Aberdeen*Group*

OnSite

For Some, Thin *Is* Beautiful

Preface
Aberdeen conducts research in North America and Europe on technology's impact on the operations of organizations. These on-site interviews typically produce a wealth of information, often providing findings that are proprietary to the client sponsoring the research project. In one instance, both the IT supplier funding the research (IBM) and the customers interviewed (several major North American banks) authorized the publication of our interviews.

Background
During 1997, Aberdeen conducted research in related areas to determine:

- What Information Systems (IS) and line of business (LOB) managers were planning for desktop replacements given the growing concern over Y2K and the abundance of non-compliant DOS- and Windows 3.xx-based PCs, and to what extent these older desktop systems would be replaced by Network Computing devices (NCs).
- How the still-nascent concept of Web-based applications would impact future desktop decisions.

Trends uncovered in 1997 have become fact over time. Most IS managers planned to replace older desktops with Windows 95, rather than move to NT Workstation. Those IS managers who showed interest in NC devices looked at them as replacements for existing 3270 and 5250 "dumb" terminals. Additionally, given the year, most IS folks were too busy with other issues to worry about the impact of Web-based applications on their current desktop decisions.

Since this research was primarily done using on-site, in-depth interviews with decision-makers, this format allowed for a level of probing that telephone interviews do not. While physically thin clients have a role in vertical transaction environments, most managers — then and now — see the PC as their desktop of choice. However, longer conversations with these managers led to the discovery that there was a growing interest and acceptance of a *virtually* thin client.

It Depends on What Thin Is
Aberdeen's definition of a thin-client includes all devices that rely on centralized servers to process computing tasks, as well as store and provide access to corporate data. The NC device will continue to have a role, as the recent product announcements from IBM, HP, and Compaq verify. NCs can be especially appropriate for

heavy transaction-orientated tasks where terminals were used in the past — such as call centers, financial processing centers, and order taking. The demand for Windows-based PCs is still growing, and we anticipate that it will remain the desktop of choice for some time to come. (Consultants get paid for stating the obvious.) Nonetheless, the role of the desktop device, even when called a PC, is changing, and we expect a major shift to the virtual thin client over the next several years.

With the virtual thin client, the PC is booted from the server, and distribution of operating system and application updates is all done from the server. Users can access their applications from any desktop since they are maintained on the server. This setup drastically reduces help-desk staffing requirements because managers do not have to track multiple combinations and permutations of PC configurations.

The Changing Face of Banking
Financial institutions, especially those with numerous remote sites, have been using the thin-client model for decades. This architecture provides the capability to control desktops to maximize productivity gains. However, competitive pressures are changing the role of bank managers, mergers and acquisitions now require a powerful desktop for many employees, and Information Technology (IT) costs still need to be controlled.

Aberdeen analysts visited several large banks to see how the implementation of thin clients had changed, and to compare that with other options used elsewhere. Each bank had a different experience, but the core of each bank's IT experience was similar. The paramount similarity is that each was a "Big Blue" shop since IT was first implemented, although each now has myriad IT suppliers installed throughout. For the purpose of this *OnSite Profile*, one bank's experience (hereafter "the Bank") will serve as a metaphor for all of the banks.

The Bank
In the 1980s, the Bank began replacing terminals at its 1,000 branches with DOS-based PCs connected to IBM 4700 communications controllers. Initially, updates were done by diskette and took about two years to implement. By the end of a 10-year rollout, 15,000 PCs were running DOS 6.3; the 4700s located at each site were equipped with memory and storage; and updates were sent electronically.

In an attempt to improve both the management of the far-flung network and the functionality of what was on the network, the Bank decided to migrate from the 4700 controller and DOS PCs to a LAN-based operation with new desktops. Electronic updates of the LAN and desktop, and remote management and control over the desktop (including remote PC boot) were key criteria. Planning and testing began in 1992, but the need to integrate an acquired company and the rapid changes in technology delayed the implementation until 1994.

The need for remote boot, the lack of branch LAN support, the need for a robust multi-tasking environment for both server and desktop, and the need for a secure environment eliminated NT Server from consideration. Unix was eliminated due to a lack of applications, so the Bank went with Warp Server as the NOS and the remote-boot version of Warp for the desktop.

Successful pilots led to the full rollout. LANs were installed at the branches for back-office and teller applications, while ATMs continued to run off the 4700s. Three hundred branches and the help desk — representing 80% of the Bank's business — were running Warp 3 on the server and desktops. IS could remotely boot up to 40 PCs attached to one server, and updates were done electronically using a combination of Computer Associates software and Bank software. By enforcing restrictions for the desktop configuration, problems were being solved faster than ever — the help desk was being efficiently leveraged.

Beginning in 1998, in the midst of the current Warp rollout, user and business demands started building for Internet access, Web access to intranet-based information, and Java-based applications. In addition, branch managers were being measured by sales and the branches' individual P&Ls — so PC administration costs were being examined by a growing number of managers.

The Central IS team went back to the drawing board and lab, and began testing options. With the exception of the Call Center where all the desktops were located in one building, number crunching showed that a Microsoft solution was too costly for the few benefits it provided. Besides, the Bank's IT infrastructure included so many different platforms and operating systems that a choice that reduced choices was not an option. It was about this time that IBM introduced WorkSpace On-Demand (WSOD) (sidebar). WSOD was found to have all of the features the Bank wanted, plus out-of-the-box features, such as remote boot, that could replace the custom built software.

IBM's WorkSpace On-Demand (WSOD) is a software-only network computing implementation. The server currently requires Warp Server, but the client can be OS/2, Win 95, Win 98, or NT. It allows for remote installation of the client OS; management of Win32 applications on the client; secure log-on and authentication; and a "lock-down" of the user's desktop — i.e., a standard configuration.

OS installs and updates are unattended, and the administrator can determine how much code resides on the server versus the client. With the desktop image maintained on the server, a user's profile can be downloaded to any machine she logs on to.

WSOD includes Netscape's latest browser and a very fast Java Virtual Machine for execution of Java programs.
For more details, see www4.ibm.com/software/network/workspace/.

Current Status

The Bank has reached a point at which it is gaining all the benefits of a thin-client implementation without users suffering the loss of the plethora of applications associated with physically fat clients. Users say that if they have access to modern technology — Internet access, browsers, 32-bit applications, and Java applications — then they do not care what is providing this functionality. The IS team has control over the desktop, superior remote management capabilities, co-existence of clients, one-hour migration to a new operating system, and tools to easily add new desktops, remote distribution of applications, and standardized drivers and user "images" to drastically reduce help-desk costs.

Aberdeen Conclusions

Since few organizations are building their IT infrastructures from scratch, the decisions surrounding whether to go the thin-client route, and then how to implement it, has to be done in context. The IS staff members interviewed at the banks described a process that took many years of fits-and-starts before they were able to implement a virtually thin-client architecture that provided the benefits and functionality of a fat-thin world.

While it was not stressed in this *OnSite*, those interviewed had very carefully reviewed the options — both in the lab and by crunching numbers — to understand the long-term cost differences of each option. IBM's WSOD was on the banks' short list because they had long relationships with IBM and Warp. It became and remains their first choice because WSOD provides the migration path to the features and functions users demand in a way that IS appreciates. And, as one manager noted, since his virtual thin-client implementation using WSOD allows him to manage 7,500 PCs with only six staff members, his desktop cost-of-ownership is very low.

Our expectation is that as the underlying operating system of the WSOD server — a barrier for many when considering thin-client network computing — becomes both broader and less relevant, many other organizations will review this IBM offering.

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