

COMPARING TABLETS IN SECURE ENVIRONMENTS: INTEL CORE I5 VPRO PROCESSOR-BASED WINDOWS 8 TABLET VS. APPLE IPAD

Secure mobile productivity without compromise.



The Intel® Core™ i5 vPro™ processor-powered Fujitsu STYLISTIC® Q702 easily completed common tasks in a secure office environment.

The Apple® iPad® failed on some and was slower on others.

The popularity of tablets in the workplace is rising as employees seek lighter, sleeker, more portable devices to use to their work on the go. Because not all tablets fit successfully into a business environment where security is a concern, it is essential to select a device that lets workers complete everyday tasks with ease.

In the Principled Technologies labs, we compared user experiences that two tablets provide: a Fujitsu STYLISTIC Q702 tablet powered by an Intel Core i5 vPro processor and Microsoft® Windows® 8 and a third-generation Apple iPad. Our tests looked at the tablets' abilities to let workers connect to a secure VPN and open, edit, and save files directly over the VPN; connect to a WebEx video conference and share a file during the session, rotating "Presenter privileges" to the others on the call; and opening email, opening and editing attachments, connecting to network file shares, and collaborating with colleagues. The verdict? We found that the Intel Core vPro processor-based Windows 8 tablet was able to meet the needs of a typical enterprise worker with no complications for the security scenarios we tested, while the Apple iPad presented a number of obstacles to completing basic tasks.

Tablets for the workplace should make office life easier for the worker, not add roadblocks to performing everyday activities. When selecting a tablet for the office, the most easily integrated tablet provides the greatest benefit to your workers and your organization.



IT'S ABOUT MORE THAN JUST NUMBERS

To learn about the enterprise compatibility of the tablets, we created scenarios reflecting everyday work tasks in a secure environment. We measured the amount of time it took to complete these scenarios; in almost all cases, the Fujitsu STYLISTIC Q702 tablet powered by an Intel Core i5 vPro processor and Windows 8 took less time. In some cases, the time difference was slight, and in others, it was dramatic. For example, the Intel-based tablet opened a large Excel file in just 2 seconds, compared to 4 minutes for the iPad.

However, in many cases time was only part the story. If your device doesn't allow you to be full participant in a Web conference, but limits your role to that of a viewer, it becomes a serious problem.

In this report, we provide both the time the tablets took to complete the scenarios and the issues they encountered. For detailed system configuration descriptions, see [Appendix A](#). [Appendix B](#) provides detailed results and [Appendix C](#) details our test procedure. [Appendix D](#) includes the characteristics of our test files.

THE RIGHT TOOL FOR THE JOB

A big advantage in choosing an Intel Core i5 vPro processor-based Windows 8 tablet is that it supports familiar, frequently used programs that typical offices use. This allows such tablets to integrate into the existing environment while maintaining easy collaboration with other devices.

The experience with the Apple iPad, in contrast, can be quite different. With over 700,000 apps currently available in the App Store, choosing the right one for the job can be a challenge. What works for some users may not work for others depending on how they use the application and the specific environment in which they intend to use it. Because we couldn't test every app, we chose for each scenario what we believed were the most likely applications a user would choose based on popularity and our test usage scenario. Because we wanted to avoid penalizing the iPad for the possible shortcomings of an application, for office productivity-related tasks on the iPad, we chose both Quickoffice Pro HD and Apple's Productivity offerings—Pages, Numbers, and Keynote.

WHAT WE FOUND

The Fujitsu STYLISTIC Q702 tablet with Microsoft Office 2010 encountered no issues or obstacles performing our test scenarios. It completed them generally more quickly than the Apple iPad and required no extra steps to complete the tasks. When handling documents, the Intel Core i5 vPro processor-based Windows 8 tablet

introduced no formatting problems; the files appeared as intended, and saving files created no new issues. With the Apple iPad, that was not always the case.

With the iPad, we encountered several issues, including the inability to be a WebEx conference presenter, crashing applications, Excel files not opening because they contained too many rows, formatting problems that rendered documents unusable, the inability to collaboratively work on a shared Excel file, and more. While the Apple iPad was an adequate viewing device and could perform some tasks with relative ease, our findings suggest that it would present several issues for tasks that employees perform on a daily basis when using file types commonly used in the workplace.

TEST SCENARIOS

Scenario 1 – Connecting to the VPN and participating in a video conference

An employee working from home needs to access a file from work, a conference agenda, before participating in a WebEx video conference. She connects through the VPN to open the file, make a change to it, and save it both on the network and on her local device. She then connects to a WebEx video conference and shares the file during the call. During the conference, she, like each of the other attendees, takes a turn as presenter.

Tasks

- Connecting to VPN
- Opening, editing, and saving files directly over the VPN
- Connecting to a WebEx video conference, sharing a file with other conference participants, and taking a turn as presenter

What we encountered

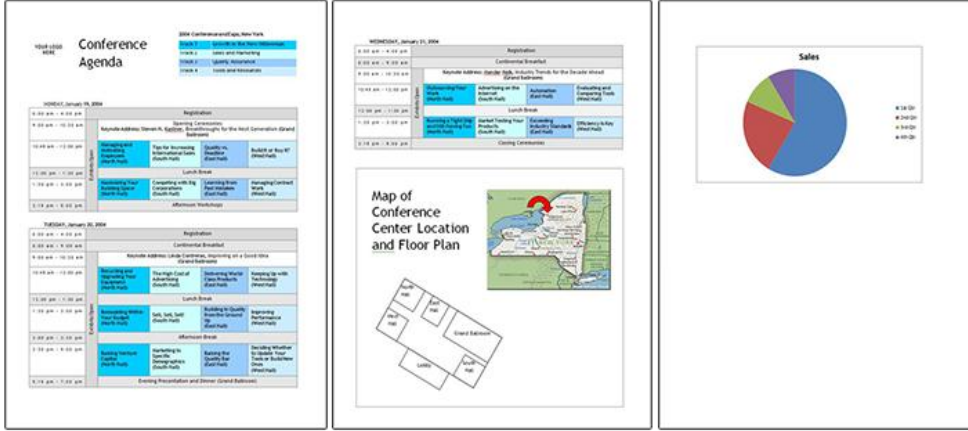
While the iPad could connect through the VPN and access the agenda document with no issues, there were problems with editing and saving the file. Most importantly, the iPad prevents users from acting as full WebEx conference participants—they cannot present information.

