Extrapolating Future Computing Directions from Current Tablet Use

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CHI'13, April 27 – May 2, 2013, Paris, France.

Abstract
We report the findings of a research study in which we interviewed 22 iPad owners in a large metropolitan area of the United States and use those findings to motivate some wide-reaching implications for everyday computing. We identify three themes characterizing iPad. The first is what it means to our participants to own an iPad: motivations for purchase, expectations and realities of patterns of use, shared use of the device in the home. The second theme explores the role of location: 'comfortable computing' and the importance of connectivity. The third explores practices: content consumption and challenges with content creation, app discovery, and the desire for experiences that scale across device ecosystems. We then discuss three key areas for further design and research: comfortable computing, communal computing, the computer as media paradigm, and supporting creation that involves collection, curation, collage, annotation, and sharing.

Author Keywords
Tablet use; tablets; ipads; everyday computing.

ACM Classification Keywords
Human-centered computing → Tablet computers

Related work

Much previous work on tablets describes particular applications of tablet computing. For example, tablet computing has been used for note-taking, [8], as a sketching tool [9], or as a lab notebook for field biologists [21]. iPads have been described as a technology platform: as a multimedia controller [6], as a medical student tool [11], or for collaborative document reading [14]. [GoogleMobileHCI] provides mainly a statistical description of tablet use, but little extrapolation. We found no other open-ended studies. We were also inspired by the previous works exploring how people use existing technologies, such as Thayer et al. on colleagiate use of the Kindle [18] or boyd's work on teen use of social networks [1]. In all such work, the researchers face the same problems of studying and articulating commonalities of use given a small sample of a wide variety of users, a problem we grapple with in this paper. Our work also speaks to a set of work around the role of computing in the home in the home [2,4,13,17], and the tensions between leisure and work use of computing technologies.

Method, Participants & Devices

In this paper we explore how people are using their iPads to understand the reasons for the device's success, and to explore the opportunities for design, for design research, and for improved tablets.

We developed a recruitment, interview and analysis strategy for an ethnographically-inspired interview study to make the best use of the limited time and resources available for the study and yet provide us with insights into a wide variety of practices and users. We recruited 22 participants from a large metropolitan area of the United States. 22 people from a single city obviously cannot be a statistically valid sampling of the approximately 25 million iPad users in the world, but we did make a concerted effort to try and capture a wide variety of different users, including hiring a recruitment agency to avoid the biases that come from snowball sampling. Our participants – 11 men, 11 women – ranged in age from 14 to 55 and came from a wide variety of occupational backgrounds: homemaker, high school teacher, IT director at a local hospital, business analyst, landscape architect, valet driver, student, etc. All participants had owned their iPads for at least three months and, while the majority of users had personally purchased their iPad, four participants had been assigned the device by their employer. Although there were other tablet devices commercially available at the time of this study, running both Android and Windows, we specifically focused on iPad users because: 1) Apple was the clear leader in tablet market share at the time of this study, 2) the depth and breadth of the applications available for the platform was far greater than the other tablet device ecosystems.

Interviews

Teams of two researchers conducted ~2hr in-home, semi-structured interviews with each participant. One of the authors was present at all interviews, accompanied either by the other author, or by one of a rotating cast of engineers, designers, and researchers as part of a deliberate strategy to encourage engagement with the results of the fieldwork. Participants were compensated for their time. Interviews were video and audio recorded and consisted of a semi-structured series of open-ended questions followed by a tour of he participant's house to show us where they used their iPad. During the interviews, the authors took notes according to their own personal style; one typing extensive near-transcript notes, and the other drawing ideas and concepts on a sketchpad. The authors reviewed these notes and videos of the interviews separately, and then re-watched selected interviews together. In addition to sketched and typed notes, the authors generated a large number of sticky notes containing ideas and concepts while watching the videos. Those sticky notes were collated and generated into an affinity diagram, which were further revised and revisited resulting in the categories described in both the Findings and Implications sections of this paper.

