-shooting, maintenance, and refresh cycles. In turn, field scientists had to contend with suboptimal technologies for long periods of time while attempting to conduct cutting-edge work. This technology lag also hampered the researchers' ability to share their work and to collaborate effectively across IRRI's vast coverage areas in Asia.

IRRI turned to HP, which realized that in order for IRRI workers to perform and collaborate more effectively, the Institute needed a comprehensive workplace solutions management program. The first order of business was to help IRRI carry out its intended technology refresh. Providing IRRI with a quick refresh of desktop, printing, and imaging solutions would maximize productivity, and delivering the requisite help desk services would allow the core IRRI IT team to focus on more strategic planning and deployment of research collaboration technologies. IRRI also opted to have HP take over the overall servicing and management of the solutions on an outsourced basis.

As of today, HP has converted over 90% of IRRI's desktops to new machines, with the remainder slated for completion by the end of 2006. IRRI has also been able to consolidate and reduce the number of desktop/laptop configurations within its ranks, which significantly reduces maintenance and support complexities. The help desk now fields hundreds of calls each week, and resolves over 80% of reported incidents within 24 hours. Faster turnaround in deployment and support of applications also contribute to higher levels of employee productivity, as unplanned downtime has decreased.

More importantly, by offloading routine maintenance, refresh, and help desk work to HP, IRRI's IT staff can now turn their attention to more strategic initiatives. With HP's assistance, IRRI has also begun to consider another strategic plan to provide field researchers with mobile devices to further improve mobility and collaboration.

HP

In promoting its virtual collaboration solutions, HP has been able to draw on its own workplace collaboration experiences. A 2005 study and survey of HP employees confirmed the degree to which its global workforce was distributed. The survey revealed that:

- 17% of the responding employees indicated that they spent a majority of their time working from home.
- 42% spent a majority of their time at an HP campus office.
- 39% of the respondents were colocated with their teammates with whom they worked regularly.
- One-third of respondents said they were in the same location as a majority of their managers and supervisors.

To further add to the complexity of trying to foster collaboration and teamwork:

- ☒ More than two-thirds of the respondents regularly worked with customers and business partners located outside of their geographic location.
- ☒ 22% conducted a majority of their meetings face to face. A sizable 37% of the respondents conducted less than 10% of their meetings face to face.
- ☒ 43% of respondents worked with more colleagues in different time zones than in the same time zone.

A significant portion of HP's business value lies in the knowledge and ideas generated among its teams. The productivity and quality of these teams would suffer if there is no sustained and centralized effort to encourage dialogue, communication, and collaboration among a highly mobile workforce. To ensure that all employees within this large company, regardless of location, were working in close coordination with each other, and to avoid duplication of resources and responsibilities, HP leveraged solutions that would foster collaboration regardless of physical location.

HP decided to deploy a wide portfolio of collaboration solutions to make sure that productivity and collaboration gains can be maximized, and that the programs can accommodate the wide range of workplace environments of its global workers. The programs and solutions that HP undertook to tackle these challenges included:

- ☒ Shared team space solutions help workers manage documents more efficiently, coordinate revisions, and locate and assemble documents.
- ☒ Virtual conferencing solutions not only save on travel costs, but also improve meeting productivity by enabling remote employees with the right expertise to attend meetings; virtual conferencing also aids in fostering cohesion among virtual teams.
- ☒ Virtual classroom solutions enable more effective and efficient training.
- ☒ Instant messaging improves time to response and problem solving by allowing on-demand discussions between multiple workers. Instant messaging also enhances a sense of cohesiveness among virtual teams.
- ☒ Collaboration portal solutions enable better knowledge management and information sharing among teams. When information is properly managed in this way, workers enjoy greater productivity, consistency of output quality, and quicker dissemination of important updates for their work.

Overall, the survey found that the use of these workplace solutions at HP enabled collaboration, improved resource utilization, reduced wait times for project information, cut down on travel time and cost, and improved the speed and quality of information and creative output.

CHALLENGES AND OPPORTUNITIES

Organizations looking to capitalize on virtual collaboration face a variety of challenges:

- ☒ Reducing IT complexity and costs while introducing new technologies
- ☒ Providing adequate support in face of rapid proliferation of new devices
- ☒ Maintaining round-the-clock support with consistent service levels across geographies
- ☒ Integrating and interoperating disparate systems and devices for information transparency
- ☒ Upholding business continuity in a distributed work environment
- ☒ Securing end-user environments and desktops given legal, regulatory, and competitive pressures
- ☒ Reducing time required for deployment and management of technology

IT solution providers, such as HP, will have both technological and business challenges of their own in designing and executing effective responses to customer requirements that are wide in scope and deep in detail. HP specifically can help organizations overcome these challenges by working with its customers to formulate comprehensive business process "blueprints" for virtual collaboration. These plans can describe in detail how a combination of IT solutions achieves specific and measurable business results by supporting virtual collaboration. This planning procedure will help in laying out the business processes impacted by new virtual collaboration channels and techniques, and show the correlation between virtual collaboration and business outcomes. It will also encourage customers to think more holistically about the right combination of IT solutions for their workplace needs and avoid duplication of resources.

CONCLUSION

Expanding businesses will necessarily find themselves managing employees, customers, partners, and suppliers across multiple geographies and time zones. With the expansion (and in some cases, the dissolution) of collaboration boundaries, companies now realize that simply providing email or cell phones is no longer sufficient. The above cases show the strategic benefits that accrue when organizations embrace changing workplace cultures and environments, and foster virtual collaboration as a fundamental component in their business and technology strategies. As such, enterprises will need an open-minded and holistic approach toward hardware, software, and services across the IT spectrum, and must plan for ways to integrate these components across an ever-expanding universe of end-user workplace requirements and business process demands. Only then will true collaboration be achieved.

METHODOLOGY

The purposes of this study were to:

- Provide a high level overview of changing dynamics in end-user workplace environments
- Educate the market on the importance and benefits of collaboration in response to the workplace's shifting trends
- Profile HP's five-pronged approach toward enabling virtual collaboration in end-user work environments

As such, the study methodology entailed in-depth qualitative case study interviews with three client companies supplied by HP. The interviews gathered data such as:

- The business and technology challenges before, during, and after implementation
- The previous and current IT infrastructures and personnel makeup
- The relevant processes and work culture elements within the organizations
- The qualitative and quantitative benefits accrued from the implementation and deployment of virtual collaboration solutions

Only companies that have used HP collaboration services and solutions, and that can speak to HP's end-user workplace solutions' benefits and challenges, were selected.

Copyright Notice

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

Copyright 2006 IDC. Reproduction without written permission is completely forbidden.

4AA0-7201ENW, September 2006