:: **Refereed Article A1:**

iPads and the paperless office: The impact of tablet devices on paper consumption in higher education

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Abstract

The idea of the paperless office was foreseen almost forty years ago, but even with
the growing ubiquity of PC technologies the paperless office has not yet become a
reality. However new tablet devices, such as the Apple iPad offer the potential to
make this prediction come true. This is particularly relevant for higher education
establishments who are traditionally heavy users of paper, which forms a large part of
their carbon footprint.

One of the strategies to reduce paper consumption has been to promote the use of
tablets. This paper reports on an exploratory study that examines the use of tablet
devices to determine whether they can make a significant impact on paper
consumption and the reasons behind that impact, by interviewing academic staff who
regularly use Apple iPads. It was found that though tablets do reduce paper
consumption, they have not yet made the paperless office a reality. Tablets have
affordances that enable the reduction of paper consumption to a greater extent than
other digital technologies, but their limitations caused participants to resort to paper
for many tasks, which meant that devices were not used to their full potential. This
research provides guidelines for organisations planning to adopt tablets on how to
address their limitations, for example by providing training, to ensure that the use of
tablets maximises paper reduction.

Keywords

iPad, tablet, paperless office, higher education, carbon footprint

1. Introduction

The "paperless office" was predicted in 1975 in the Business Week article "The Office
of the Future", where George Pake suggested that the office would be revolutionised
with electronic terminals in lieu of paper (Business Week, 1975). This idea of
becoming paperless has become increasingly important. The cost of using paper can
be high to an organisation, and many organisations want to reduce their

environmental footprint and benefit from the improved image and increased social legitimacy by taking actions to become more sustainable (Jenkin, Webster, & McShane, 2011; Sellen & Harper, 2002).

Since Pake's prediction that digital technologies would replace the role of paper, thereby enabling the paperless office, many generations of digital technologies have been introduced such as the personal computer (PC). However, Pake's prediction has not yet been realised, as these technologies have not made a significant impact on paper consumption. Paper is still a highly prevalent resource in the workplace and statistics suggest that paper consumption has continued to rise over the last few decades (McCormack, 2011).

Despite being labeled as a myth, it is still hoped that the paperless office can become a reality (Carr, 2005). The ability to achieve the paperless office is potentially increasing as technologies evolve. In 2010, Apple released the iPad tablet computer, and since then many organisations such as local and national government committees, police and airlines have been using the iPad to reduce their consumption of paper, demonstrating that iPads, and other similar tablet devices, have the potential to enable the paperless office (Apple Inc., 2012a; Easton & Torrie, 2012; Geyer & Felske, 2011).

Universities are becoming increasingly aware of their carbon footprint, and developing environmental policies to reduce it (Gattiker, Lowe & Terpend, 2012). Paper forms a significant part of the carbon footprint in higher education, and reducing paper consumption is a key part of environmental policy for many institutions (Clark University, nd). Some paper reduction can be achieved in activities directly related to teaching and learning, but a significant amount of paper is also used in administrative activities such as faculty board meetings and research committee meetings. The issue of how to reduce paper use in those administrative and management activities is the focus of this article.

Although there are many studies comparing paper use with digital technologies, the number of studies researching the use of the iPad, and other similar tablet devices, to reduce paper consumption is limited. Existing studies have reported the advantages and disadvantages of tablets, but do not focus on explaining their implications for the paperless office. This study aims to determine whether tablet devices can reduce paper consumption in the office and provide insights into how tablets can be used to create a paperless office, as well as exploring potential limitations that could prevent tablets from making the paperless office a reality.

2. Literature Review

To explore the potential of tablet devices such as the iPad to enable the paperless office, the concept of affordances will be used to examine and compare paper with tablets, using the iPad as an example. Gibson proposed the concept of affordances in 1977, referring to the term as an action possibility of an object available to an individual, independent of their experience, knowledge, culture, and ability to perceive that possibility (Gibson, 1977; McGrenere & Ho, 2000). Norman (1988) added the dimension of perception to the concept, arguing that an affordance depends on an individual's perception of an object and is influenced by their knowledge, experience and culture (McGrenere & Ho, 2000; Norman, 1988). For example, the iPad has the action possibility of pinching the screen to zoom in and out of documents. However, this action possibility is only an affordance if an individual perceives or has knowledge of that action possibility. Norman's concept of perceived affordances will be adopted in this study as it is perceived affordances that better determine usability (McGrenere & Ho, 2000).