FINDINGS

We divide our findings into three main areas. The first concerns the experiences of owning the iPad: the initial desire to purchase, how people fit the new device into their existing technology ecosystem, and how iPads were owned and shared. The second area is about the places people used their iPad: 'comfortable computing' in the home and the impact of 3G coverage on usage location. Finally, we discuss usage: the iPad's role as a

The interviews covered seven questions:

The Initial "Reason to Believe": Why did each individual user choose to own an iPad? What was their initial motivation for owning an iPad and did the device meet their initial expectations?

Common Contexts of Use: What locations did users find conducive to using this new device? What commonalities or patterns emerged around the contextual needs this device was serving?

Common Use Cases: Which activities and tasks did users find well suited for the iPad and why? Which activities and tasks did users find were not well suited for the iPad? Why?

The App Phenomenon: What apps were used on a regular basis? Which were favorites?

Is an iPad a Personal or Shared Device? Are iPads largely being used as personal devices with a clear owner or are they used as a shared resource among family members?

Benefits/Limitations of the Device: Are users satisfied with their iPads? What benefit has ownership brought to their lives and what are the limitations of the device?

Future State: What do users believe are the implications of the iPad to their future computing and information habits?

device for consumption and not creation, the role of apps, and the difficulties of transferring content to and from the iPad.

Owning an iPad: "It was an itch I had to scratch."

Several participants described themselves as "gadget" people and bashfully confessed the motivation to purchase the device was largely to satiate their curiosity about the experience.

I felt really lucky that my work gave me an iPad. But to be honest, I'm a gadget guy so if they hadn't given it to me I probably would have bought one for myself. I can't resist buying new gadgets. They're like shiny toys for me. ~ Trevor (This and all names are anonymized.)

Participants perceived the device as a luxury item and shared stories of how they had saved up money to purchase the device, or rewarded themselves with it.

I thought they (the iPad) looked neat. I just really wanted one so I saved my money for a couple months and bought one for myself. My husband kinda made fun of me about buying one saying how he thought it was a waste of money… but I'm the one laughing now because he always wants to use it. ~ Shelley

Owning an iPad: "I bought an iPad… now what?"

All participants in our study owned multiple other technological devices: PCs, laptop computers, smartphones, TVs and MP3 players in addition to their iPad. Three of our participants described themselves as "*Apple fanboy[s]*": they owned a Mac laptop, an iPhone, and other Apple products. For others the device was one of many in an ecosystem of devices from different vendors. Some found the iPad became a device in search of a niche.

I'm still trying to figure out exactly how to use it in an effective way for me… I found some applications I like on it, but often times my go-to is my laptop. So I'm trying to figure out with the iPad, the real niche it can serve for me. To be honest, after owning it for three months I haven't figured it that out yet. ~ Ramon

All participants in our study had both a mobile phone and access to at least one PC, desktop or laptop, and several participants admitted that while they were excited to purchase an iPad, they were unsure what to do with the device once they had it.

Initially I bought the iPad to replace the laptop. I've had it for three months and I dunno if it is a learning curve or if I'm just not willing to let go of my laptop. 90% of the time I still find myself going back to what I feel comfortable with – which is my laptop. ~ Daniel

Owning an iPad: It's mine but…

While participants in our study may have initially envisioned their iPad as a personal device, once purchased, it quickly became a shared resource in the home.

Nobody really 'owns' the iPad. We bought it for the house. It's like the TV. It belongs to both of us. ~ Norvin

The design of an iPad makes it an inherently social device: the lightweight form factor makes it easy to pass and share content. (However, as we'll discuss later, certain software design choices do not necessarily

Non Users Also Matter
Several of our interviewees realized after purchasing an iPad that many of their communication and information access behaviors were engrained into their daily routines. Truly integrating this new device into their ecosystem meant some of those behaviors would be modified or changed. Despite the financial investment, the behavior change component proved too difficult and their iPads were left largely unused.

