Tablets Will Rule The Future Personal Computing Landscape

by Frank E. Gillett, April 23, 2012

KEY TAKEAWAYS

Tablets Anchor A New Personal Computing Triad At Work And At Home
Tablets become our primary personal computing device and act as a conductor for working with our smartphone, PCs, and other devices. Personal cloud services coordinate digital content across devices. And a new type of PC/accessory, frames, amplifies tablets, PCs, and smartphones for group sharing and intensive desktop work.

In 2016, We’ll Buy 375 Million Tablets Globally And Be Using 760 Million Tablets
Almost one-third of tablets will be sold directly to businesses in 2016. And most individual purchasers will use their tablet for work as well as at home. Tablets will blossom in growth markets, particularly in China. Apple will hang on to its lead, as proprietary Android surpasses Google's Android ecosystem and Microsoft gains in tablets.

Frames, A New Form of PC, Will Become Ubiquitous Stationary PCs And Devices
Frames are displays that also incorporate sensors, wireless docking, and processing power to enhance the power of tablets, smartphones, and PCs that connect to them. Frames become common in meeting rooms, hotels rooms, coffee shops, and conferences, and they will also infiltrate our homes. Tablets plus frames will substitute for laptops in significant volume.
Tablets Will Rule The Future Personal Computing Landscape
We’ll Use Tablets As The Conductor For PCs, Devices, And Personal Cloud Services At Work And At Home
by Frank E. Gillett
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WHY READ THIS REPORT
For a new technology that is just two years old, tablets are huge hit. For CIOs the question is — will they last and what are the long-term implications? How do tablets interact with other personal computing innovations? Will they be widely adopted? This report outlines the related trends that interact with tablets and sizes the global sales and installed base of tablets through 2016. We predict a new form of PC, called frames, that will rise as a result of tablets and other technology innovations and why tablets will cannibalize laptops but not the new forms of desktop PCs. We then outline the strategic planning challenges for CIOs and predict how vendor strategies and offerings will evolve.

Table Of Contents
2 Tablets Will Reshape The Personal Computing Landscape
3 Tablets Become The Central Device In The Personal Computing Universe
5 In 2016, We’ll Buy 375M Tablets Globally And Be Using 760M Tablets
8 Frames, A New Form Of PC, Will Become Ubiquitous Stationary Devices
RECOMMENDATIONS
11 Prep Your Architects And Apps Managers For The New PC Architecture
WHAT IT MEANS
12 The PC Industry Will Look Very Different By 2017
13 Supplemental Material

Notes & Resources
This report is based on Forrester’s consumer and business technology research on tablets, as well as on industry conversations.

Related Research Documents
US Consumer Tablet Forecast Update, 2011 To 2016
March 06, 2012
Beyond Tablets: The Next Five Computing Form Factors To Watch
December 12, 2011
Microsoft’s Shrinking Window For Tablets
November 29, 2011
Computing Futures 2016: How Hardware Advances Will Shift Vendor Prospects
August 24, 2011
The Personal Cloud: Transforming Personal Computing, Mobile, And Web Markets
June 6, 2011
TABLETS WILL RESHAPE THE PERSONAL COMPUTING LANDSCAPE

CIOs have come to count on employees, customers, and partners using sophisticated personal computing technologies — and need to plan ahead for how those technologies will evolve. It’s time for CIOs and their business partners to anticipate disruptive changes. After a 15-year period of evolutionary stability, new technologies, customer behaviors, and vendors are disrupting the personal technology landscape:

- **Tablet adoption is broad and accelerating.** The growth of the iPad has been phenomenal — with 9% of US online adults 18 and older reporting owning an iPad as a range of other tablets struggle to gain share.¹ And consumers are taking them to work, with 24% of global information workers reporting using tablets for work — led by 44% of execs and 30% of salespeople. Formal support and adoption by IT organizations is also strong — 27% of North American and European companies support the iPad for at least some of their employees.²

- **Information workers are bringing their personal technologies to work.** Fifty-two percent of global information workers report using three or more devices (including PCs and mobile) for work; one-third of these devices are non-Microsoft, and one-quarter are mobile.³ We predict that mobile devices will surpass PCs to become the majority of devices used for work, and Microsoft’s share of the overall device OS market will fall below 50% by 2016. Workers are creating an informal bring-your-own-device (BYOD) phenomenon much larger than formal bring-your-own-PC (BYOPC) efforts, as only 6% of North American and European companies have implemented BYOPC programs.⁴

- **Apple is establishing a strong enterprise presence, ending Microsoft dominance.** Macs are not just for students and hipsters anymore; one in five info workers worldwide uses an Apple product for work.⁵ And they aren’t just using iPhones and iPads — 8% are using Macs.⁶ These users are more likely to be senior in rank, higher paid, younger, and in emerging markets. A majority of IT decision-makers report support for and interest in Apple products. The result is that Apple has established a significant presence in the workplace and is establishing formal ties to the IT organization, which will result in Apple increasingly being considered a viable alternative to Microsoft for end user technology.