2.1 The Affordances and Limitations of Paper

Paper is still widely used because, despite its limitations, it is the best tool for many tasks. The affordances and limitations of paper will be examined to determine why this is.

Affordances of paper relating to the retrieval of information include flexible and easy navigation through the contents of a document; interweaving between reading and writing, where people can switch quickly between the tasks of reading and writing, for example, taking notes while reading through a document; and the ability to lay out information in space, where paper documents can be placed side by side which affords glancing back and forth to refer to multiple documents (Golovchinsky, 2008; Sellen & Harper, 2002).

Paper also affords annotation with notes and highlighting. Paper gives tactile feedback while writing on, and supports joint viewing and annotation in face-to-face scenarios (Frohlich & Perry, 1994; Golovchinsky, 2008; Sellen & Harper, 2002).

Paper is lightweight, does not require power, and large pieces of paper can be folded up. This affords portability as paper can be used anywhere and anytime. Lastly, paper is a tangible and persistent object, giving affordances of being able to grasp and smell the paper, and to feel the length of a document (Sellen & Harper, 2002). Its persistent presence (for example on a desk) can be used for quick access to information or to reflect on tasks that need attention (Frohlich & Perry, 1994; Seong, Lee, & Lim, 2009). It can also be used as a communication medium when delivered to other people, and the physical delivery of a paper document to someone can be an excuse for a discussion (Frohlich & Perry, 1994; Golovchinsky, 2008; Sellen & Harper, 2002).

On the negative side paper has a symbolic limitation of being perceived as old fashioned, untidy, and environmentally harmful (Sellen & Harper, 2002; York, 2006). Cost limitations refer to the accumulated cost of a paper document, and include delivery, filing, storage, and retrieval (Sellen & Harper, 2002). Interactional limitations refer to what paper does not afford. Paper documents need to be delivered physically, which can take time and money, and they are difficult to edit and replicate (Sellen & Harper, 2002).

Despite its limitations, its affordances mean that paper is the best choice for many tasks, and it is used heavily in workplaces (Jenkin et al., 2011; Sellen & Harper, 2002; York, 2006). In addition, paper has also coevolved with work practices, and changing these work patterns within existing social, technological and cultural contexts is difficult (Sellen & Harper, 2002; Seong et al., 2009). The affordances and limitations of paper are summarised in Table 1.

Table 1. Affordances and limitations of paper

Affordances	Limitations
- Flexible navigation - Interweaving between reading and writing - Lay out information in space - Annotation - Portability - Tangibility	- Symbolic (old fashioned, untidy, environmentally harmful) - Cost - Interactional limitations (needs physical delivery, difficult to edit or replicate)

2.2 The Affordances and Limitations of the iPad

In April 2010, the Apple iPad, a new generation of tablet computer, was released. Studies that have examined the use of iPads in the workplace have found that they are well perceived and have many advantageous affordances in addition to the affordances they inherit from more established PC technologies such as supporting the storage of many documents in a small space, reducing costs and enabling dynamic interactions with documents (Hess & Jung, 2012; Marmarelli & Ringle, 2011).

The iPad has usage affordances; its operating system, iOS, is designed to match the hardware and its touch interface, so provides a well-integrated system affording reliability and ease of use. iOS also allows instant access to the device as it immediately wakes up from sleep (Hess & Jung, 2012). Lastly, iOS supports the installation of apps from the Apple App Store, which provide additional usage

affordances for the iPad such as productivity or connectivity tools (Apple Inc., 2012b).

The iPad also has technical affordances; an iPad is lighter and smaller than PC technologies and so affords portability on a level much closer to paper. It can be held in the same portrait orientation as a paper document (Pearson & Buchanan, 2010). Its relatively long battery life adds to the portability and flexibility of the device as it can be used wirelessly for long periods of time (Marmarelli & Ringle, 2011).

The direct-input touch interface is a more natural form of input, allowing users to interact with the iPad in a more similar way to paper. However, it is argued that this gestural based interface causes poor usability because of the inconsistency and lack of visibility of those controls (Norman & Nielsen, 2010). However, once a user gains familiarity, the interfaces appear to be intuitive and joyful to use (Hess & Jung, 2012).

The iPad has social affordances; it is able to lie flat on a table like a sheet of paper, as opposed to a laptop screen that stands upright, creating a barrier between people (Hess & Jung, 2012; Marmarelli & Ringle, 2011). The iPad is also perceived as a status symbol and something that people are proud to use (Hess & Jung, 2012).