Even if the user did have the ability to take a turn as a presenter, the document itself would be unsuitable for sharing—it contained simply too many formatting errors using both Quickoffice Pro HD and Pages. The document header was either partially or entirely missing and tables were incorrectly formatted. The Quickoffice version was missing a conference center map graphic and pie chart. The Pages version reorganized the tables and incorrectly inserted the third table after the incomplete conference center map graphic.

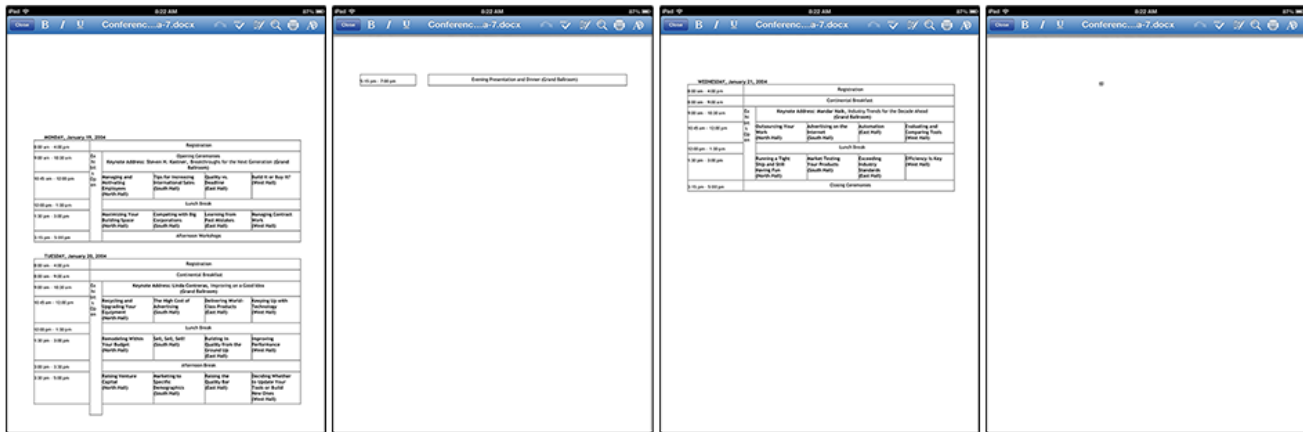
Our simple editing task, adding one word to the document title, posed a problem because neither iPad application rendered the title correctly. Even after we added a title back into the document, other elements remained missing—the company logo and one table. While Quickoffice displayed some of the document’s existing tables,

it did not permit us to add new ones. Figure 1 shows how the tablets rendered the document. Both iPad apps rendered it in such a way that it would be unsuitable to present to colleagues.

Intel Core i5 vPro processor-based tablet



iPad using Quickoffice



iPad using Pages

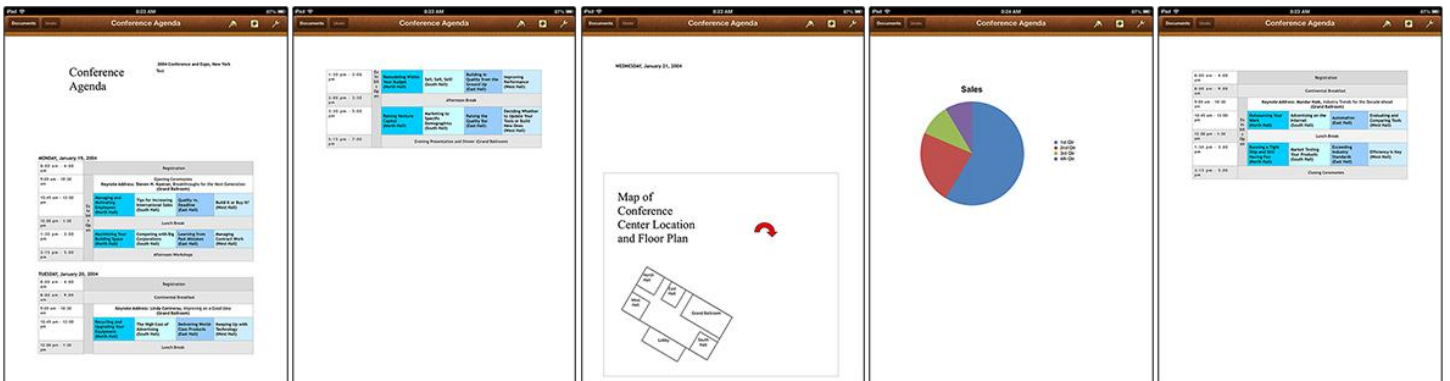


Figure 1: The same document displayed on the Intel Core i5 vPro processor tablet and with two different apps on the iPad.

The iPad was able to connect to the WebEx videoconference call with no issues. However, the iPad limits users to viewing conference content and does not allow the user to present material. Figure 2 shows the WebEx frequently asked question and response illustrating this serious limitation.

Can I present content from my iPad and iPhone?

This feature is not supported. You can however view content shared from other's computers. In addition, if you are the meeting host, you can pass presenter control to a computer user to share content.

Figure 2: WebEx on iPad's inability to present. WebEx FAQ found at <http://www.webex.com/products/web-conferencing/mobile-iphone-ipad-faq.html>.

In contrast, the Fujitsu STYLISTIC Q702 encountered no obstacles or issues performing this scenario. Connecting through the VPN and accessing the file went smoothly and, more important, no issues arose with the document's formatting or with the editing and saving the document over the VPN.

Likewise, we encountered no issues during the WebEx videoconference. The Fujitsu tablet allowed us to connect and perform all of the tasks a full conference participant would need to do, including taking their turn as presenter and sharing a correctly rendered document that others could view and annotate.

Figure 3 details the times, in minutes:seconds, that it took the tablets to complete the first scenario. For a full list of compatibility issues we encountered, see [Appendix B](#).

Time to complete workflow			
	Fujitsu STYLISTIC Q702 Microsoft Office	Apple iPad QuickOffice Pro HD	Apple iPad Pages
Time to connect to the VPN	00:18.51	00:11.80	00:11.80
Time to open Word DOCX	00:02.54	00:07.53	00:11.99
Time to edit and save the Word DOCX file back to the network	00:21.90	Incomplete Task 00:57.95	Incomplete Task 00:52.85
Time to save the edited Word DOCX file locally	00:05.62	00:16.33	00:09.90
Time to connect to WebEx conference	00:32.43	00:15.95	00:15.95
Total time	01:21.00	Incomplete scenario 01:49.56	Incomplete scenario 01:42.49

Figure 3: Times, in minutes:seconds, that it took the tablets to complete the scenario.