To be completely honest with you, I haven't really opened up my iPad for the last… oh, I'd say 2 months. I guess I just have this way that I do things with my laptop and my iPhone and it's hard for me to change how I normally do things.. It's really a shame because I spent so much money on it." ~ Indrani

Indrani is an extreme in reporting that she hadn't used her iPad in two months, but her experience points to a real difficulty our users encountered. Some purchased the iPad expecting it would serve as a replacement laptop, but found themselves disappointed.

support that shared ownership.) Unlike a laptop screen that creates a wall-like barrier between a user and others, the iPad makes it easy for people to gather around a screen and have a shared experience without a strong sense of "ownership" over the device. Still, the iPad is built on the legacy of a computer as a personal device. Nearly all aspects of the device from security settings to the iTunes account model assume a 1:1 relationship between user and device. While some aspects of the iPad experience made it easy for users to share the device, most users encountered problems that forced them to stick with the intended 1:1 model for the device.

Both my wife and I use it. Although for certain things that's a little weird. Like email, Facebook, Flipboard… since those are more personal. We tend to organize the applications on the screen according to whose is whose. The iTunes account it's tied to is mine. So I guess it's mine. But… we both use it pretty equally. ~ Ramon

Location: Comfortable Computing
Although tablets are widely considered "mobile devices", the primary environment participants reported using their iPad was in their home. However, unlike a PC or laptop computer whose physical affordances lend themselves to sitting at flat, table-like surfaces, participants reported using an iPad was like curling up with a good book.

I like cuddling up downstairs in bed with Netflix on the iPad instead of sitting in front of the TV with the Dolby sound. Much more comfortable to go to bed with a movie the same way I used to go to bed with a book. ~ Norvin

The light and portable form factor combined with the intuitive touchscreen interface made the device a better option for casual content consumption in "soft surface" environments (in bed, on the couch in front of the TV, lounging in the backyard) than a PC or laptop.

It's almost like my blankie… I curl up in bed with it, I usually have it with me, regardless of extenuating circumstances. ~ Ian

Location: Connectivity Mattered
Several participants reported using their iPads in what would commonly be considered typical "mobile contexts" – in the car while waiting to pick up their kids from an activity, in the grocery store, or as a navigation aid while traveling. The type of access used to drive data consumption had a substantial impact on where participants used the device. There was a clear connection between participants who reported use in a variety of mobile contexts and iPads that were subscribed to a mobile data plan. Owners who relied solely on wireless internet connection to drive their data consumption tended to use the device primarily in the home.

I mostly use it at work or at home where there is a wifi connection. Occasionally I will use it on the commute to work. Sometimes I'm able to grab hold of a wifi signal from a commuter shuttle and knock out a few emails before I get into the office. It only has wifi access so where I use it is somewhat limited. ~ Tracy

Participants who had subscribed to data plan with a wireless service provider were far more "mobile" with their iPad – using it both in the home as well as contexts such as the bus, in the car, or while shopping.

Figure 1. Lilja's daughter uses the family iPad. Several participants in the study shared stories of how their young children played games on their iPad.

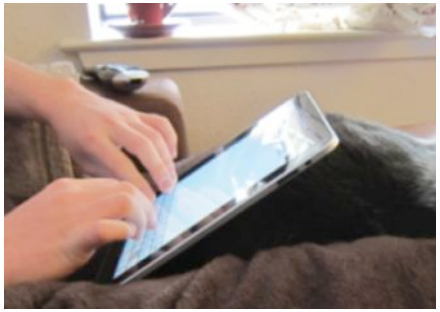

Figure 2. Ramon uses his cat as an iPad prop. Participants found their iPads well suited for "comfortable computing" in "soft surface" environments that easily support casual content consumption with some lightweight interactivity.