The iPad faces several limitations, many of them being similar to the limitations of other digital technologies. These have the potential to reduce the iPad's ability to enable the paperless office. These limitations include frequent battery recharging, and glare and eyestrain from the screen. In addition, being a multi-purpose device, it can give rise to distractions when in use (Marmarelli & Ringle, 2011; Seet & Goh, 2012).

Limitations that are unique to the iPad include the virtual on-screen-keyboard which is perceived as awkward to type on (Chaparro et al., 2010). There are physical keyboards available as accessories for the iPad but they add to the bulk of the device (Marmarelli & Ringle, 2011). As many of the iPad's affordances depend on apps downloaded from the App Store, they may not be obvious to the user because they are required to search for or have knowledge of the app. This adds to Norman and Neilsen's (2010) argument that the iPad's interface has hidden features that make the iPad less intuitive to use. Lastly, the iPad does not afford an expansion in storage space and does not have a USB port, so relies on cloud computing or synchronisation with a PC for managing files (Marmarelli & Ringle, 2011). The iPad has a lack of a unified file system meaning the same file has to be stored multiple times on the iPad for each application to use, further limiting the iPad's storage space (Marmarelli & Ringle, 2011). The affordances and limitations of the iPad are summarised in Table 2.

Table 2. Affordances and limitations of the iPad

Affordances	Limitations
• Well perceived • Integrated, easy to use software • Good form factor • Direct touch input • Large amount of apps • Affordances in common with the PC • e.g. dynamic documents, connectivity • Social (well perceived, suitable for use in meetings)	• Awkwardness with virtual keyboard • Limited storage and file management • Hidden features • Limitations in common with the PC • e.g. battery life, eyestrain

3. Research Methodology

Despite its limitations, the iPad has been used to eliminate paper in many cases, and its affordances better match the key affordances of paper. Most of the affordances of iPads would also apply to other tablet devices, however this research looked specifically at the iPad. Despite past studies which have looked at the iPad's affordances and limitations, little research has been carried out on the ability of the iPad to enable the paperless office. The implications of the iPad's affordances and limitations on paper consumption have not been covered well by previous literature.

Therefore the research questions are:

RQ1: *Does the iPad reduce the consumption of paper, enabling the paperless office?*

RQ2: *How and why does the iPad's impact on paper consumption occur?*

The units of analysis for this study were academic staff members at Victoria University of Wellington's School of Information Management (SIM). As a university aiming to reduce paper consumption, this was a suitable site for the study. Academic staff were chosen for this study as they are knowledge workers, who typically consume large amounts of paper through tasks such as teaching, research and administration. Many SIM academic staff use iPads for work purposes, some having been given iPads from SIM as their administrative responsibilities are paper intensive, other academic staff having purchased their own iPads. Six participants were chosen, all had been using the iPad for work purposes for at least three months, which ensured that they had the chance to become familiar with the iPad, embed it into their work processes, and had good insight into the advantages and disadvantages of the iPad in their workplace. While this is a limited sample size the participants selected had a wide range of roles, and six participants where considered sufficient for an initial exploratory study. It does mean that the generalisability of the findings is limited and further research would have to be carried out in a wider variety of settings in order to confirm the initial findings,

Table 3. Categorisation of codes into themes

Deductive theme from literature	Inductive codes	New theme
Integrated, easy to use software	• Confidence in use • Easy access	Ease of Use
Affordances in common with the PC (dynamic documents, searchable documents)	• Connectivity • Searchable documents • Interactive documents • iPad accessories	Other Affordances
Hidden Features	• Not intuitive, hidden features • Need to find the right apps • Training insufficient • Own effort needed to learn	Training and Learning
Awkwardness with virtual keyboard	• Hard to comment and annotate • Pen more precise than stylus • Virtual keyboard	Input and Annotation
New theme not covered in literature	• Policy	Policy

Data collection involved qualitative semi-structured interviews. The interview protocol is included as appendix one. After the interviews had been transcribed and checked by participants, the interview transcripts were analysed. This involved a series of iterative steps to reduce and understand the data (O'Leary, 2010). The data analysis integrated inductive and deductive approaches. The first step was to code and reduce the data using an inductive approach. An inductive approach aims to discover themes from the data using the following approach; each idea mentioned by the participants in the interview transcripts was given a code (Bradley, Curry, & Devers, 2007). Subsequent ideas were either allocated an existing code, or given a new code if they represented an idea that hadn't already been covered. This process resulted in forty-four granular codes. This process was then combined with a deductive approach to build broader themes (O'Leary, 2010). This approach used the themes identified from the literature review to verify the codes and inform the conceptualisation of the broad themes (O'Leary, 2010). An example of this process is shown in Table 3. As a result of this process 20 new themes were identified, which combined elements from both the research and the literature review.