Scenario 2 – Collaborating with multiple file types

One employee gives another employee a USB Flash drive with eight types of documents on it. The second employee copies the files onto her tablet and opens, edits, and saves each one locally. She then copies one of the files, a shared Excel spreadsheet, to the network, where she collaborates on it with a third colleague.

Tasks

- Transferring files from a USB flash drive onto the tablet
- Opening/editing/saving different file types locally
- Sharing and collaborating in Excel

What we encountered

The Intel Core i5 vPro processor-based Fujitsu STYLISTIC Q702 tablet with Windows 8 had no issues retrieving files from a USB flash drive, editing and saving multiple file types, or allowing collaboration.

The Apple iPad was, again, much more difficult to work with. The iPad has no USB port and the USB adapter kits on the market work with only digital photo and video cameras to transfer pictures and video files, other file types. To copy the files from the flash drive to the iPad, we chose to use Dropbox, which required us to have a separate PC with Dropbox installed. Once we got the files onto the iPad, many elements of the files were not rendered, formatted, or even opened the way that the original files on a PC were. Figure 4 shows how a PowerPoint animated slide was presented using Quickoffice Pro HD on screen, and the issues that the Apple iPad presented. For a full list of the issues we encountered on the tablets, see [Appendix B](#).

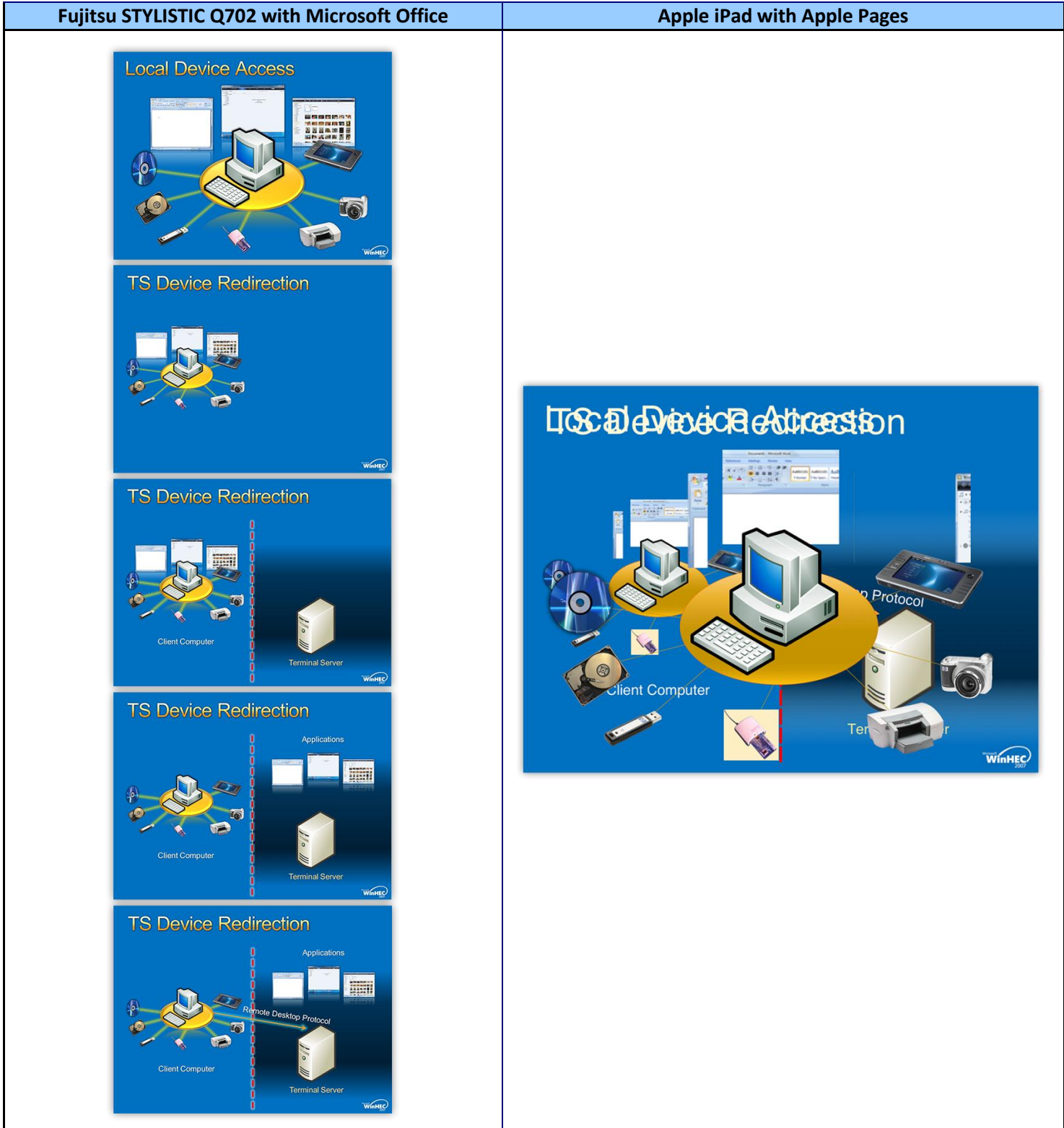


Figure 4: How a PowerPoint slide animation appeared on the two tablets.

Another reason we were unable to complete this scenario with the Apple iPad was that Quickoffice Pro HD and Apple Numbers do not allow users to work collaboratively at the same time on shared Excel spreadsheets. A user would must work on it, save and close it, and then notify the next user that the file is available for editing. This of course was not an issue with the Intel Core i5 vPro processor-based Fujitsu tablet equipped with Microsoft Office.

Figure 5 details the time it took the tablets to complete this scenario. The Fujitsu STYLISTIC Q702 tablet powered by the Intel Core i5 vPro processor and Windows 8 took just under 3 minutes to complete the tasks, while it took the Apple iPad up to 26 minutes while encountering as many as 38 issues with the documents. For a complete list of the issues we encountered completing this scenario, see [Appendix B](#).