- **Personal cloud services are shifting the focus from devices to personal digital content services.** In 2009, we predicted that a set of federated online services would play an integral role in managing our diverse device and content portfolios — organizing, preserving, and orchestrating personal and work data across multiple computing devices.⁷ Personal cloud services will be centered on a core service of email, contacts, and calendars and complemented via a developer network of component services such as file synchronization, information management, and personal search. This burgeoning market is set to disrupt the personal computing device and OS markets — so much so that in 2016, individuals will first choose a core personal cloud service and then compatible devices. As personal cloud core offerings
become the tech industry's third client software platform — platform plays like Apple's iCloud will join iOS in supporting Apple's extraordinary mobile device margins.

- **Innovative PC form factors, such as ultralight laptops, are growing.** Twenty-two percent of US online adults 18 and older are interested in or already own an ultrabook. And data comparing global info workers' current device inventory to future preferred combinations suggests a 73% increase in the presence of ultrabooks within the workplace.

### CIOs Ask: How Big Will Tablets Be, and How Will They Reshape Personal Computing?

It's been just two years since Apple's iPad launched; 60 million units and $35 billion in revenue later, it's poised to transform the personal computing landscape. So far, the iPad has left all competitors in its wake, including Google's Android ecosystem, HP, Research In Motion (RIM), and Microsoft; only Amazon.com's Kindle Fire is a viable alternative in the market so far. Given the proliferation of iPads in conference rooms, coffee shops, and airline cabins, CIOs, and the information and communications technology (ICT) industry overall, are wondering about its impact on the evolution of personal computing hardware and the end user experience:

- **What role will tablets play for consumers and info workers?** Tablets were initially tagged as content consumption devices used in “lean back” mode. New tablet apps such as Apple's iWork and Adobe's Touch Apps are moving iPads into creation mode. And Microsoft's Office suite is expected on tablets by early 2013. Will tablets cause consumers or IT departments to cancel PC orders or delay hardware upgrades? Can tablets replace PCs?

- **How will other hardware and services innovations interact with tablets?** Tablets and their apps are different from PCs — many of the apps depend on Internet-hosted or cloud services. And the on-board storage capacity is much lower than a PC. So how will enterprise servers and personal cloud services evolve with tablets and shape their usage? Will back-end services enable more substitution for PCs?

- **How many and what kinds of tablets will be in use by 2016?** Consumer demand and forecasts for tablets in the US is strong. But what does the combined demand look like from companies and consumers around the world?

- **How will PCs and smartphones evolve under the influence of tablets?** As tablet hardware and software become increasingly capable, how will PC and smartphone hardware evolve and what will be the use cases and respective roles of the full range of personal devices?
TABLETS BECOME THE CENTRAL DEVICE IN THE PERSONAL COMPUTING UNIVERSE

Over the next four years, tablets will gain new sensors, processing power, and better wireless capabilities for connecting with nearby devices. This will enable full voice control and dictation, increased gesture control, more situational context, better accessory integration, and software that anticipates a user’s needs. But all of this tech will also flow to PCs. So why will tablets be primary? It’s the form factor and the anywhere usability of tablets that will give them a clear edge over PCs as an individual’s most important, most used computing device. Let’s define tablet devices, so we can be clear on the difference between tablets and laptops. Tablets are:

“Touch first” slab computers that weigh less than 800 grams (1.75 pounds), have a 7- to 14-inch diagonal screen area, feature always-on operation, and an 8-hour battery life.

Why aren’t smartphones the central device? The screen is too small and the battery life is too short when used intensively, two things which won’t change in the next four years. In a 2010 interview, Steve Jobs used an analogy that compared PCs with trucks and tablets with cars. Tablets will rule because they are more:

- **Natural to use and easier to share, especially on the go.** Laptops don’t work well on laps — they’re really portable computers for use at a desk with a chair. Tablets can be used standing up or for a quick look without a flat surface. In meetings, they don’t put up a barrier against others, and they’re as easy to show around a group as a writing pad. These advantages, combined with the direct control experience of multi-touchscreens, trump the graphical user interface (GUI) and keyboard experience of PCs in many contexts.