4. Discussion

The new themes were used to answer the two research questions. The results of the study were also compared with previous research identified in the literature review.

4.1 Does the iPad Reduce the Consumption of Paper, Enabling the Paperless Office?

Participants felt that the iPad led to some reduction in paper consumption but this reduction was not as significant as expected. Therefore, the iPad did not appear to enable the paperless office, with participants reporting that large amounts of documents were still being printed.

"My iPad has saved the University lots of money...No, it won't eliminate all of the paper from my office but it does make a significant difference."

Although previous literature did not focus on paper consumption, the affordances identified by the literature and the reports of organisations purchasing the iPad to eliminate the use of paper gave the impression that the iPad would have a more significant impact on paper consumption. It was suggested that the iPad had affordances that better match the affordances of paper compared to other digital technologies. This suggests that the scope of previous studies may not have been enough to identify limitations of the iPad that lead people to use paper instead. For example, Marmarelli and Ringle (2011) reported significant paper savings in their study of the iPad, but only examined students and their printing of course materials, while this study examined academic staff who dealt with multiple types of documents.

Participants reported that the iPad mostly saved them from printing short-term, read-only documents, such as meeting papers while longer documents and documents needing to be distributed to others were still printed.

"What it does is that it eliminates paper that I print just for a meeting and then I would dispose of it. It eliminates paper that is needed for a very short time."

"I tend to print things that I need to engage with more, or things that I want to be able to compare. With paper you can have three things and look at them at once and compare."

This suggests that the iPad is mostly seen as a reading device, which saves people from printing documents that would otherwise be printed out and disposed of a short time later.

Another finding was that participants who purchased the iPad themselves reported using the device for a more diverse range of documents, leading to a greater level of paper reduction. Participants who were given the iPad from the workplace tended to only use it for the purpose they were given it for, which was for committee meeting documents. This is because participants who were given the iPad felt that they did not have time to experiment with using it outside of the use that it had been purchased for, while participants who bought the iPad personally had the motivation to experiment with the device in several areas of their work. It appears that those participants, who did not actively choose the iPad, restricted their use of the iPad to viewing committee meeting documents as this was the reason the iPads had been acquired for them.

"I know that other people spend a lot of time playing around with lots of the apps and experimenting with what they can do with it. I just don't have time. Neither do I have the inclination."

Organisations adopting the iPad should encourage users to experiment with using the iPad in different aspects of their work. The use of documents that are specifically designed for reading on tablet screens is also likely to overcome some of the issues mentioned by participants.

4.2 How and Why Does the Impact on Paper Consumption Occur?

The iPad was able to make an impact on paper consumption because compared to

other digital technologies, the iPad better matches the affordances of paper. The affordances of portability, quality screen, and affordances gained from apps were both discussed in the literature and confirmed by participants.

"The only time I carry a bag is to carry this [the iPad], that's the only thing that's in my bag. Usually before I had an iPad, I had several documents that I would bring along all the time back and forth between the office and work."

"When I get tired I can change the scale of the documents that I'm reading which is really good...being able to expand out a font is actually a brilliant thing."

"I also use the iPad to take down notes. I use an app called Penultimate...to write down notes rather than having a full paper pad."

These similarities were not surprising as the iPad fills a gap between a laptop and smartphone in terms of portability and screen size, and the app store is marketed as an important feature of the iPad. Searchable and interactive documents were also affordances mentioned both by research participants and in the literature.

Participants mentioned ease of use, as the iPad was found to be a joy to use.

"I thought it would just be a toy to use at home and to read the news and surf the web. Afterwards when I look back it's a surprise."

However, Norman and Nielsen's (2010) argument about hidden features was also supported. Norman and Nielsen argued that the iPad's interface did not afford ease of use, as features of the touch-based interface were hidden and not obvious to users. This was evident in the results as participants had to overcome the barrier of learning these features, with some participants failing to overcome this barrier. This could be because the iPad is designed to be intuitive in the consumer market rather than in the workplace. However since the research has been carried out the situation has changed with standard versions of Microsoft Office software being made available for iPads in 2014, making it more suitable for workplace use. In most cases the iPad was given to the participants by their workplace, meaning they had little interest in learning about the iPad compared to participants who had actively chosen and purchased the iPads themselves. In addition to this no training was offered for participants.

