IDC Analyze the Future

TOP 10 PREDICTIONS

IDC Predictions 2011: Welcome to the New Mainstream

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PREDICTIONS

In 2011, a select group of disruptive technologies — cloud, mobile devices and apps, broadband connectivity, social networking, and analytics — will move beyond "early adopter" status, maturing and coalescing into a "new mainstream" platform for growth both for the IT industry itself and for the industries it serves.

- Worldwide IT spending growth will be a solid 5.7% as hardware growth moderates and software and services spending rebounds.
- Emerging markets, led by China, will continue to drive global IT spending growth, with 2.6 times the growth rate of developed markets, contributing over 50% of all new growth.
- Public and private cloud adoption will surge as two cloud "power position" battles enter high gear and "cloud computing" (as a buzzword) gets ready to fade.
- Cloud-driven datacenter transformations will pick up speed, with continuing integration of datacenter systems and "stacks," the arrival of "cloud ready" enterprise software, and a rising focus on service providers (SPs) as strategic customers.
- The mobility explosion will continue — with huge device volumes, new form factors, and millions (yes, millions) of mobile apps.
- Broadband networks will struggle — and innovate — to keep up as 4G wireless networks crawl to market, Ethernet exchanges mitigate wired bandwidth squeezes, and content delivery networks (CDNs) gain clout.
- 2011 will be a year of consolidation and convergence for social business software vendors as well as a year of strong social networking adoption growth in small and medium-sized businesses (SMBs).
- The expanding digital universe — reaching 1.8 trillion gigabytes — will drive demand for cloud-friendly information infrastructure and real-time analytics for "big data."
- "Intelligent industries" will put mobility and social networking to work to capture the surge in holiday mobile shopping, lay the groundwork to support the explosion in mobile payments, and enable next-generation healthcare.
- The IT and media industries will aggressively position for consumers demanding "I want my Web TV!" with Web-connected TVs, a battle among media/entertainment clouds to be your next (virtual) cable company, and explosive growth in mobile advertising.

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IN THIS STUDY

Welcome to IDC's predictions for 2011 in the information technology and telecommunications industries. Over the next two months, IDC will publish dozens of Top 10 Predictions documents for 2011, each focused on a specific portion of the market: a technology product or service category, a country or region, the consumer market, the small and medium-sized business sector, an industry, or channel and partner networks. In each of these documents, we offer IDC's scenario for each specific segment, identifying the key market forces driving market change and predicting vendor and customer behavior in response to those forces.

In keeping with our 30-year tradition, we start IDC's "predictions season" with this, our broadest outlook for the overall technology marketplace. To create this document, we polled the over 1,000 IDC worldwide analysts for their views on what the coming year holds in store. We narrowed down the literally hundreds of predictions we received from the IDC analyst community, focusing only on those predictions that met the following criteria:

- **High growth.** They illuminate key growth opportunities for 2011.
- **Industrywide impact.** They are relevant to many different segments and players in the IT marketplace.
- **Disruption.** They require major structural change within companies and across the industry and therefore present a unique opportunity for competitive advantage for those companies that recognize and navigate through the market's changes faster and better than others.

We have a strong set of themes and predictions to share with you this year. But as usual — given the limits of format and space — we have had to leave a fair number of important themes and predictions for 2011 on the cutting-room floor. The good news is that as IDC publishes dozens of other more tightly focused predictions documents in the days and weeks ahead, many of those will be highlighted and discussed. We urge you to check in regularly at IDC's Predictions Web page (**www.idc.com/research/predictions11/predictions11.jsp**), where you're certain to find more detailed discussion of your market segment's future.

2011 Predictions Team

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SITUATION OVERVIEW

IDC predictions for the past several years have repeatedly — some might say doggedly — focused on a handful of disruptive technologies and customer segments that we've tracked from the industry's periphery, heading toward their destination at the core of the industry's next 20 years of growth. Not surprisingly, our predictions for 2011 are built around these very same ingredients of IT industry transformation — cloud-based solutions, mobile devices and apps, wireless broadband, virtualization and converged infrastructure, social networking, smart devices, "big data" technologies, and the growing impact of consumer and emerging markets scale and economics.