We've really struggled to figure out the best ways to use it here in the apartment. But it's great for traveling – we use it a lot when we go out of town for directions and for Yelp. I'm glad we got the plan with it because we aren't a slave to wifi anymore. We're connected anywhere we go. ~ Randy

Others, however, were less comfortable using the iPad in public spaces, as they felt it seemed like showing off using such expensive device in a supermarket:

I tried making a grocery list on the ipad… [Using the iPad at the supermarket] was a moment of great shame and embarrassment… [The iPad] is expensive and slightly obnoxious. ~ Angela

Practices: The iPad is for content consumption

Several participants in our study described themselves as "avid readers" and said that their primary purpose for purchasing an iPad was to save themselves from the hassle of lugging books around. However, these same participants admitted that after the iPad was brought into their device ecosystem, it was used for more than an e-reader. Participants were using the device to voraciously consume any and all types of content: email, books, content feeds from Facebook and Twitter, web sites, magazines, movies, tv shows, Youtube videos. For some, this content consumption itself introduced new patterns of use. For example, several our participants who hadn't expected to do so reported reading books on their iPads:

I never really read before. I haven't finished reading a book since sophomore year in high school. But the experience [of reading websites] translates. It feels like I'm reading text [on a website] instead of a book. ~ Jordan

Short of lightweight interactions, such as "liking" a friend's Facebook post or typing a brief email response, the majority of participants used their devices for content consumption and very little content creation. Several participants cited that a key barrier to content creation was the lack of a physical keyboard and mouse and that "getting used to" a touch keyboard had proved challenging. A clear and consistent issue that emerged amongst almost all participants was that while they were intrigued and even enamored with touchscreens, understanding how to engage with the things they wanted to do using this new computing paradigm proved challenging. They were still relating to a world that assumes a keyboard and mouse as the primary input mechanisms for computing. While several participants complained about the lack of a physical keyboard, only one of the participants had actually purchased a keyboard accessory to use in conjunction with the iPad. When describing applications, we found users were most interested in and excited to share experiences that were "unique" to the tablet, not a replication of the PC experience. One participant articulated the desire to understand this new paradigm best:

I think putting a physical keyboard on an iPad is a terrible idea. It defeats the point. It's a totally new device. People who do that want it to be a computer because they know what a computer is. iPads are different, they're not computers... they are something different. I think we're still trying to figure out what makes them different. That's part of the fun. ~ Kaleb

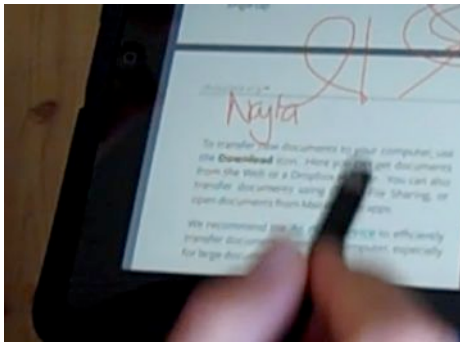

Figure 3. *"Typing out math equations is a real pain in the butt. It's time consuming, it's not natural, it's a nightmare. This stylus is awesome because it allows me to think through a math problem like I would using paper, only on the iPad. You just can't do that with a keyboard." ~ Nathalie*

Practices: Trying Apps as "kicking the tires"

A key part of every interview we conducted included asking each participant give us a tour of the applications currently loaded on their iPad. We were interested in understanding what applications they used most frequently, how they heard about apps, what motivated them to download or purchase an app, and what they saw as the key differences between free and paid apps. One thing we learned was that discovery of apps is difficult. For most participants, the Apple App Store is a labyrinth of apps with varying levels of quality and utility. One subject hypothesized that the layout of the App store was deliberately confusing:

I think they do that on purpose. Apple usually does their layout quite well but they haven't done it quite well so they're doing it on purpose. So that they can open up opportunities for other app developers that can package the UI… it encourages app developers to make an app to help you shop better. ~ Jordan

Participants reported that the most common way to become aware of an app is by browsing the app store, finding a free app, and trying it. One participant described this as "kicking the tires." Downloading an app did not necessarily mean using it more than once: nearly all of our interviewees had apps on their devices that they didn't use. A few participants had downloaded apps that reviewed and recommended other apps. Many participants had purchased apps and were happy to pay for an app if the perceived quality and utility was high. Flipboard, Epicurious, Netflix, Pulse, Evernote, Facetime, and were the most popular iPad applications amongst users in our study. Here we discuss three key apps: Epicurious, Netflix and FaceTime.