- **Mobile, portable, and have all day battery life.** Ultrabooks, such as the MacBook Air, now have some of the advantages of tablets, such as nearly instant-on operation. But they are double the weight, do not stay on in the background, and lack the ease of access and sharing. The slab form factor is dramatically more portable, and the efficient systems-on-a-chip (SOCs) brains of tablets will continue to deliver better battery life.

- **Flexible for both content consumption and sufficient creative, productive work.** By 2016, tablets will be capable content creation devices for many common office and personal tasks, in addition to being excellent for games and entertainment. But they won’t be the best for intensive creative tasks such as graphics design, engineering, or complex calculations. Desktop PCs, and some laptops, will continue to be preferred for these specialized tasks.

Tablets Anchor A New Personal Computing Triad At Work And At Home

Tablets won’t change in isolation. They’re part of a transformation of the personal computing landscape with three new elements that complement or supplant today’s PCs:
1. **Tablets acting as the primary interface control device.** With instant-on touch access to a large screen, tablets provide great access to email, web browser, rich applications, and most of the experiences that people need. As a result, individuals will use them to conduct most of their experiences and gather most of their information. From the tablet, they will access and send information to their smartphone, TV, projector, PC, and other devices.

2. **Personal cloud services orchestrating across all of a user’s experiences and devices.** No device, including tablets, will succeed as a permanent repository of information or content, since they are lost, upgraded, or fail every few years. Personal cloud services are emerging to organize, orchestrate, and preserve personal and work content across all devices — and across the menagerie of online services and employer applications we all use.

3. **Frames, a new kind of stationary PC, amplifying tablet capabilities.** Tablets fall short when we want to work with a large display or present to groups of people. Forrester predicts a new form of peripheral and PC will emerge, specifically designed to amplify tablet capabilities with a larger display, sensors, and processing power. They’ll become the dominant form of stationary PC and will also work with smartphones and laptops. These “frames” will enable users to interact with large displays for larger-scale applications, small group interactions, and presentations.

**IN 2016, WE’LL BUY 375M TABLETS GLOBALLY AND BE USING 760M TABLETS**

Forrester expects that the tablet market overall will grow strongly through the next five years (see Figure 1-1), rising from 56 million sold in 2011 to 375 million in 2016, a 46% compound annual growth rate. With buyers often upgrading to new tablets while passing on their existing tablets, we expect a first-purchase-to-retirement life cycle of three years, which means that 760 million tablets will be in use in 2016, compared with about 2 billion PCs.

Key highlights of our forecast include:

- **Almost one-third of tablets will be sold directly to businesses in 2016.** In 2011, enterprise IT hardware decision-makers reported that 36% of companies support tablets and that 44% of companies plan to increase spending on tablets this year. We predict our baseline of 10 million tablets sold to businesses in 2011 (18% of the total) will grow to one-third of total sales, or 122 million, in 2016 as tablets become standard tools for executives, sales staff, and many other info workers.

- **Most individual purchasers will use their tablet for work as well as at home.** Two-thirds of tablets in 2016, 253 million, will be sold to individuals, many of whom will take them to work. In Forrester’s global Forrsights info worker survey, 60% of info workers using a tablet report that they use it for both personal and work purposes — and 50% of info workers who use a tablet for work chose and paid the full price for it. We believe this phenomenon will drive tablets into
the enterprise significantly faster than the rate of formal IT deployments. Further, when asked which device they’d prefer to use for work, info workers had a strong preference for tablets, which indicated that tablets used in the workplace will increase by 68% by early 2013.19

- **Tablets will blossom in growth markets, particularly China.** Emerging markets, where PCs and smartphones are not as broadly used as in developed markets, are a huge opportunity for tablet vendors. Forrester believes that emerging markets will account for 40% of tablets sold in 2016, and that Apple will do well in these markets due to strong product and brand appeal.20 Despite Android plays from low-price local vendors such as eBen, as well as the retail footprint of Lenovo, Apple market share in China will remain above the global average. Even in 2011, 17% of metropolitan Chinese online adults 18 and older reported owning a tablet, versus 11% of US online adults.21

**Tablets Cannibalize All PCs But Eventually Displace Laptops More Than Stationary PCs**

CIOs and all industry watchers are focused on whether tablets will replace or complement PCs. As processor power, sensors, user experience, and software evolve to render rich content creation experiences natively on tablets and companion devices like frames, some individuals will forgo PC purchases in favor of just using tablets. There are three dimensions to tablets’ impact on the PC market:

- **First-time computer buyers will start with tablets, not PCs, especially in emerging markets.** In the majority of markets, PCs aren’t yet ubiquitous. Low-priced basic tablets, such as the government-subsidized $35 Aakash tablet in India and inexpensive white label Android tablets in China, will dramatically expand the market for first-time computer buyers. New computer users in mature markets, whether children or elders, are also likely to start with a tablet rather than a PC. In the US, 30% of Gen Y tablet owners report purchasing their tablet to replace a PC, whereas only 20% of Baby Boomer tablet-owners report doing so.22 So a new generation of computer users will start with tablets, not PCs, as the heart of their computing experience. For this growing body of users, PCs will seem like clunky trucks rather than sleek cars, dampening their long-term propensity to buy conventional PCs.

- **Existing PC users will defer some PC purchases in the near term, but the effect will decline.** It will take a few years for individuals to figure out their preferences for tablets in relation to other devices. Meanwhile, some are deferring PC purchases — 28% of US consumers who own a tablet and a laptop PC report that they will wait longer to buy a new laptop PC because they have a tablet.23 Once individuals sort out the new roles of tablets and PCs, they’ll return to the PC replacement cycle we see today.

- **Tablet substitution will hit laptops and begin to reshape desktop PC designs.** As tablets grow in capability, particularly with voice and motion input to complement touch, laptops will be less attractive by comparison, blunting what has been a steadily growing laptop share of computer sales. Meanwhile tablet users will seek better integration with their desktop PCs and a better
experience moving between tablets and stationary PCs — such as the same voice, motion, and sensor capabilities plus a common user experience. Already, 28% of IT hardware decision-makers in Forrester’s Forrsights Hardware Survey, Q3 2011, reported that they believe that tablets are substitutes for laptop PCs. As tablets become more capable, and especially as tablets integrate with new frame PCs, the substitution for laptops, but not “desktops,” will grow.

Apple Will Lead A Diverse Tablet Landscape That Includes Android And Windows

Tablets and the future PC market will feature multiple robust software/OS platforms, unlike the PC era domination of Microsoft Windows. We forecast that four major tablet OS categories will matter over the next five years (see Figure 1-2):

- **Apple will be the clear leader.** Apple built on the wildly successful iPhone ecosystem for the iPad and defined the tablet market when it launched the iPad in 2010. It will maintain this leadership in a more competitive market, with its share of annual tablet sales slowly eroding while it maintains a slim majority of the global installed base of tablets. Apple will show strong leadership in the enterprise and with premium buyers globally, especially in emerging markets such as China, where the Apple brand is very strong.

- **Google’s Android ecosystem will struggle in tablets and focus on low price markets.** The wide variety of devices, features, and software support, plus inconsistent support for OS upgrades, is fragmenting the Android ecosystem, and it will result in a net decline in the Android installed base by 2015, despite the continued success of Android smartphones. We believe that many original equipment manufacturers (OEMs) will shift focus from Android devices to Windows 8 tablets but that Samsung and a variety of low-priced white label tablets will stay the course and find a role in serving primarily growth markets with budget devices.

- **Amazon and others’ proprietary Android tablets surpass Android ecosystem sales in 2014.** Amazon’s popular new Kindle Fire tablet uses a proprietary version of the Android OS that replaces many of Google’s apps and services with Amazon’s. For example, it features Amazon’s Appstore for Android, not the Google Play marketplace for apps. The Barnes & Noble Nook tablets are another example of proprietary Android tablets, which don’t support all Android functionality and thus according to Google cannot be labeled an Android device. The popularity of these content-driven devices will cause proprietary Android share to surpass the installed base of Google’s Android ecosystem in 2015. This further fragmentation will challenge Android developers, customers, and especially enterprises, and hamper the creation of a shared ecosystem.

- **Microsoft’s Windows Metro tablets will accelerate in 2014.** Windows 8’s touch native Metro interface is designed from the ground up for tablets and is expected to launch by the end of 2012. Because the Metro user experience also includes new software architecture and the new Microsoft Store for apps, it will take time for the developer ecosystem to build. As a result, it
will take most of 2013 for the Microsoft ecosystem to create a fully capable Windows Metro experience for customers, pushing sales acceleration to 2014. Once rolling, however, we expect Microsoft will be a significant player, but one chasing a leader with a multiyear head start.26

**Figure 1** Forecast: Apple Leads In 2016 As The Tablet Installed Base Reaches 760 Million

*The spreadsheet associated with this figure contains details about this methodology.*

1-1 **Global tablet sales will rise to 375 million in 2016**

Global tablet sales and installed base (millions)

![Graph showing global tablet sales and installed base](image)

- 375 million tablets sold worldwide in 2016
- 760 million global tablet installed base
- 375 million global tablet sales (33% to businesses, 40% to emerging markets)

A majority of tablets will be retired within three years of original purchase.