What's new in 2011 is that the industry will finally see the transition of these from early adoption status to early mainstream adoption — meaning that, for most of these disruptive technologies, adoption will have pushed well beyond the first 10–15% of the market, that vendors are busy packaging the technologies in the form of solutions that are easier for mainstream customers to understand and adopt, and that non-early-adopter customers are poised to integrate the new technologies and solutions as core parts of their IT service delivery.

2011 will be about the coalescence of these disruptive technologies and customer segments into the "new mainstream" platform for growth both for the IT industry itself and for the industries it serves. This restructuring of the market's mainstream will also mean that nearly every assumption of the industry's past two decades — about who the industry's leaders will be, and how they establish and maintain leadership — will be overthrown.

As you look through this year's predictions, you will see that the biggest stories of 2011 revolve around the buildout and adoption of this next dominant IT platform (in our view, the industry's third major platform) — defined by a staggering variety of mobile devices, an expanding mobile broadband network, and cloud-based application and service delivery, with value-generating overlays of social business and pervasive analytics, generating and analyzing unprecedented volumes of information.

The other related and important set of stories will be about how the new IT environment — social, mobile, and virtual — is the launchpad for the industry's biggest opportunity yet: participating in the creation of radically transformed "intelligent industries" — in distribution, energy, financial services, government, healthcare, and manufacturing. As we've noted in prior years' IDC predictions, IT leaders who step out of the traditional IT box and actively participate in the creation of the IT-enabled "intelligent economy" will dramatically expand their addressable market and position for accelerated growth in the coming decade.

In short, 2011 will set the stage for the next decade of opportunity for the IT industry, with vendors positioning both to successfully compete in this new mainstream IT marketplace and to help customers create an "intelligent economy" on top of this mobile, virtual, and social technology platform. The "mainstreaming" of these formerly emerging phenomena means that they can no longer be invested in, or managed, as sandbox efforts around the edges of the market — they will increasingly *be* the market itself.

FUTURE OUTLOOK

In this section, we provide the details of our predictions for 2011, grouped into 10 major focus areas. This year, to improve the "10,000-foot view" of our predictions, we've created a summary table (see Table 1) with key metrics drawn from the detailed predictions, along with comments about what each metric means.

TABLE 1

IDC Predictions 2011: By the Numbers

Key Metric in 2011	Message in the Metric
Worldwide IT spending will grow 5.7%.	A solid year of recovery is expected for the IT industry as hardware growth moderates and software and services rebound.
Emerging markets will drive 27% of IT market spending and 54% of growth.	Emerging markets will drive disruptive new design points for the whole industry.
Public and private clouds will drive 15% of IT spending, growing at four to five times the rate of the overall IT market.	Cloud services are moving from early adopter status to a core part of the new mainstream.
80% of new software offerings will be available as cloud services; by 2014, over one-third of software purchases will be via the cloud.	Microsoft, salesforce.com, Google, IBM, and other vendors that battle to create the largest business app cloud will have a chance to become "the next Microsoft."
Cloud and traditional service providers will account for 12% of IT infrastructure spending, growing to 20% by 2014.	Vendors that are not focused on SPs as strategic customers will be boxed out of growth and miss key SP-driven architectural shifts.
330 million smartphones and over 42 million media tablets will be sold.	The "PC-centric era" is over — within 18 months, app-capable non-PC devices will outship PCs. Emerging markets could disrupt Apple's lead.
One-half of the 2.1 billion people connecting regularly to the Internet will access the Internet through (non-PC) mobile devices.	Mobility is becoming the rule rather than the exception for online access — making mobile IT, commerce, payments, health, and so forth very strategic.
Almost 30% of the $447 billion the National Retail Federation expects in U.S. holiday shopping will be driven by the 24% of shoppers who are active to very active mobile device users.	We all know this percentage will go up and up in the next several years — mobile and social commerce strategies and technologies are become a must-have in retail.
14% of adult Americans will use a mobile health app to manage their health, wellness, and chronic conditions.	Demographics are accelerating this trend. Health reform will make these approaches even more important as the industry shifts to new delivery and reimbursement models.
Over 1 million mobile apps will be available on Apple's iTunes Store and Google's Android Market, combined, as people download over 25 billion apps.	Online media, apps, and services delivery "stores" are the most strategic real estate for the next decade and beyond; the implications are way beyond mobile apps.

