iPads: Not Notebook Replacements, but Still Useful for Business

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Apple's iPad has become the focus of attention of businesses due to its high consumerization potential, to deliver entirely new applications and customer delivery mechanisms. At the same time, it also creates new support burdens as end users bring iPads into the enterprise and onto corporate networks.

Key Findings

- In the short term, the main use for iPads will be as companions to notebooks, not notebook replacements.
- In some circumstances, senior executives, marketing, sales and task workers may be able to use iPads as their primary device.
- Secure access clients such as Citrix Receiver for the iPad, Wyse Technology's Pocket Cloud or HLW's iTap can bring corporate Windows applications and desktops to the iPad for organizations that have the server infrastructure in place.
- New applications and uses are emerging for iPads in a number of vertical fields, as well as in business-to-consumer (B2C) areas.

Recommendations

- Prepare for the fact that many employees have already purchased iPads and are likely to use them on enterprise networks.
- Provide iPads to IT staff and key users to understand which applications and uses the iPad can — and cannot — support.
- Leverage the use of secure access client utilities like Citrix Receiver to provide "zero footprint" access to centralized enterprise applications and data.
- Focus long-term application strategies on Web-centric, cross-platform, cross-vendor tools such as HTML5 (Web-centric models are replacing client/server models), and design user experiences for mobile devices first to force simplicity and improved user experience on all platforms.
ANALYSIS

A recent minisurvey of Gartner CIO clients showed that 85% have been getting requests for Apple iPhones, iPods or iPads, and that almost 75% have found that end users are connecting those devices to the enterprise network with or without permission. Yet, only 15% are supporting iPads today, but are being motivated to support them in 25% of the cases by executives and in 42% of the cases by other staff (the remaining respondents said there were no motivators for the iPad).

This level of interest has been confirmed by a high rate of client inquiries to Gartner client-computing and mobile and wireless analysts.

Notebook Companion

For the immediate future, the main use of the iPad is as a notebook companion or as a secondary device to take on the road or use for fast access to e-mail, calendaring, interrogating Web applications and information sources, and showing PowerPoint presentations (with an external Video Graphics Array [VGA] out cable, the iPad can connect to video projectors). The iPad falls short of full notebook functionality on the content creation side where:

- Serious computing power is required (for example, manipulating large spreadsheets and databases or developing graphics).
- A large amount of text keyboard input is required. (External Bluetooth keyboards are available, but are not mainstream.)
- High document fidelity is required (see Note 1 and "Office in Your Pocket: Not Quite There Yet").
- A mouse is required for finer manipulation than touch provides.
- Easy access to printing is required.
- Users need to run multiple applications (locally) at the same time.

As a result, the majority of knowledge workers cannot use the iPad to replace their notebooks. Since these workers usually also have smartphones, the iPad becomes their third device. Most organizations will not buy that third device. Of course, there are exceptions, such as for high-ranking executives.

Nonetheless, because of the convenience factor for travel and an "instant on" for quick look-up functions, many users are paying for the iPad with their own money to use both for work and pleasure. This creates an imperative for ensuring that iPads can be secure to keep work and personal functions/data separate.

Apple has stated that it will add support for multitasking, printing and more-sophisticated mobile device management when the iOS 4.2 update becomes available for iPad in November 2010.

Cases for Notebook Replacement

For workers requiring only mail, calendaring and a very limited or fixed set of tasks, an iPad may serve as a notebook replacement (as could a smartphone). Some companies are giving iPads to their sales force. In cases where extensive written deliverables are required or where large spreadsheets are needed to report on pipelines, the iPad may not be sufficient.
Using Secure Access Clients to Extend Capability

Secure access clients like Citrix Receiver for iPad, HLW's iTap or Wyse's Pocket Cloud allow iPads to access corporate Windows applications or desktops via servers running centralized applications. The iPad acts as a thin client. Users can run applications not available natively on the iPad and have full computational ability for databases and spreadsheets. They can run Office applications with full formatting fidelity. Drawbacks to this approach include:

- The enterprise must already have or invest in a centralized application infrastructure.
- The iPad's lack of mouse support can make running Windows applications frustrating, since the “click and drag” interface often requires finer manipulation than is possible with touch.
- Applications don't work offline.
- Application responsiveness and load times depend on communications bandwidth and latency.

Beyond notebook replacement, many new and creative uses are being piloted. Some of these applications are already running on tablet PCs (full-featured notebooks with touch or pen capabilities), but are enhanced on iPads. Others are totally new applications.

Field Service

Here are some instances where iPads can be used for field service:

- Mapping: Multitouch has made the iPad an ideal map-reading platform. A user can go from a global view down to a street-level view, and zoom out again.
- Schematics: As with mapping, schematics on an iPad can be zoomed to a full device view down to the individual component level and back again.
- Technical library: Manuals can be stored on an iPad for just-in-time review.

Any one of these capabilities is useful in field service applications. Future applications that combine them will provide even more functionality. For example, tapping a spot on a map might reveal the equipment at that location (along with the schematics). Tapping a particular component on the schematic might bring up the relevant sections in a technical manual.