1-2 **Apple will still represent the majority of tablets in use in 2016, even as Windows finally grows**

Global tablet installed base by OS (millions)

![Graph showing global tablet installed base by OS](image)

- iOS stays strong at 53% of installed base in 2016
- Proprietary Android surpasses Google Android ecosystem

*Source: Forrester forecast
Note: Other tablet operating systems excluded due to negligible installed base share.*
FRAMES, A NEW FORM OF PC, WILL BECOME UBIQUEOUS STATIONARY DEVICES

There’s an interesting set of innovations bubbling in the almost-forgotten desktop PC market. Today’s Apple iMacs squeeze a computer into the back of the computer display, and other PC manufacturers now offer similarly configured all-in-one PCs. Powerful new displays and docks such as the Apple Thunderbolt Display, the Samsung Central Station, and the Sony Power Media Dock, hint at more innovation to come. Apple’s AirPlay feature enables iOS devices, and Macs with the forthcoming OS X Mountain Lion OS X release, to send video and audio to TVs or external speakers via gadgets such as an Apple TV. Intel’s Wireless Display (WiDi) technology also shares screens to TVs. And Microsoft’s Surface technology will evolve into a frame. All this adds up to a transformation of docks and displays, morphing into something designed specifically for enhancing all mobile devices, tablets, laptops, and smartphones.

Forrester believes these innovations will be combined with increasingly powerful sensors — motion input sensors such as the Microsoft Kinect, as well as passive detectors for context like temperature or user emotion — to create a new class of device we call frames. These frames will combine display capabilities, sensor arrays, wireless connectivity, and processing power into powerful PCs and accessories that work seamlessly with tablets, laptops, and smartphones to amplify their capabilities for stationary work. We envision three tablet-plus-frame usage scenarios circa 2014 (see Figure 2):

- **Frames become common in meeting rooms, hotel rooms, coffee shops, and conferences.** Everywhere that you see a projector or conference room display today will become a frame over the next five years. TVs, even Internet-connected smart TVs, aren’t frames today — but some TVs will incorporate frame capabilities. Windows, white boards, new flexible plastic displays, all have the potential to become frames with the addition of sensors, display capabilities, wireless docking protocols, and processing power.

- **Frames infiltrate the home.** The TV is a natural first step, either through a game console such as Microsoft Xbox or set-top box such as Apple TV, with later capability built into high-end TVs. From there, frames will appear in the home office, the picture window, the refrigerator, or family room wall. If you’ve seen Intel’s CTO and Labs VP Justin Rattner or Microsoft’s Chief Research and Strategy Officer Craig Mundie envision the future computing experience using voice and gesture to work with images projected onto walls, then you’ve seen an example of what frames will be like.

- **Tablets plus frames substitute for laptops in significant volume.** We’ve already heard a few anecdotes of sales teams wanting to swap out laptops for a tablet and a desktop PC. Frames will make this preference for tablets over laptops a significant trend for many consumers and info workers (see Figure 3). Frames will become a new form of stationary PC, rising in volume even as laptop growth decays, redefining the desktop PC market as the stationary PC market.
**Figure 2** Frames Enable Tablets To Do Desktop Work And Share With Groups

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**Frame PC**
- A frame is a combination of a display, wireless docking, sensors, and complementary computing power.
- Frames look like computer displays, TVs, windows, whiteboards, or projector screens.
- Smartphone, PC, and tablet can share capabilities to boost performance.
- Input sensor capabilities include gesture, eye tracking, touch, and voice.
- Context sensor capabilities include ambient and emotion sensing.

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**Personal cloud services** orchestrate content across devices and situations.

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Tablets are used on the go, and connected to other personal devices.

Tablets are used with large frames for sharing with groups.

Tablets are linked with frame PCs for intensive desktop productivity and creation.

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Source: Forrester Research, Inc.
**Recommendations**

**PREP YOUR ARCHITECTS AND APPS MANAGERS FOR THE NEW PC ARCHITECTURE**

Personal computing will evolve radically in the next half decade, after a long period of stability. PC no longer will mean personal computers — instead it will be the full spectrum of personal computing, from personal cloud services to the broad range of personal technology used for work, including tablets, smartphones, and frames. Smartphones and tablets are proliferating, employees are using personal tech for work, personal cloud services are emerging to coordinate the user experience, and frames, a new form of PC, will emerge. CIOs, their planners, and strategists need to explore the implications:

- **App development execs:** reconfigure apps to work with the new use cases. Tablets require different kinds of apps from smartphones, and both are different from PCs, requiring planning for many different screen sizes and usage scenarios. And soon frames will enable tablets and
smartphones to use multiple displays, creating additional challenge and opportunity for app dev managers to create great, productive user experiences for employees, customers, and partners.