Time to complete scenario			
	Fujitsu STYLISTIC Q702 (with Microsoft Office)	Apple iPad (with Quickoffice Pro HD)	Apple iPad (with Apple Pages, Numbers, and Keynote)
Time to transfer the files from USB flash drive to tablet	00:13.58	01:21.20	01:21.20
Time to open Excel XLS	00:01.41	00:04.58	00:33.21
Time to edit and save Excel XLS	00:08.03	00:14.29	00:13.12
Time to open Excel XLSX1	00:02.56	04:32.40	FAIL The document can't be opened because it contains too many cells.
Time to edit and save Excel XLSX1	00:07.31	05:42.73	FAIL The document can't be opened because it contains too many cells.
Time to open Excel XLSX2	00:01.37	00:10.36	00:30.50
Time to edit and save Excel XLSX2	00:07.74	00:22.69	00:13.07
Time to open Word DOC	00:01.68	00:04.31	00:12.43
Time to edit and save Word DOC	00:24.45	00:30.67	00:17.87
Time to open Word DOCX1	00:01.88	00:04.93	00:12.09
Time to edit and save Word DOCX1	00:24.50	FAIL Quickoffice crashed	00:18.39
Time to open Word DOCX2	00:01.76	00:05.95	00:12.01
Time to edit and save Word DOCX2	00:21.95	00:27.03	00:17.40
Time to open PowerPoint PPT	00:01.71	00:08.59	00:12.59
Time to edit and save PowerPoint PPT	00:08.63	00:18.17	00:08.77
Time to open PowerPoint PPTX	00:01.68	00:09.65	00:18.63
Time to edit and save PowerPoint PPTX	00:06.41	00:20.80	00:10.37

Time to complete scenario			
	Fujitsu STYLISTIC Q702 (with Microsoft Office)	Apple iPad (with Quickoffice Pro HD)	Apple iPad (with Apple Pages, Numbers, and Keynote)
Time to connect to network file server and copy a shared Excel XLSX1 file to the network	00:08.16	00:28.68	FAIL The document can't be opened because it contains too many cells.
Time to open, edit, and save the Excel XLSX1 file to the network file server	00:12.82	10:13.78	FAIL The document can't be opened because it contains too many cells.
Time to connect to network file server and copy a shared Excel XLSX2 file to the network	00:07.37	00:28.07	00:51.02
Time to open, edit, and save the Excel XLSX2 file to the network file server	00:11.74	00:50.41	01:12.40
Total time	02:56.74	Incomplete scenario 26:39.29	Incomplete scenario 07:15.07

Figure 5: Times, in minutes:seconds, that it took the tablets to complete the scenario.

IN CONCLUSION

If a tablet can't integrate into your secure enterprise environment well enough to perform basic tasks for your workers, it has no business in your workplace. In our tests, the Fujitsu STYLISTIC Q702 tablet powered by an Intel Core i5 vPro processor and Windows 8 not only completed common scenarios generally more quickly than the third-generation Apple iPad, it did so without encountering any integration issues for the tasks we tested. The Intel Core i5 vPro processor-based Windows 8 tablet was able to open, edit, and save documents as we intended, and let us be full participants in a WebEx conference. In contrast, the Apple iPad was unable to get the job done with these simple, everyday tasks.

APPENDIX A – SYSTEM CONFIGURATION INFORMATION

Figure 6 provides detailed configuration information for the test systems.

System	Apple iPad (3rd generation)	Fujitsu STYLISTIC Q702 Hybrid Tablet PC with keyboard docking station
General		
Number of processor packages	1	1
Number of cores per processor	2	2
Number of hardware threads per core	1	2
Total number of threads	2	4
System dimensions (width x depth x height)	9.50" x 7.31" x 0.37"	Tablet: 11.89" x 7.68" x 0.50" Tablet with docking station: 11.89" x 7.99" x 1.07"
System weight	1 lb. 7 oz.	Tablet: 1 lb. 14 oz. Tablet with docking station: 3 lbs. 11 oz.
CPU		
Vendor	Apple	Intel
Name	NA	Core i5 vPro
Model number	A5X	3427U
Core frequency (GHz)	1.00	1.8
L1 cache	32 KB + 32 KB	32 KB + 32 KB (per core)
L2 cache	1 MB	512 KB (256 KB per core)
L3 cache	N/A	3 MB
Memory module(s)		
Type	DDR2-533	DDR3-1600
Speed (MHz)	533	1,600
Size (MB)	1,024	4,096
Hard disk		
Vendor and model number	Integrated flash storage	Toshiba THNSNS128GMCP
Size (GB)	16	128
Operating system		
Name	Apple iOS 6.0	Windows 8 Professional
Graphics		
Vendor and model number	PowerVR SGX543MP4	Intel HD Graphics 4000
Resolution	2,048 x 1,536	1,366 x 768
Wireless		
Vendor and model number	802.11a/b/g/n	Intel Centrino® Advanced-N 6205
Ports		
USB Type	0	Tablet: 1 x USB 2.0, 1 x USB 3.0 Docking station: 2 x USB 2.0
Other	Headphone jack	Tablet: HDMI, Media card reader, headphone jack, microphone jack Docking station: Ethernet, VGA out

System	Apple iPad (3rd generation)	Fujitsu STYLISTIC Q702 Hybrid Tablet PC with keyboard docking station
Monitor		
LCD type	LED-backlit glossy widescreen Multi-Touch display with IPS technology	LED backlight AH-IPS anti-glare LCD
Screen size	9.7"	11.6"
Battery #1 (Tablet)		
Type	Apple A1389 integrated Li-polymer	3-Cell Li-polymer
Rated capacity	11560 mAh 42.5 Wh	3150 mAh, 34 Wh
Battery #2 (Docking station)		
Type	N/A	4-Cell Lithium-ion
Rated capacity	N/A	11.4V, 3150 mAh, 45 Wh

Figure 6: System configuration information for the test systems.

APPENDIX B – DETAILED TEST RESULTS

Scenario 1 – Connecting to the VPN and participating in a video conference

Figures 7 through 11 detail the issues we encountered completing our first scenario on the tablets. The Fujitsu STYLISTIC Q702 tablet powered by an Intel Core i5 vPro processor and Windows 8 was easy to work with, presenting no issues completing the work tasks. The Apple iPad had a number of notable issues completing the work using both Quickoffice Pro HD and Apple iPad Pages.