"It's kind of up to everybody to figure out how to do things themselves and there doesn't seem to be a lot of coordination. So I suspect there is more potential but personally I don't have a lot of time to invest in figuring it out."

The issue of eyestrain (when reading long documents), data transfer and storage, and input limitations of the keyboard were both discussed in the literature and confirmed by participants. While the virtual keyboard was mentioned, the literature did not discuss the problems of annotating documents with annotation tools that were not precise when compared to pen and paper, though this issue was brought up by research participants.

"Sometimes it's a very long document I'll print it out...because sometimes it gets tiring reading it on the screen".

"I'm a touch typist so I don't like the keyboard on it, doesn't work for me."

"I think at the moment the annotation tools are quite chunky. For example, selecting, highlighting text on a document on the iPad is still kind of fiddly, you don't have the accuracy of being able to highlight a word or a phrase easily".

Based on these results, the issues of eyestrain, data transfer and storage and input appear to be key limitations of the iPad, preventing the iPad from matching some of the key affordances of paper. Therefore users need to take steps to work around and minimise these limitations. For example, one participant suggested the use of a centralised Dropbox account from which documents can be pushed onto the iPad. Users could also use more powerful document management apps such as GoodReader and iAnnotate, which can replicate the file structure of a PC. These suggestions can

reduce the data transfer and storage limitations of the iPad. In addition, app developers can take steps to reduce these limitations. For example, they can provide options within document reading apps to have "white text on black" to reduce eyestrain in reading long documents.

Affordances and limitations mentioned by participants that had not been previously discussed in the literature were mostly non-technological. This may have been because previous studies had focused more on the technology of the iPad rather than the factors supporting its use, such as training and policy. In addition, the methodology may have resulted in different findings, as it differed in the sense that previous studies used an experimental type methodology, while this study was conducted in a natural setting.

"I was given a really short guide. But that was it. And a list of apps that people have found useful. But again I would have had to look at them myself and it's just not something I'm particularly interested in and I don't particularly have a lot of time."

"The University insists on printed materials...In a thousand years it might change, but right now the management of the university...have extremely backward views of IT, and we have to work to them. And they demand paper."

"I think it's partly the way I work which means that paper is always going to be a part of it. I don't think there's anything that would change that would make me completely abandon paper."

The implications of these findings are that while the technology of the iPad is important, non-technological issues also need to be given attention. For example, when adopting the iPad, an organisation should consider not just the technological affordances and limitations of the iPad, but also address non-technological limitations such as training, policy, sharing documents and personal inertia. Organisations adopting the iPad may not be able to remedy its' technological limitations because they are up to hardware manufacturers and software developers to address, but organisations do have the ability to address non-technological limitations. An example of how organisations can address these issues is to offer training to adopters of the iPad. This would lead to a more coordinated and consistent set up of the iPad throughout an organisation, making it easier to offer support and allow staff to share tips and help each other with the use of the iPad. In addition, policies should support the use of electronic documents and the use of email or other electronic means should be encouraged for sharing and passing along documents.

Affordances and limitations relating directly to the technology have mostly already been identified in the literature. However, navigation, accessories and security were factors not previously mentioned. The difficulty of navigating between documents on the iPad is a key limitation, as it prevents the iPad from matching paper's affordance of flexible navigation.

"It took me a while to get used to going from one application to another application [on the iPad]."

Therefore, users of the iPad should be encouraged to use apps such as GoodReader, which has tabbed document browsing, and be trained to use multi-tasking gestures on the iPad, which allow users to switch between applications on the iPad by using touch gestures.

While accessories were not discussed in the literature, one participant felt that accessories were important in adding to the affordances of the iPad.

"One thing that I think is a prerequisite to be able to use the iPad in a very efficient way for work is not only the apps inside that are important but also the whole setup outside...So the stylus is very important, but also the case that I found."

This suggests that the iPad should not be considered as a standalone piece of technology. Users should consider accessories such as cases, keyboards and styli as part of a complete solution in using the iPad, as they can add to and enhance the

iPad's affordances.

In relation to security, one participant perceived the iPad as insecure.

My concern is that there's a lot more digital copies floating around and it's actually now up to the individuals to remember to go in to delete them. Cos basically once it's on here I have a passcode. But let's face it, that's not great security. So once it's on here, anybody could come along and have a look."

