The Rise of Apps, iPad and Android (Dec 10)

By ANDREW DOWELL

Peter Hoey

In 2010, the computer truly went mobile.

Sure, users of Apple Inc.'s iPhone have had the Web in their hands since 2007. But this past year, smartphones plunged into the mainstream, giving millions of people the ability to browse the Internet, watch movies and stream music anywhere they could maintain a cellular or Wi-Fi connection—and without having to find a place to sit down and boot up a laptop.

There were 81 million smartphones sold world-wide in the third quarter, the analysts at Gartner say, almost twice as many as a year earlier. They accounted for nearly one in five mobile phones sold that quarter. The chiefs of Verizon Communications Inc. and AT&T Inc. think smartphones could account for nearly three of every four phones sold by the middle of the decade.

This surge has upended the balance of power in the wireless market.

Between the emergence of the iPad, apps, Android smartphones and the introduction of 4G networks, 2010 was the year the computer truly went mobile. Andrew Dowell takes us through 2010's top mobile trends on Digits.

Devices running on Android, the software distributed by Google Inc., and Apple's iOS have shot past Research In Motion Ltd's BlackBerry, Gartner data show. Android is even closing in on market leader Nokia Corp., which has struggled and replaced its CEO this year.

Microsoft Corp., a powerhouse on the desktop, is struggling to find a foothold, with just 2.8% of the market for its mobile operating system in the third quarter. It has pinned its hopes on devices running a new version, Windows Phone 7, which are just hitting stores.

This past year also saw the tablet computer finally get traction, thanks to Apple and its iPad. The company sold 7.5 million iPads in their first six months on the market, and Gartner thinks nearly 55 million tablets will sell next year.

The momentum in technology is now with devices that can easily be carried around and the applications that sustain them.

The Journal runs through the defining moments of that transition this year and look at what to expect in 2011:

IPAD

Apple created a new mobile category with its iPad touchscreen tablet computer, which went on sale in early April. Despite the notable failures of companies like Microsoft to sell a tablet-like device in the past, Apple proved the combination of a sleek device, a high-resolution display and content via iTunes could appeal to consumers. Analysts at Citigroup estimate Apple will sell about 14 million iPads this year, and some analysts say it could have shipped even more if Apple's supply had kept up.

Coming next: Competition. So far, Apple has had the tablet market essentially to itself, with Samsung Electronics Co.'s Galaxy Tab its only real competitor at the cash register. The New Year will bring alternatives from Motorola Inc. and RIM among others.

ANDROID

This year saw the iPhone gain its first worthy competitors. And nearly all of them are powered by Google's mobile operating system, Android. While the first Android device was launched two years ago, it wasn't until 2010 that Android hit its stride. Credit Google's partnership with Verizon Wireless and two phone makers—Motorola and HTC Corp. The collaboration produced a series of hit phones this year and saw Android pass Apple in market share. That annoyed Steve Jobs and ensured Google's profitable search engine will be a mainstay on mobile devices.

Coming next: Cheap smartphones. Android's next move is downmarket, with some predicting Android phones will sell at unsubsidized prices under $100. That plus cheaper data plans could dramatically expand smartphone penetration.

APPS

2010 was the Year of the App. Sometimes cheap, often silly, these little computer programs—there are hundreds of thousands of them—turned smartphones into game rooms, barcode scanners and photo manipulators.

Three years after Apple reluctantly opened its iPhone to outside developers, apps have grown from time-killers into an ecosystem seen as a key to keeping consumers loyal to their phones. That explains why companies like Google, RIM and Verizon have jumped into the game and opened their own online marketplaces for third-party programs.

Apps, many of which cost just 99 cents each, have also spawned a cottage industry with thousands of developers, established software vendors and start-ups focused on churning out mobile programs. Gartner estimates that global app sales will total $6.7 billion in 2010. Look no further than Rovio Mobile's goofy "Angry Bird" game, which has sold 12 million copies.

Coming next: Apps go corporate. AT&T, business-software developer SAP AG and other companies are working on apps that can help their employees track sales, monitor systems or check-out customers without being tied to their stations. The quick adoption of tablets by business users is helping fuel the trend.

GOING 4G

U.S. wireless networks moved solidly into their fourth generation this year, with Sprint launching the first 4G handsets this summer and Verizon Wireless rolling out its own 4G network this month. The first generation was analog. The second was digital, which made better use of spectrum and was more secure. The third allowed fast data connections. The fourth-generation technology promises super-fast broadband service that will make wireless video a breeze. For now, it's mainly a service for laptops, and nationwide coverage doesn't yet exist. But phones will be pouring out in the year ahead, and the networks are expanding. Now if the carriers would just agree on what qualifies. T-Mobile, exploiting the fuzziness around the official definition of 4G, announced it has the nation's largest 4G network. Sprint and Verizon says it's just an advanced form of 3G.