Connecting to the VPN

Fujitsu STYLISTIC Q702	Apple iPad
None.	None.

Figure 7: Issues connecting to the VPN.

Opening, editing, and saving files directly over the VPN

Fujitsu STYLISTIC Q702	Apple iPad
None.	<ul style="list-style-type: none"> We could use the FileBrowser application to access and view the file, but not to edit it. To edit the file, we had to open it in either Quickoffice Pro HD or Pages.

Figure 8: Issues opening, editing, and saving files directly over the VPN.

Viewing a Microsoft Word document as intended

Fujitsu STYLISTIC Q702 (with Microsoft Office)	Apple iPad (with Quickoffice Pro HD)	Apple iPad (with Apple Pages)
None.	<ul style="list-style-type: none"> The document header was missing. The color fill was missing. The entire document was black and white. Text that was supposed to appear rotated 90° within a column was instead broken up horizontally inside the column. The second table was formatted incorrectly, with incorrect column and row height. A large blank space appeared between the second and third tables. The map graphic of the conference center was missing. The pie chart was missing. 	<ul style="list-style-type: none"> When we opened the document with Pages, a Document Import Warnings dialog appeared with the following message: <ul style="list-style-type: none"> The missing font Times New Roman was replaced by TimesNewRomanPSMT The missing font Trebuchet MS was replaced by TrebuchetMS. Objects in headers, footers, shapes, text boxes, and table cells were removed. The font Calibri is missing. Your text might look different. The company logo was missing from the header. The table in the header was replaced with the word "Text."

Fujitsu STYLISTIC Q702 (with Microsoft Office)	Apple iPad (with Quickoffice Pro HD)	Apple iPad (with Apple Pages)
	<ul style="list-style-type: none"> We encountered intermittent problems when attempting to save the edited Word DOCX back to the network over the VPN using FileBrowser. The error occasionally produced said "Save Failed. Could not save file – a copy has been stored in 'My Files'." When editing the Word DOCX over the VPN, there was a noticeable lag time between typing a letter and seeing it appear on the screen. 	<ul style="list-style-type: none"> Text that was supposed to appear rotated 90° within a column was instead broken up horizontally inside the column. Table 2 was split across two pages. A large blank space appeared between the second table and where the third table should have been. The third table was reorganized and inserted incorrectly after the conference center map graphic. The map graphic of the conference center was incomplete. When editing the Word DOCX, we could not set the font size to 26 so had to use 24. When we saved the document back to the VPN, Pages saved it as a DOC file (not DOCX). After we had edited the file and saved it back to the network over the VPN using Pages, we received a Document Import Warnings dialog with the following message: <ul style="list-style-type: none"> The missing font Times New Roman was replaced by TimesNewRomanPSMT. The missing font Trebuchet MS was replaced by TrebuchetMS-Bold.

Figure 9: Issues sharing a file with other conference participants.

Connecting to a WebEx video conference

Fujitsu STYLISTIC Q702	Apple iPad
None.	None.

Figure 10: Issues connecting to a WebEx video conference.

Taking a turn as a conference presenter

Fujitsu STYLISTIC Q702 WebEx presentation notable issues	Apple iPad WebEx presentation notable issues
None.	<ul style="list-style-type: none"> It is not possible to present content from the iPad. It is only possible to view the content of other's PCs.

Figure 11: Issues taking a turn as a conference presenter.

Scenario 2 – Collaborating with multiple file types

Figure 12 presents the problems that the tablets had when collaborating with multiple document types originating from a USB flash drive.

Fujitsu STYLISTIC Q702 (with Microsoft Office)	Apple iPad (with Quickoffice Pro HD)	Apple iPad (with Apple Pages, Numbers, and Keynote)
None	<ul style="list-style-type: none"> • There was no way to get the document files directly from the USB flash drive to the iPad. We used a separate PC to copy the files to a Dropbox account. • Word DOC: The header was missing. • Word DOC: The footer was missing. • Word DOC: The hyperlinks in the table of contents page did not work. • Word DOC: The numbers in the table of contents were formatted incorrectly with the digits after 10 wrapped. • Word DOC: Some indent formatting was incorrect. • Word DOC: Some bold formatting was incorrect or missing. • Word DOCX1: The header was missing. • Word DOCX1: The footer was missing. • Word DOCX1: The hyperlinks in the table of contents did not work. • Word DOCX1: The numbers in the table of contents were formatted incorrectly with the digits after 10 wrapped. • Word DOCX1: While scrolling to page 3 the Quickoffice Pro HD application crashed and exited to the home Screen. • Word DOCX2: The header was missing. • Word DOCX2: The footer was missing. • Word DOCX2: The report charts were missing. • Word DOCX2: The color formatting in the table was missing. • Word DOCX2: The border formatting in the table was incorrect. • Word DOCX2: The formatting of the last table was rendered incorrectly. • Word DOCX2: An extra blank page was added to the end of the document. • PowerPoint PPT: The transition between 	<ul style="list-style-type: none"> • There was no way to get the document files directly from the USB flash drive to the iPad. We used a separate PC to copy the files to a Dropbox account. • Word DOC: When the document was opened with Pages, a Document Import Warnings dialog appeared with the following message: <ul style="list-style-type: none"> ○ The missing font Times New Roman was replaced by TimesNewRomanPSMT ○ 3 fonts are missing. Your text might look different. • Word DOC: The table of contents did not work. • Word DOC: We were not able to add a comment to the document. • Word DOC: We were unable to track changes. • Word DOC: The original Segoe font was replaced with Helvetica. • Word DOC: Bullet points were not rendered. • Word DOC: Some of the bold formatting was incorrect or missing. • Word DOC: Some indentation formatting was incorrect. • Word DOC: An extra page was added after the last document page. • Word DOCX1: When the document was opened with Pages, a Document Import Warnings dialog appeared with the following message: <ul style="list-style-type: none"> ○ The missing font Times New Roman was replaced by TimesNewRomanPSMT ○ All comments were removed ○ 3 fonts are missing. Your text might look different. • Word DOCX1: Tracked changes were missing. • Word DOCX1: The table of contents did not