This may have been because they dealt with confidential documents on their iPad and did not have time to experiment with the iPad's features, meaning that they may not have discovered the more advanced security settings of the iPad. This limitation links back to training, which should be provided to make users aware of the iPad's advanced security options, such as the use of an advanced passcode and the ability to passcode protect the Dropbox app.

It appeared that the iPad had many more limitations than those previously identified in the literature review, and these limitations are likely to be contributing factors to the iPad not being able to reduce paper consumption to the anticipated level. Mostly the results were not surprising, as they validated the affordances and limitations identified in the previous literature. However, non-technological factors such as training, policy, sharing, and personal inertia were new findings that were not a focus of previous studies. This suggests that non-technological factors rather than just the technology itself need to be addressed when adopting the iPad, as they are likely to have a major impact on the iPad's ability to reduce paper consumption.

5. Conclusions

The paperless office is an important concept as organisations attempt to minimise paper consumption, reduce their environmental footprint and improve their corporate image. Digital technologies such as PCs and e-readers have so far not been able to make the paperless office a reality, one of the reasons for this is that they do not match the key affordances of paper. This study has looked at the iPad, a technology that has potential to enable the paperless office, to examine whether it makes an impact on paper consumption and why it makes that impact. Six academic staff at Victoria University of Wellington who used the iPad for work were interviewed. This study informs organisations (in particular universities, and organisations with knowledge workers) that want to reduce paper consumption by adopting the iPad. It describes the affordances and limitations of the iPad, which suggest areas where the iPad may or may not be effective. Organisations adopting the iPad should focus attention on and take advantage of its affordances, while working to minimise its limitations.

In this exploratory study the findings indicate that the iPad has not been able to reduce paper consumption to the level expected but it has been significantly better than other digital technologies in reducing paper consumption. It is well perceived, portable, easy to use, and its screen is well suited for reading documents. While tablet devices can bring organisations closer to achieving the paperless office, tablets have limitations that mean paper will continue to be part of the workplace, being the best choice for many tasks. Limitations include an inadequate file management system, input and annotation issues, and not being suitable for reading long documents.

It was not just the technology of the iPad itself that caused people to resort to paper for many tasks, but also non-technological factors surrounding the iPad such as lack of training, personal inertia, sharing, and policy. Therefore it is important that non-technological issues are addressed when adopting the iPad to ensure that it will be used to its full potential, thereby hopefully making a greater impact in reducing paper consumption.

In conclusion, the iPad has great potential for reducing paper consumption in the workplace. However it must be realised that paper will continue to be a part of the workplace for the foreseeable future. Overall, it is hoped the knowledge gained from this study can be used to improve the way organisations adopt the iPad in order to

reduce paper consumption and achieve better environmental sustainability.

Acknowledgements

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Appendix 1 - Interview Protocol

Topic 1 - Introduction

- What model of the iPad do you use for work purposes?
- When did you start using the iPad for work purposes?
- In general, how confident do you feel using your iPad?
- Did you buy the iPad personally or was it given to you to use by your workplace?
- Why did you purchase it?/For what reason did your workplace give you the iPad?

Topic 2 - Use of the iPad

- What are the main uses of your iPad?
- When and where do you use your iPad?
- What are the iPad apps you primarily use for work purposes?
- What accessories do you use with your iPad for work purposes?

Topic 3 - Affordances of the iPad

- What documents do you no longer print as a result of adopting the iPad?
- Do these documents need to be stored for certain periods of time?
- Why do you use the iPad for these documents?
- How does the iPad enable you to handle these documents electronically rather than with paper?
- Have you attempted to handle these documents electronically in the past? If so, why wasn't this successful?
- Do you perceive any other advantages of the iPad when using it for work?

Topic 4 - Limitations of the iPad

- Do you think the iPad is appropriate for the documents identified above? If not, why isn't the iPad appropriate?
- What documents do you still print?
- Why do you still print these documents?
- In the future, could you envisage not having to print these documents?
- What technological things would need to change in order for you to not have to print these documents?
- What non-technological things would need to change in order for you to not have to print these documents?
- Do you perceive any other limitations of the iPad when using it for work?

Topic 5 - Overall Impact of the iPad

- Do you perceive that the iPad reduces your overall consumption of paper at work?
  Why/Why not?
- Do you think that the iPad can eliminate or almost eliminate paper from your office?
  Why/Why not?
- Do you have any other thoughts about what has been discussed?

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