- **CTOs: plan for systems of engagement to handle high-volume interactions.** The rise of tablets will further amplify a growing challenge for IT operations, enterprise architects, and application development execs: how to handle the growing volume of transactions stimulated by rich, interactive experiences on websites and mobile devices? Forrester believes that the CIO's team will have to build a new class of software infrastructure, systems of engagement, to create those rich experiences and shelter the core transactions systems from the massive volume of interaction flow.  

- **Enterprise architects: explore new sensors and input methods, not just touch and GUI.** There's a great *New Yorker*-style cartoon that jokes about using a Nintendo Wii motion controller as an input device for accounting software. Is your team ready for scenarios like that? Time to explore the possibilities that motion controllers and sensors such as the Microsoft Kinect for Windows will create. Frames will bring further variety of new input controllers and context sensors that create interesting real-time interaction opportunities with customers and for employees.

- **Security and risk execs: figure out how to link work and personal for employees.** Work and personal is already commingled on 60% of the devices used by information workers. And 62% of info workers report using one or more personal cloud services at least once a week to smoothly manage and access information across multiple devices. Security execs can help choose short-term solutions, such as flexible file sharing service like Box or SugarSync. The long-term challenge is to figure out strategies and technologies for linking to employees' personal technology to enable productivity while employing reasonable safeguards — such as Evernote's sponsored accounts approach.

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**WHAT IT MEANS**

**THE PC INDUSTRY WILL LOOK VERY DIFFERENT BY 2017**

Tablets are just the camel's nose entering the tent — there are a lot more parts of that camel coming into the personal computing world! What are the implications and additional events to come? We think that:

- **Apple will add deeper enterprise features, such as Siri for the enterprise.** Apple has been very cautious to not waver from a single-minded focus on great user experience. So the company has not added any support for complicated enterprise features and policy, other than the bare minimum such as password policy and remote wipe. But it can't stay outside forever. We think Apple will start to add capabilities such as support for seamless isolation of enterprise apps and data within iOS, a separated Siri for enterprise so that voice snippets can't wander, and private iCloud instances for corporate use.
- **Amazon goes to work.** Amazon has been a pure consumer company, so far. The Kindle Fire will get them dragged into the office, just as Apple was. By 2013, Amazon will start adding email support, password policies, and remote wipe so users can use their Kindle Fires for access to corporate email. And they’ll start recruiting enterprise independent software vendors (ISVs) to port their enterprise apps from Google Android to Kindle Fire.

- **Frames create a power shift back to consumer brand name OEMs.** The PC business has become a commodity business for most OEMs, driven by price with little differentiation for most products. Frames will change that because of the innovation around sensors and the deep software integration needed to make them work. And buyers will be more brand conscious as a result of the more personal, intimate experience that frames will create. Buyers will pivot back to strong consumer brands such as HP, Samsung, and Sony.

- **Microsoft gets into the frames hardware business to boost Windows on tablets.** Like Google when it bought Motorola, Microsoft will find that it needs to get in the hardware game for frames in order to make sure it creates a seamless user experience for Windows, especially for tablets. Otherwise the tighter integration of Apple’s frame experience will create too much contrast and leave Windows looking too much like the fragmented Google Android ecosystem.

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**SUPPLEMENTAL MATERIAL**

**Methodology**

Forrester’s Forrsights Workforce Employee Survey, Q4 2011, was fielded to 9,912 technology end users located in Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Japan, Malaysia, Mexico, New Zealand, the Philippines, Russia, Singapore, the UK, and the US from SMB and enterprise companies with 20 or more employees. This survey is part of Forrester’s Forrsights for Business Technology and was fielded from September 2011 to November 2011. Toluna fielded this survey online on behalf of Forrester. Forrester’s Forrsights for Business Technology ensures that the final survey population contains only those who use a PC or smartphone at work for at least 1 hour per day.

Forrester’s Forrsights Hardware Survey, Q3 2011, was fielded to 2,343 IT executives and technology decision-makers located in Canada, France, Germany, the UK, and the United States from companies with two or more employees. This survey is part of Forrester’s Forrsights for Business Technology and was fielded during July and August 2011. The LinkedIn Research Network fielded this survey online on behalf of Forrester. Forrester’s Forrsights for Business Technology ensures that the final survey population contains only those with significant involvement in the planning, funding, and purchasing of IT products and services.