Fujitsu STYLISTIC Q702 (with Microsoft Office)	Apple iPad (with Quickoffice Pro HD)	Apple iPad (with Apple Pages, Numbers, and Keynote)
	<p>slides was not the same.</p> <ul style="list-style-type: none"> • PowerPoint PPT: The slide 2 animation was incorrect, with the column 1 words over top of other words and not in column 1 and no gradual animation. • PowerPoint PPT: The slide 7 artwork was rendered incorrectly with rectangular boxes instead of pictures. • PowerPoint PPT: Slide 17 hyperlinks were not underlined. • PowerPoint PPTX: The slides were missing the gradient colors used in fonts and bullet points, and were instead plain white. • PowerPoint PPTX: The slide 4 animations were missing and instead were all stacked on top of each other in a garbled mess. • PowerPoint PPTX: Slide 8, 9, 10, and 11 missing animations and instead was showing entire slide instead of showing things that were hidden and gradually revealed. • PowerPoint PPTX: Slide 24 animations were missing and the application windows that should have been shown were either missing or cut off. • PowerPoint PPTX: Slide 26 hyperlinks were not underlined. • Excel XLSX1: It took roughly 5 minutes to load the XLSX file. • Excel XLSX1: It took over 6 minutes to save the edited XLSX file back to the network. • Collaborating on a Shared XLSX file: Quickoffice does not support working on a shared XLSX file at the same time as another user. 	<p>work.</p> <ul style="list-style-type: none"> • Word DOCX1: We were not able to add a comment to the document. • Word DOCX1: Bullet points did not appear. • Word DOCX1: An extra blank page was added before the Appendix section. • Word DOCX2: When the document was opened with Pages, a Document Import Warnings dialog appeared with the following message: <ul style="list-style-type: none"> ○ The font Calibri is missing. Your text might look different. ○ Objects in headers, footers, shapes, text boxes, and table cells were removed. ○ All comments were removed. ○ The missing font Courier New was replaced by CourierNewPSMT. ○ The missing font Arial was replaced by ArialMT. • Word DOCX2: The front-page header was missing. • Word DOCX2: The front-page footer was missing. • Word DOCX2: The front-page report graphic was missing. • Word DOCX2: Tracked changes were missing. • Word DOCX2: Page formatting was rendered incorrectly. • Word DOCX2: Bullet points were missing. • Word DOCX2: Comments were missing. • Word DOCX2: The report charts were missing. • Word DOCX2: The company logo (object) graphic was missing. • Excel XLS: When the spreadsheet was opened with Numbers, a Spreadsheet Import Warnings dialog appeared with the following message: <ul style="list-style-type: none"> ○ Unsupported formulas were removed. The last calculated values were imported.

Fujitsu STYLISTIC Q702 (with Microsoft Office)	Apple iPad (with Quickoffice Pro HD)	Apple iPad (with Apple Pages, Numbers, and Keynote)
		<ul style="list-style-type: none"> ○ Pivot tables aren't supported and were converted to regular tables. ● Excel XLSX1: Numbers was unable to open the spreadsheet because it contained "too many cells." ● Excel XLSX2: When the spreadsheet was opened with Numbers, a Spreadsheet Import Warnings dialog appeared with the following message: <ul style="list-style-type: none"> ○ Pivot tables aren't supported and were converted to regular tables. ● Excel XLSX2: When saving the XLSX file, the Numbers application saved it as an XLS file, not an XLSX file. ● PowerPoint PPT: When the PPT file was opened with Keynote, a Presentation Import Warnings dialog appeared with the following message: <ul style="list-style-type: none"> ○ The missing font Arial was replaced by ArialMT. ○ The font Segoe Semibold is missing. Your text might look different. ● PowerPoint PPT: The animation between slides was different. ● PowerPoint PPTX: When the PPT file was opened with Keynote, a Presentation Import Warnings dialog appeared with the following messages: <ul style="list-style-type: none"> ○ 2 fonts are missing. Your text might look different. ○ Movies aren't supported and were removed. ○ Start and stop movie builds were removed. ○ All emphasis builds were removed. ○ Build order was changed on one or more slides. ● PowerPoint PPTX: The fonts were colored but not in the gradient way of the original. ● PowerPoint PPTX: The slide 4 animations were out of order and in some cases missing. ● PowerPoint PPTX: The slide 8 picture colors

Fujitsu STYLISTIC Q702 (with Microsoft Office)	Apple iPad (with Quickoffice Pro HD)	Apple iPad (with Apple Pages, Numbers, and Keynote)
		<p>were incorrect, i.e., original orange boxes were presented as green or red boxes.</p> <ul style="list-style-type: none"> • PowerPoint PPTX: The slide 24 animations did not blink as they were supposed to. • PowerPoint PPTX: Slide 26 hyperlinks were not underlined.

Figure 12: Compatibility issues when working with multiple file types originating from a USB flash drive.

APPENDIX C - HOW WE TESTED

Scenario 1 – Remote access: Connecting to the VPN and participating in a video conference

Performing this test on the Fujitsu STYLISTIC Q702

1. From the Windows Start screen, find the Cisco VPN client software tile.
2. Simultaneously start the timer and connect to the VPN.
3. Stop the timer when the connection has been made. Note any issues.
4. Using Windows Explorer, browse to the test directory.
5. Simultaneously start the timer and open the Word DOCX over the VPN.
6. Stop the timer when the document has been opened. Note any issues.
7. Simultaneously start the timer and perform the following:
 - a. On page 1, insert and type Today's in front of Conference Agenda.
 - b. Change the Wednesday Registration start time from 8:00 am to 8:30 am.
8. Stop the timer when the above steps have been performed and the file has been saved back to the network by pressing the Save icon. Note any issues.
9. Simultaneously start the timer and save the file locally by performing the following steps:
 - a. Press File→Save As.
 - b. Select Documents and press Save.
10. Stop the timer when the document has been saved locally to the tablet. Note any issues.
11. From the videoconferencing host system, send a WebEx invitation to the test tablet.
12. On the tablet, open Outlook.
13. Simultaneously start the timer and connect to the WebEx conference by performing the following steps:
 - a. Click the WebEx invitation link.
 - b. Enter the name and email address fields.
 - c. Select Call Using Computer.
14. Stop the timer when the tablet has joined the conference call. Note any issues.