Several participants in our study had downloaded the Epicurious recipe application and were using the app with regularity on their iPads. The app itself was less interesting to our research team than the fact that three participants spontaneously demonstrated how they use the app on their iPad in their kitchen while they are cooking. These three participants enthusiastically modeled how they could easily prop up the device at eye level, move it to various surfaces in the kitchen, and noted how the touch UI made it easy to use in while cooking.

Netflix was a popular application for participants not so much for the utility of the application, but for the new types of environments users could experience the service. The light and portable form factor of the iPad made it a more comfortable device to bring to a restaurant or cuddle up with on the couch than a laptop. Netflix was particularly popular as a multitasking app, something that would play in the background as people did other things.

I… do artwork in the office and I'll watch Netflix... I've watched the iPad in the kitchen, with a movie on while cooking. ~ Shelley

Video capture on the iPad 2 also enabled several participants to video chat with family and friends using FaceTime. While many of these participants had used video chat software such as Skype, the form factor of the iPad combined with functionality of FaceTime provided an experience that participants felt was better than Skype.

I've used Skype but I prefer to use FaceTime on my iPad to keep in touch with my girlfriends. Sometimes

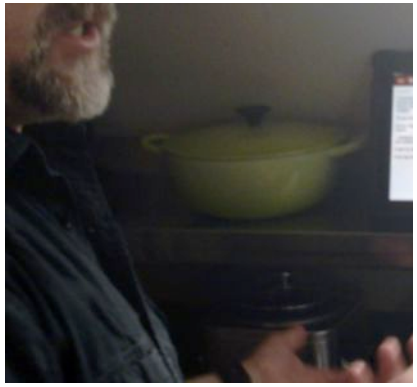

Figure. 5 Norvin demonstrates how he uses the Epicurious iPad application while he cooks in their kitchen.

Figure 6. Much as two friends watching a television program together through FaceTime, this screenshot depicts a bridesmaid attending a friend's wedding via an iPad.
Video by ette16 at http://bit.ly/pCZ1vm.

we'll watch a TV show together – I'll just set the iPad here on the coffee table and we can talk to each other while the show is on. It's cool because it's like she's here. ~ Lilja

Practices: iPad doesn't play well with other devices
A consistent complaint many users in our study articulated was the iPad's inability to interact seamlessly with other devices in a participant's ecosystem. The hassle of syncing the device to a computer for file transfer and the inability to simply "toss" or "flick" a piece of data from one device to another were repeatedly brought up by participants as an aspect to the iPad experience that could be improved.

The potential for multi-tasking on an iPad is huge. It could be SO much better. And I don't mean just on the device… I mean across all my devices. I wish I could just physically push what's on the iPad onto my laptop. It's kind of ridiculous that when two devices are physically close to each other, you can't easily move data between them. Sure, you can do it now, with Bluetooth or whatever, but who does that? It's completely NOT intuitive. ~ Ian

I use it to create shopping lists. I wish there was an easier way to do that because the keyboard isn't great on the iPad. I wish I could type it on my laptop and transfer it to the [shopping list] application on my iPad. But that's not easy to do currently. ~ Angela

Interviews revealed this desire for experiences that scale across devices is being met by some select services. Cloud-based services such as Netflix, Hulu, Dropbox and Pandora were mentioned throughout the interview process by several participants. These services were specifically praised for their ability to move easily and seamlessly through a device ecosystem. These services allow users to experience content convergence within their device ecosystem. We believe these experiences that are raising expectations about what might be possible with regard to how devices should interact with each other. Users are growing to expect that content as well as experiential aspects of the computing experience should scale across devices. Instead of relying on a cable or emailing themselves a file, users want to be able to easily and intuitively transfer data between two devices that are in close physical proximity to each other.

IMPLICATIONS

We believe this work implies three areas for future research and design in both tablet design and in other aspects of interactive systems. The stories participants shared suggested that while some people anticipate tablets will eventually replace personal computers, users are less interested in replacing their PC with a tablet and more interested in discovering the contexts of use that are particularly well suited for a tablet device. The iPad is not a better PC; it's a different animal entirely.