Forrester’s Forrsights Budgets And Priorities Tracker Survey, Q4 2011, was fielded to 3,752 IT executives and technology decision-makers located in Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Japan, Malaysia, Mexico, New Zealand, the Philippines, Russia,
Singapore, the UK, and the US from small and medium-size business and enterprise companies with 100 or more employees. This survey is part of Forrester’s Forrsights for Business Technology and was fielded from September 2011 to December 2011. LinkedIn Research Network fielded this survey online on behalf of Forrester. Forrester’s Forrsights for Business Technology ensures that the final survey population contains only those with significant involvement in the planning, funding, and purchasing of IT products and services. Each calendar year, Forrester’s Forrsights for Business Technology fields business-to-business technology studies in 17 countries spanning North America, Latin America, Europe, and developed and emerging Asia. For quality control, we carefully screen respondents according to job title and function. Additionally, we set quotas for company size (number of employees) and industry as a means of controlling the data distribution and establishing alignment with IT spend calculated by Forrester analysts. Forrsights uses only superior data sources and advanced data-cleaning techniques to ensure the highest data quality.

We have illustrated only a portion of survey results in this document. To inquire about receiving full data results for an additional fee, please contact Forrsights@forrester.com or your Forrester account manager.

Forrester conducted the North American Technographics® Telecom And Devices Online Recontact Survey, Q3 2011 (US), an online survey fielded in September 2011 of 5,147 US individuals ages 18 to 88. For results based on a randomly chosen sample of this size (N = 5,147), there is 95% confidence that the results have a statistical precision of plus or minus 1.32% of what they would be if the entire population of US online individuals ages 18 and older had been surveyed. Forrester weighted the data by age, gender, income, broadband adoption, and region to demographically represent the adult US online population. The survey sample size, when weighted, was 5,130. (Note: Weighted sample sizes can be different from the actual number of respondents to account for individuals generally underrepresented in online panels.) Please note that this was an online survey. Respondents who participate in online surveys have in general more experience with the Internet and feel more comfortable transacting online. The data is weighted to be representative for the total online population on the weighting targets mentioned, but this sample bias may produce results that differ from Forrester’s offline benchmark survey. The sample was drawn from members of MarketTools’ online panel, and respondents were motivated by receiving points that could be redeemed for a reward. The sample provided by MarketTools is not a random sample. While individuals have been randomly sampled from MarketTools’ panel for this particular survey, they have previously chosen to take part in the MarketTools online panel.

Forrester Research conducted the Asia Pacific Technographics Online Survey, Q3 2011 in July 2011 of 7,085 consumers ages 18 and older in South Korea, Australia, Japan, metropolitan China (including Hong Kong, Shanghai, Beijing, Guangzhou, Chengdu, Wuhan, and Xian), and metropolitan India (including Mumbai, New Delhi, Kolkata, Bangalore, Chennai, Hyderabad, and Ahmadabad). Forrester weighted the data by age, gender, and geographical distribution to be representative of the adult population in each country or region surveyed. The samples in South
Korea, Australia, and Japan are geographically representative of the adult population according to the latest country-specific census. The samples in India and China are representative of the urban population, with a heavier weight attributed to these countries' largest urban areas. The sample in India is representative only of the SEC ABC groups. Respondents in India completed the survey either in English or a native language: Marathi, Hindi, Bengali, Kannada, or Tamil. The survey for all other countries was administered in the country’s or territory’s official language.

For Technographics Clients

How To Get More Technographics Data Insights

Forrester’s North American Technographics Telecom And Devices Online Recontact Survey, Q3 2011 (US), of 5,147 US individuals during September 2011 includes many additional questions and parameters by which you can analyze the data contained in this report. If you wish to subscribe to Forrester’s Consumer Technographics services, please contact your account manager or data@forrester.com. If you are an existing Technographics client, please contact your data advisor at consumerdataadvisor@forrester.com.

ENDNOTES


2 Data is from question PC12 in Forrester’s Forrsights Hardware Survey, Q3 2011. For more details on tablet adoption and interest in adoption by both employees and IT decision makers, see the February 22, 2012, “Info Workers Using Mobile And Personal Devices For Work Will Transform Personal Tech Markets” report.