Performing this test on the Apple iPad

1. From the Home screen, press the Settings application.
2. Simultaneously start the timer and connect to the VPN, by sliding the VPN switch to ON.
3. Stop the timer when the connection has been made. Note any issues.
4. Using the FileBrowser application, browse to the test directory.
5. Using Quickoffice Pro HD:
 - a. Select the Word DOCX file.
 - b. Simultaneously start the timer and select Open In.
 - c. Choose Quickoffice.
 - d. Stop the timer when the document has been opened. Note any issues.
6. Using Pages:
 - a. Select the Word DOCX file.
 - b. Simultaneously start the timer and select Open In.
 - c. Choose Pages.
 - d. Stop the timer when the document has been opened. Note any issues.
7. Using Quickoffice Pro HD:
 - a. Simultaneously start the timer and perform the following:
 - i. Because the title is missing, on page 1, insert and type using Trebuchet MS size 26 font Today's Conference Agenda.
 - ii. Change the Wednesday Registration start time from 8:00 am to 8:30 am.

- iii. Press Close.
 - iv. Press Save Back.
 - v. Press Open in FileBrowser.
 - vi. Press Replace.
15. Stop the timer when the above steps have been performed and the file has been saved back to the network. Note any issues.
16. Simultaneously start the timer and save the file locally by performing the following steps:
 - a. Select the newly saved Word DOCX file.
 - b. Select Open In.
 - c. Select Open In Quickoffice.
 - d. Type "A" and then delete it. (This is necessary to bring up the save prompt when the document is closed.)
 - e. Press Close.
 - f. Press Save As.
 - g. Press Save.
17. Stop the timer when the document has been saved locally to the tablet. Note any issues.
18. Using Pages:
 - b. Simultaneously start the timer and perform the following steps:
 - i. Because it is not possible to edit the Title box, on page 1, insert and type using Trebuchet MS size 24 font Today's Conference Agenda.
 - ii. Change the Wednesday Registration start time from 8:00 am to 8:30 am.
 - iii. Press Documents.
 - iv. Press Edit and select the Word DOCX document.
 - v. Press the Action toolbar button in the top left corner, and select Open in Another App.
 - vi. Choose the Word option.
 - vii. Press Choose App.
 - viii. Select Open In File Browser.
 - ix. Press the Action toolbar button, and select Paste 1 file here.
19. Stop the timer when the above steps have been performed and the file has been saved back to the network. Note any issues.
20. Simultaneously start the timer and save the file locally by performing the following steps:
 - a. Select the newly saved Word DOC file.
 - b. Select Open In.
 - c. Select Open In Pages.
 - d. Press Done, when the Document Import Warnings dialog appears.
21. Stop the timer when the document has been saved locally to the tablet. Note any issues.
22. From the videoconferencing host system, send a WebEx invitation to the test tablet.
23. On the tablet, open Mail.
24. Simultaneously start the timer and connect to the WebEx conference by performing the following steps:
 - a. Click the WebEx invitation link.
 - b. Enter the name and press OK.
 - c. Select Connect using Internet.
25. Stop the timer when the tablet has joined the conference call. Note any issues.

Scenario 2 – Collaborating with multiple file types

Performing this scenario on the PC

1. Simultaneously start the timer and insert the USB flash drive into the tablet.
2. Select the eight document files, and copy them to the Documents directory.
3. Stop the timer when the files have been copied to the tablet.
4. Simultaneously start the timer and open the ExcelXLS file.
5. Stop the timer when the ExcelXLS file has been opened. Note any issues with the document.
6. Simultaneously start the timer and edit each file:
 - a. For the Excel files, highlight cell A1 in yellow, and enter 0011 in cell B2.
 - b. For the Word files, delete the second paragraph on page 3, highlight the third paragraph on page 3, and add the comment “I like this paragraph.”
 - c. For the PowerPoint files, add the word “More” to the second slide’s header.
7. Stop the timer when the file has been saved after each file has been edited as outlined above.
8. Repeat for each of the remaining test files, noting any issues.
9. Simultaneously start the timer and copy the shared XLSX1 file to the network share.
10. Stop the timer when the file has been copied to the network. Note any issues.
11. With the file opened on a different networked PC, simultaneously start the timer and open and edit by highlighting cell A2 in Red, and entering 0015 in cell B3 the shared XLSX1 file.
12. Stop the timer when the file has been saved after having been edited as outlined above. Note any issues.

Performing this scenario on the iPad

1. This test requires a separate PC with Dropbox installed on the PC and on the iPad.
2. Simultaneously start the timer and insert the USB flash drive into the separate PC.
3. Select the eight document files, and copy/paste them to the Dropbox directory.
4. Open the Dropbox application on the tablet, and stop the timer when the Dropbox files appear on the tablet.
5. For Quickoffice Pro HD:
 - a. Simultaneously start the timer and open the ExcelXLS file, using the Open In Quickoffice option.
 - b. Stop the timer when the ExcelXLS file has been opened. Note any issues with document.
 - c. Simultaneously start the timer and edit each file:
 - i. For the Excel files, highlight cell A1 in yellow, and enter 0011 in cell B2.
 - ii. For the Word files, delete the second paragraph on page 3, highlight the third paragraph on page 3, and add the comment “I like this paragraph.”
 - iii. For the PowerPoint files, add the word “More” to the second slide’s header.
 - d. Stop the timer when the file has been saved after each file has been edited as outlined above.
 - e. Repeat for each of the remaining test files, noting any issues.
 - f. Simultaneously start the timer and on a separate PC go to the Quickoffice web address displayed at the bottom of the Quickoffice screen.
 - g. Download the shared XLSX file to Downloads.
 - h. Copy the XLSX to the network share.
 - i. Stop the timer when the file has been copied to the network. Note any issues.
 - j. With the file opened on a different networked PC, go back to tablet, and simultaneously start the timer and open FileBrowser.
 - k. Select the XLSX file, and open in Quickoffice.
 - l. Edit the file by highlighting cell A2 in Red, and entering 0015 in cell B3 of the shared XLSX1 file.
 - m. Press Close, and press Save Back.
 - n. Select Open In File Browser.
 - o. Select Save a copy.