A Case for Comfortable Computing
The first implication of this new species of computing is the notion of comfortable computing. At the simplest level, we use 'comfortable computing' as an observation of the ways that people used their iPads while curled up in bed or sprawled on the couch. But we want to push this understanding further than simple observation. We see comfortable computing with the tablet as demonstrating *mutual reconfiguration* of the

Really!?
It is hard to find the right balance in articulating this phenomenon. On one hand, the iPad *is* clearly used for task-oriented purposes: balancing checkbooks, paying bills, responding to work email, and we don't want to pretend that those uses don't exist or that we didn't hear about them. But the stories we heard were overwhelmingly of a different kind, where the sense of sociality and intimacy was articulated in both the user's body and in their actions. Similar to the scenarios depicted in Weiser's seminal publication [16], notions of computing have long been grounded in the static context of the office. While this notion has helped make computing accessible, it has also constrained our expectations about the role computers can have in out lives. In the last 30 years, notions of computing have grown far beyond the confines of "the office." Widespread uptake of mobile devices coupled with easy access to wireless Internet connectivity has allowed computers to deeply infiltrate our daily lives, finding their way into our homes, our schools, our cars, and a host of other dynamic environments.

user's body and the device[14]. The user's body is configured by the device through the very affordances necessary to see and interact with it: the iPad must be within arm's length to touch the screen; it cannot stand up on its own so must be cradled in an arm or lap or propped up against a chair arm or kitchen wall. The visible effects of interaction are not 90° away and separated by the rest of the keyboard, but right under the user's finger. And likewise, the dominant uses of the device reflect this companionship and intimacy. Our participant Ian described his iPad as *'almost like my blankie'*, an object of companionship, comfort and succor, and we see that sense of comfort in the primary uses of the iPad, reaching out to social connectedness on Facebook, on Twitter, the storytelling of movies and TV shows on Netflix, conversations with loved ones on FaceTime.

Much of the current thought and discourse around human-computer interaction today assumes a very static model between users and their device. The human (user) is an agent with goals, plans, and intentions who achieves these goals (actions) with messages (interactions) conveyed through interfaces to computers. Under this assumption, the aim of HCI, then is to narrow the distance between human and machine to make the interface more transparent [16]. Suchman's theory of mutual reconfiguration suggests a person's capacity to act (their agency) is reconfigured when it comes into contact with another thing or person - that human action is constantly constructed and reconstructed from dynamic interactions with the material and social worlds [16]. As the boundaries between devices and interfaces continue to shift, this mutual reconfiguration is increasingly relevant to the design of mobile and multi-device experiences. Instead of viewing interaction as a static model between a person and device through an unfluctuating interface on a single device, it supports the need for a more fluid interaction model and interface that can constantly evolve and reform depending on the environment and social circumstances of the user, providing the opportunity to explore notions of computing that reflect a wider spectrum of human experiences than the impoverished singularity of the office context.

Communal Computing
The iPad plays as role as a device that exists in an interstitial space somewhere between the single user model of a cellphone and the multiple account model of a standard computer. This becomes problematic when one user adds their Microsoft Exchange account as a mail account, as the corporate system administrator can specify "Device Security Settings" requiring the user of any *device* used to access that Exchange account to enter a PIN code. The problem is that such device-based security procedures designed for a single-user device such as a smartphone do not fit well with the multiple-user single-iPad practices we observed. Indeed, as it requires any user of the tablet for any reason to enter the PIN, and thereafter asks for no further security details whatsoever to access Exchange email, it arguably leads to significantly worse security. We see an opportunity for tablet designs optimized for their shared nature, with appropriately distributed security, in a similar vein to the Family Accounts suggested by Egelman et al. [5]. This would mean, for example, providing mail with account-by-account password settings if desired, and suggests multiple tiers of usage: perhaps a web browser and basic functionality available without entering a password, a set of apps available to the whole family, and a set of