Coming next: Paying for what you use. Carriers are looking to cash in as data use grows. AT&T has already dropped its unlimited data plan for new users. Verizon plans to adopt of some consumption pricing as it transitions to 4G. Users are going to have to start watching bits the way they used to count minutes.

PARTS SHORTAGES

Fancy smartphones were all the rage, but humble transistors, resistors and screens showed their clout this year. HTC's Droid Incredible went on prolonged back order almost immediately after its April launch due to shortages of its high-tech display. Insufficient supplies of basic components like semiconductors used in wireless base stations cost network-equipment company Ericsson around $500 million in sales in the second quarter. Shortages of network equipment in turn held up AT&T's promised improvement of its much-criticized network in San Francisco.

Coming next: Samsung. The company's mobile-display business, which has had difficulty meeting demand for ultrathin screens for smartphones, is boosting production with a new facility that opens in July. Capacity will go up to 30 million screens a month from three million currently.

PATENT WARS

The favorite sport for companies in the mobile business this year was patent litigation, and the home field was the International Trade Commission in Washington, D.C. The ITC, set up to adjudicate trade disputes, has the advantage of moving faster than the federal court system, and it's fast becoming the locus of intellectual property litigation expertise.

Companies including Apple, Motorola, Microsoft, Nokia and even Eastman Kodak Co. turned to the court, which has the power to bar imports of products that are found to infringe on companies' patents.

Coming next: More legal disputes. Patent attorneys don't expect any slowdown at the ITC, which has the capacity and expertise to handle more cases. Rulings from this year's round of cases could also show up in 2011, and their tone will affect whether other companies chose to fight or settle.

SECURITY/PRIVACY

True, the big one hasn't dropped yet. But smartphone makers, app developers and users are well behind the curve when it comes to securing mobile devices against the sort of attacks that PC users started defending themselves against long ago.

Hackers have turned up embarrassing holes in devices, and financial institutions copped to weaknesses in banking apps. Moreover, it turns out there's plenty of intentional leakage, with data streamed off your phone by some of your favorite apps to support advertising or other functions.

A Wall Street Journal examination of 101 smartphone apps found 47 transmitted your location and five sent personal details like age and gender to outsiders.

Coming next: Extra rigor. Chip makers, carriers, and handset makers are going to roll out new security features to try to make consumers feel comfortable buying products and services on their mobile devices.

CHINA

China, always a ripe market for sellers of mobile gear, gained notoriety this year as a supplier. Equipment company Huawei Technologies Co. expanded its reach in Europe and set off fresh alarm bells in the U.S. with its failed attempt to win a piece of [Sprint Nextel](#) Corp.'s big network upgrade.Meanwhile, Chinese makers of low-cost, unbranded cellphones doubled their market share over the past year to account for 33% of all cellphone sales in the third quarter, according to Gartner. The move put further pressure on companies like Nokia that still sell lots of low-end phones.

Coming next: Chinese smartphones. Huawei Technologies and ZTE Corp. are rolling out Google-powered phones that could be sold by carriers for as little as $50. With Android software available free, China's growing tech savvy and cheap skilled labor make it a competitor to watch.

DIGITAL WALLET

Peter Hoey

It used to be stores had the advantage once you were inside: You knew their price, but not what their competitors were charging. The mobile Web changed all that—and in the process hastened the erosion of their pricing power. Now, shoppers can use their smartphones to find better deals. Chain stores' best hope is that shoppers won't bother, but a host of apps are making the process a lot easier. They include barcode scanners like RedLaser and price-comparison search tool TheFind.

Meanwhile, wireless carriers are looking to turn phones into digital wallets. AT&T, Verizon and T-Mobile USA formed a joint venture with Discover Financial Services in November that will someday let consumers wave their phones in front of a scanner to pay for purchases.

Coming next: Purchasing on mobile phones takes off. It can be clunky, but shoppers will get used to it as smartphone penetration increases. IE Market Research estimates cellphone purchases in the U.S. will jump from $1.61 billion in 2009 to $6.74 billion in 2011.

LOCATION, LOCATION

Everybody had high hopes for location-based services and ads that could be served up on a smartphone right as a person walks by, say, Starbucks. But it hasn't worked out as expected just yet. Outfits such as Foursquare, Gowalla and Loopt attracted media buzz, but they don't seem to be attracting many users. Just 4% of Americans have tried location-based services, and only 1% use them weekly, according to Forrester Research.

Coming next: Try, try again. Foursquare and its brethren are raising lots of funds, and 2011 will be an important year. They will be looking to give consumers more of a reason to continue checking in. Expect more coupons and other marketing offers to roll out.

—Compiled by Andrew Dowell, Spencer E. Ante, Pui-Wing Tam, Don Clark, Yukari Iwatani Kane and Amir Efrati