3 Data is from question DEV1 in Forrester’s Forrsights Workforce Employee Survey, Q1 2011. We asked information workers about all devices they use for work, including personal devices. See the February 22, 2012, “Info Workers Using Mobile And Personal Devices For Work Will Transform Personal Tech Markets” report.

4 Data is from question BYO1 in Forrester’s Forrsights Hardware Survey, Q3 2011.

5 Data is from question DEV6 in Forrester’s Forrsights Workforce Employee Survey, Q4 2011. Adoption of Apple products is broad across 17 developed and emerging countries. See the January 26, 2012, “Apple Infiltrates The Enterprise And Reshapes The Markets For Personal Devices At Work” report.

6 Data is from question DEV6 in Forrester’s Forrsights Workforce Employee Survey, Q4 2011.

7 Individuals are using emerging services such as Dropbox and Evernote to manage their digital content and experiences across multiple PCs and mobile devices. See the July 6, 2009, “The Personal Cloud” report. For a detailed follow-up, see the June 6, 2011, “The Personal Cloud: Transforming Personal Computing, Mobile, And Web Markets” report.
8 Data is from question Q31 in Forrester’s North American Technographics Telecom And Devices Online Recontact Survey, Q3 2011 (US).

9 Data is from questions DEV1 and DEV9 in Forrester’s Forrsights Workforce Employee Survey, Q4 2011.

10 At the announcement of the latest iPad in early March 2012, Apple announced it had sold 55 million iPads to date, and subsequently announced it had sold more than 3 million of the new iPads over the launch weekend, rounding up to more than 60 million iPads sold by the time this report is published. Source: Apple, “Investor News” (http://investor.apple.com).

11 Forrester predicted that Amazon’s combination of eBooks, music, and stored credit cards would offer a powerful foundation on which to build a tablet business. Amazon subsequently announced the Kindle Fire tablet based on a rebranded version of Android to Amazon’s services, not Google’s. See the August 29, 2011, “Amazon Will Be Apple’s Top Competitor In Tablets” report.


13 “When we were an agrarian nation, all cars were trucks, because that’s what you needed on the farm,” Jobs said at D8 last month. ‘But as vehicles started to be used in the urban centers, cars got more popular. Innovations like automatic transmission and power steering and things you didn’t care about in a truck as much started to become paramount in cars . . . . PCs are going to be like trucks. They’re still going to be around, they’re still going to have a lot of value, but they’re going to be used by one out of x people.’” Source: John Paczkowski, “You’re Right, Steve. The PC Is a Truck. But the Tablet Isn’t a Car. It’s a Bicycle,” AllThingsD.com, June 17, 2010 (http://allthingsd.com/20100617/pc-truck-tablet-bike).

14 Source: Forrester forecast.


16 Source: Forrester forecast.

17 Source: Forrester forecast.

18 Data is from questions DEV2, DEV7, and DEV8 in Forrester’s Forrsights Workforce Employee Survey, Q4 2011.

19 Data is from questions DEV1 and DEV9 in Forrester’s Forrsights Workforce Employee Survey, Q1 2011.

20 Source: Forrester forecast.

21 Forrester’s Asia Pacific Technographics Online Benchmark Survey, Q3 2011 (China) and question Q1 in Forrester’s North American Technographics Telecom And Devices Online Recontact Survey, Q3 2011 (US).
22 Source: Forrester/Bizrate iPad/Tablet Online Survey, Q1 2011. For more information, see the June 16, 2011, “The Products That Lose When Tablets Win” report.


24 Data is from question TAB5 in Forrsights Hardware Survey, Q3 2011.

25 Google recently rebranded the Android Marketplace as part of its Google Play set of content and app stores.

26 Forrester’s consumer surveys in 2011 found strong but quickly waning preference for a tablet using Microsoft software. See the November 29, 2011, “Microsoft’s Shrinking Window For Tablets” report.


29 Intel’s WiDi is only in a few products in the market so far — details are available on Intel’s website. Source: Intel (http://www.intel.com/content/www/us/en/architecture-and-technology/intel-wireless-display.html).


31 Back in 2008, Forrester predicted the rise of standardized digital video. In the report, Forrester lists several scenarios for viewing video on public screens or projected on walls, presaging the frames device idea. See the June 17, 2008, “How Video Will Take Over The World” report.

32 For examples of the challenges of mobile device transaction load and details on systems of engagement, see the February 13, 2012, “Mobile Is The New Face Of Engagement” report.


34 Data is from questions DEV1 and DEV2 in Forrester’s Forrsights Workforce Employee Survey, Q1 2011.

35 Data is from questions CLOUD1 in Forrester’s Forrsights Workforce Employee Survey, Q1 2011.
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