- p. Stop the timer when the file has been saved after having been edited as outlined above. Note any issues.
6. For Numbers:
- a. Simultaneously start the timer and open the ExcelXLS file, using the Open In Numbers option.
 - b. Stop the timer when the ExcelXLS file has been opened. Note any issues with document.
 - c. Simultaneously start the timer and edit each file:
 - i. For the Excel files, highlight cell A1 in yellow, and enter 0011 in cell B2.
 - ii. For the Word files, delete the second paragraph on page 3, highlight the third paragraph on page 3, and add the comment "I like this paragraph."
 - iii. For the PowerPoint files, add the word "More" to the second slide's header.
 - d. Stop the timer when the file has been saved after each file has been edited as outlined above.
 - e. Repeat for each of the remaining test files, noting any issues.
 - f. Simultaneously start the timer and open Numbers.
 - g. Press Edit, and select the XLSX spreadsheet.
 - h. Press the Action toolbar button in the top left corner, and select Open in Another App.
 - i. Choose the Excel option.
 - j. Press Choose App.
 - k. Select Open In File Browser.
 - l. Press the Action toolbar button, and select Paste 1 file here.
 - m. Stop the timer when the Excel XLSX file has been saved to the network file share. Note any issues.
 - n. With the file opened on a different networked PC, simultaneously start the timer and open and edit by highlighting cell A2 in Red, and entering 0015 in cell B3 of the shared XLSX1 file.
 - o. Stop the timer when the file has been saved after having been edited as outlined above. Note any issues.

APPENDIX D – TEST FILE CHARACTERISTICS

Scenario 1 – Connecting to the VPN and participating in a video conference

- Conference Agenda Word DOCX: a 148 KB Word document consisting of 3 pages and 344 words with Tables, Charts, and colored formatting.

Scenario 2 – Collaborating with multiple file types

- Excel XLS: a 404KB Excel file consisting of 11 columns and 1,754 rows with several formulas and calculations
- Excel XLSX1: a 2.7MB Excel file consisting of 68 columns and 8,260 rows with no formulas or calculations
- Excel XLSX2: a 177KB Excel file consisting of 11 columns and 1,754 rows with several formulas and calculations
- PowerPoint PPT: a 1.18MB PowerPoint file consisting of 18 slides with slide animations and movies
- PowerPoint PPTX: a 2.23MB PowerPoint file consisting of 28 slides with slide animations and movies
- Word DOC: a 261KB Word document consisting of 18 pages and 7,590 words
- Word DOCX1: a 206KB Word document consisting of 18 pages and 7,588 words with changes tracked that has been lightly edited with deletions and an added comment
- Word DOCX2: a 1.9MB Word document consisting of 10 pages and 2,828 words with several charts and tables.

APPENDIX E – SAMPLE WORD DOCUMENT PAGE RENDERING

Intel Core i5 vPro processor-based tablet

YOUR LOGO
HERE

Conference Agenda

2004 Conference and Expo, New York

Track 1	Growth in the New Millennium
Track 2	Sales and Marketing
Track 3	Quality Assurance
Track 4	Tools and Resources

MONDAY, January 19, 2004

8:00 am - 4:00 pm	Registration				
9:00 am - 10:30 am	Exhibits Open	Opening Ceremonies Keynote Address: Steven H. <u>Kastner</u> , Breakthroughs for the Next Generation (Grand Ballroom)			
10:45 am - 12:00 pm		Managing and Motivating Employees (North Hall)	Tips for Increasing International Sales (South Hall)	Quality vs. Deadline (East Hall)	Build It or Buy It? (West Hall)
12:00 pm - 1:30 pm		Lunch Break			
1:30 pm - 3:00 pm		Maximizing Your Building Space (North Hall)	Competing with Big Corporations (South Hall)	Learning from Past Mistakes (East Hall)	Managing Contract Work (West Hall)
3:15 pm - 5:00 pm		Afternoon Workshops			

TUESDAY, January 20, 2004

8:00 am - 4:00 pm	Registration				
8:00 am - 9:00 am	Continental Breakfast				
9:00 am - 10:30 am	Exhibits Open	Keynote Address: Linda Contreras, Improving on a Good Idea (Grand Ballroom)			
10:45 am - 12:00 pm		Recycling and Upgrading Your Equipment (North Hall)	The High Cost of Advertising (South Hall)	Delivering World-Class Products (East Hall)	Keeping Up with Technology (West Hall)
12:00 pm - 1:30 pm		Lunch Break			
1:30 pm - 3:00 pm		Remodeling Within Your Budget (North Hall)	Sell, Sell, Sell! (South Hall)	Building In Quality from the Ground Up (East Hall)	Improving Performance (West Hall)
3:00 pm - 3:30 pm		Afternoon Break			
3:30 pm - 5:00 pm		Raising Venture Capital (North Hall)	Marketing to Specific Demographics (South Hall)	Raising the Quality Bar (East Hall)	Deciding Whether to Update Your Tools or Build New Ones (West Hall)
5:15 pm - 7:00 pm	Evening Presentation and Dinner (Grand Ballroom)				

iPad using Quickoffice

MONDAY, January 19, 2004

8:00 am - 4:00 pm	Registration				
9:00 am - 10:30 am	Ex hi bit s Op en	Opening Ceremonies Keynote Address: Steven H. Kastner, Breakthroughs for the Next Generation (Grand Ballroom)			
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3:15 pm - 5:00 pm		Afternoon Workshops			

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3:30 pm - 5:00 pm		Raising Venture Capital (North Hall)	Marketing to Specific Demographics (South Hall)	Raising the Quality Bar (East Hall)	Deciding Whether to Update Your Tools or Build New Ones (West Hall)

Conference Agenda

2004 Conference and Expo, New York
Text

MONDAY, January 19, 2004

8:00 am - 4:00 pm	Registration				
9:00 am - 10:30 am	Opening Ceremonies Keynote Address: Steven H. Kastner, Breakthroughs for the Next Generation (Grand Ballroom)				
10:45 am - 12:00 pm	Exhibits Open	Managing and Motivating Employees (North Hall)	Tips for Increasing International Sales (South Hall)	Quality vs. Deadline (East Hall)	Build It or Buy It? (West Hall)
12:00 pm - 1:30 pm		Lunch Break			
1:30 pm - 3:00 pm		Maximizing Your Building Space (North Hall)	Competing with Big Corporations (South Hall)	Learning from Past Mistakes (East Hall)	Managing Contract Work (West Hall)
3:15 pm - 5:00 pm	Afternoon Workshops				

TUESDAY, January 20, 2004

8:00 am - 4:00 pm	Registration				
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12:00 pm - 1:30 pm		Lunch Break			

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