Current limitations of the current iPad version include:

- Limited readability in direct sunlight
- Capacitative screen doesn't recognize stylus or gloved finger input
- Not rugged — some companies have determined that the low cost and high convenience factors outweigh the lack of ruggedization
- No camera (although not all field service applications require a camera)

Healthcare

These are some instances where iPads can be used for healthcare:

- Doctors' waiting rooms: Information about patient's illness can be displayed. Drug companies are considering subsidizing with "infomercials," provided that theft and ethical issues can be adequately addressed.
• Doctors’ personal organizers with patient care information.
• Reference material: The iPad can house the “Physicians' Desk Reference,” medical texts and medical journal articles. (There are currently thousands of iPhone medical applications, most of which are also available on, if not also optimized for, iPads.)
• Viewing diagnostic images.
• Electronic prescribing: Doctors can use a browser to forward prescriptions to a pharmacy in ad hoc moments after speaking to a patient on the phone.

Several major healthcare providers have declined to use iPads for direct patient care applications because the device cannot be sanitized. It will not withstand swabbing with bleach, and the capacitative screen will not work inside a plastic screen. However, strong interest from doctors means that healthcare organizations will have no choice but to support iPads.

Pharmaceutical

Here are some iPad uses in the pharmaceutical industry:

• Face-to-face e-detailing
• Tracking medical samples and doctors’ delivery preferences
• Trade shows
• Subsidizing iPad use in doctors’ patient waiting rooms
• Providing information for doctors’ medical reference applications
• Medical scientific liaison (MSL) visits — Ph.D.s and doctors doing and dialogue with doctors

Many e-detailing applications require Flash and will have to be rewritten for the iPad. While a user mark is usually an acceptable “electronic signature,” certain applications involving pharmaceutical research require a full digital signature, with x.500 digital certificates issued to the user. The trend is toward more of this in the future.

Administrative

Here are some instances where iPads can be useful for administrative purposes:

• Digital signage
• Conference room sign-up

E-Learning

The iPads has several uses in e-learning:

• Exploratory learning, e.g., "tell me about that"
• Media material, e.g., podcasts and videos
• Simple surveys, tests and questionnaires
• Time-sensitive learning, e.g., new regulations
• "Just in time"/"just enough" learning
• Document repositories
• Learning administration, e.g., sign up for courses
• Reference material, e.g., disaster plans, manuals, schematics

B2C
The iPad can be useful in these B2C instances:
• Interactive brochures (travel agent examples where customers create their own itineraries)
• Rented or complimentary loaner video players/book library for airlines, cruise ships and resorts

The level of engagement provided by iPads makes them ideal information delivery and selling tools. The combination of direct manipulation, high resolution and interaction allows the customer or user to gather more information faster than through traditional means.

What the iPad Can't Do Today
Currently, the iPad has the following drawbacks:
• No camera
• No Flash support
• Capacitative screen doesn't recognize stylus or gloved finger input
• No stylus capability for extensive handwritten input (annotation or forms)
• No character recognition
• No mouse support
• Inability to leverage many Windows-based applications natively
• Poor daylight readability
• Can't be sanitized or work in a sleeve for healthcare
• Rudimentary security and manageability
• Not rugged

Application Development Considerations
Every new application developed or deployed in the enterprise should be built to support the iPad (and other tablets), unless specific requirements justify a waiver (such as the requirement for a local terabyte store). Long-term application strategies should focus on Web-centric, cross-platform, cross-vendor tools such as HTML5, and should design user experiences for mobile devices first to force simplicity and improved user experience on all platforms.
RECOMMENDED READING

"Office in Your Pocket: Not Quite There Yet"

"Managing Client Computing Through 2015"

"iPad's Influence on Media to Build Over Time, Not Overnight"

Note 1

Fidelity

Fidelity refers to the ability to maintain all templates, formatting and/or formulae when moving documents from one system to another. Documents created in a desktop version of Office can lose critical details when sent to a mobile device, even if the device is using a mobile version of Windows. Even worse, the user generally gets no notice of what detail was actually lost. The fidelity lost when moving across platforms can come from application compatibility issues and/or from moving to different screen sizes. Much of the business content we regularly work with is formatted for traditional paper, and for 12-inch or larger notebook and PC screen sizes.

A minor but annoying example of fidelity loss is when a beautifully laid out deck of slides is sent to a mobile device and the fonts are changed or the graphics are slightly rearranged.

The problem can get more serious with templated documents intended for production use. Once transported to a mobile device, templating or critical formatting can be lost. For review purposes, just seeing the remaining text or data may be sufficient. However, if seeing the text or data in context, or if doing updates to the document are important, then fidelity loss could be a show-stopper. PDF files retain fidelity across platforms, but do not allow updates.

On the other hand, taking unstructured meeting notes on a mobile device for upload to a PC for later use is unlikely to cause fidelity problems.

This research is part of a set of related research pieces. See "ATV: Guide for Mobile Application Development, Sourcing and Support" for an overview.