Directions in Communal Computing

Beyond such incremental improvements to privacy and architecture, communal computing also points towards exciting directions for design and research. Tablets do not exist as isolated technological devices; in all of the cases we saw they were part of a rich ecosystem of smartphones, laptop and desktop computers, televisions and both local and remote data storage. At present, tablets provide very limited affordances for their users to interact with others in the vicinity: perhaps the best example is the Scrabble app for iPad, in which 'party mode' puts the Scrabble board on the tablet display and uses players' iPhones to display their tile racks. The tablet is being shared by multiple people but the interaction also revolves around the collaborative use of multiple devices in a manner that is still surprisingly rare, despite the visions promised by technologies such as Bluetooth, and serves as a bellweather for future domestic interaction design.

individually password-protected functionalities, including mail but also any transactions involving spending money.

Collect, Curate, Collage, and Share

And with that, we come to a final point about the role of tablets and content. While users in our study understood that a graphical user interface used in conjunction with a keyboard and a mouse was the default means of production in a laptop/desktop experience, they were clearly struggling to identify the means of production on their iPad. While the device provided a touchscreen keyboard for text entry, it "didn't feel right" to users: many of our participants reported only composing the shortest of emails or status updates on the iPad, preferring to use a physical keyboard at a later time for longer missives. We argue this is not just due to the design of the touchscreen keyboard or the lack of tactile feedback afforded by a touchscreen – but because the iPad is situated in a landscape that assumes a keyboard and text as the primary means of production. The form of a device influences its function, and while the iPad provides a great content consumption experience, it is not a device optimized for text input. Instead, the iPad is optimized for activities that rely more heavily on image-based content, and the movement of content through gesture (such as sorting, collecting, and curation of content) or the re-combining of existing pieces of information to create something new, similar to a web a mash-up or fine art collage. While people would avoid writing emails, we saw multiple participants who would regularly email photographs or screenshots from their iPads to friends and family accompanied by a line or two of explanation. We saw participants managing extensive lists of Twitter authors, curating and selecting by retweeting selected content back out to their followers, perhaps with brief annotation. While the form of the iPad lends itself to these types of the activities, they are activities that remain undersupported in the current technology landscape which relies on text and a keyboard as the primary means of production. As touchscreen devices become more prevalent, and interfaces shed their GUI characteristics, we anticipate this orientation to change. We see a future where the act of combining, refashioning, and re-assembling content to express and communicate ideas will feel as intuitive as typing on a keyboard. There are real opportunities for design research in exploring the implications of curation and sharing *as a creative act*. Such creativity is clearly not new: collage, for example, has a long history in art. But the affordances of tablets forefront these actions as everyday creative acts. Existing apps and systems such as Tumblr, Tweetdeck, Photoshop, Facebook and a myriad of photo-sharing applications suggest the value of treating such patterns of selection, replication and annotation as first-class creative citizens.

Conclusion

In some ways, the iPad merely improves upon features of the laptops with which it shares foot-scale (in Weiser's term) computing: it has better battery life, it is lighter and smaller and easier to carry, and it provides access – if sometimes awkwardly – to the same internet of content. At the same time there are some stark differences from Weiser's vision that we believe are not just circumstantial but point to fundamental changes in the nature of everyday computing. Weiser wrote of ubicomp in the office, but the iPad is anything but an office tool. In these interviews we have seen it primarily in the home where

it has become mundane, cozy, and comfortable. This representative of ubicomp in the home is no tool of efficiency, but rather an instrument for comfortable computing. The form of the iPad impacts not just its interface in terms of swiping and tapping, but the configuration of the body of the user: our participants were invariably 'curling up with' their iPads, in front of the television with their families, on the couch, in bed. This is not to say we did not see the iPad outside the home or did not see it used for work: it was being used to teach mathematics in high school, to gather patient data from a clinic, to edit papers, to occupy a mother waiting for Tae Kwon Do practice to finish. But even those practices speak to the medium and the affordances it brings, of gestural input, of accessibility, of portability and sociability. In line with many practitioners of 3rd wave HCI, we see this contribution as speaking to a future where computing is increasingly social, communal, comfortable and symbiotic with bodily experiences [12,16] and not just an abstracted notion of the mind engaged in task-oriented optimization [3].

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