TABLE 1

IDC Predictions 2011: By the Numbers

Key Metric in 2011	Message in the Metric
Only 1% of mobile phones will be 4G capable.	Bandwidth providers will still struggle to keep up with demand — making network performance innovators (like CDNs) very valuable.
Social networking software will grow at 38% on average over the next five years; over one-quarter of vendors could be gobbled up in 2011.	Social networking is mainstreaming into enterprises from the consumer world.
The "digital universe" of information and content will expand by almost 50% — to almost 2 trillion gigabytes.	Businesses are drowning in information — and still want more, creating big opportunities for "big data" analytics and management.
Nearly half of TVs 40in. or larger sold in the United States will have networking built in.	This, along with networked TV accessories, will set the stage for the pivotal battle among "media/entertainment clouds."
Mobile advertising in the United States will reach nearly $2 billion — up 120%.	Mobile advertising is a key (and Google-dominated) funding source as mobile/online media, commerce, and entertainment expand (and disrupt) traditional models.

Source: IDC, 2010

As we move into the detail, our first two predictions explore the 2011 growth outlook for the IT industry as a whole, as well as for the increasingly strategic emerging markets.

1. Worldwide IT Spending Growth Will Be Solid, with Hardware Moderating and Rebounds in Software and Services

Worldwide IT spending in 2011 will reach $1.6 trillion, an increase (at constant currency) of 5.7%. This growth rate is modestly down from 2010's better-than-expected 6.4%, but it's important to note that 2010's growth was over 2009's abysmal 3.7% market shrinkage. Thus 2011's 5.7% growth, on top of 2010's good growth, reflects a pretty positive outlook.

However, we expect the growth to be distributed quite differently in 2011 than it was in 2010. In 2010, the hardware sector recorded very strong growth rates (13%), with a surge of capital spending on overdue equipment and infrastructure upgrades. While 2011 hardware growth will still be quite good (7.8%) — driven by converged mobile devices, networking equipment, and PCs — the industry will depend to a larger extent on improvements in software spending (5.3% growth) and related project-based services spending (3.6%), as well as expanding growth in outsourcing (4%). These are significant jumps from 2010 growth rates in software (3.9%) and services (0.9%).

While our outlook for 2011 is generally positive, there are certainly some risks. The biggest risks are related to the U.S. economy (if unemployment stays high and the real estate market enters a new downturn) and Western Europe (where sovereign debt anxieties are still lingering and government austerity measures might inhibit short-term growth). The net impact of disruptive new technology and spending models are also set to play out in 2011, with the potential for more aggressive adoption of cloud computing, virtualization, and mobile devices to drive new spending and opportunities in some areas while having a negative impact in others.

This won't be a banner year for IT spending, with overall growth still lagging behind pre-recession levels, but the recovery of 2010 will broadly continue and the industry will ultimately outpace the rest of the economy.

2. Emerging Markets Will Continue to Lead Global Growth in IT

We predict that 2011 IT spending in emerging markets — including Asia/Pacific (excluding Japan), Central and Eastern Europe, Latin America, and the Middle East and Africa — will continue to briskly outpace that of developed economies. IT spending in these markets will reach almost $440 billion, an increase of 10.4% over 2010 — and 2.6 times the growth rate in developed markets.

One usually finds such large growth disparities only when comparing small emerging segments with large established ones. But this is no longer the case in the comparison of emerging and developed markets: emerging markets are getting to be quite large in absolute terms and will represent fully 27% of all worldwide IT spending in 2011, up from 21% only five years ago; we predict that by 2014, emerging markets will generate over 30% of all IT spending.

Emerging markets' contribution to IT industry growth (that is, new spending above the prior year's level) is even more impressive; we predict that in 2011, these markets will generate over half (54%, to be exact) of all net-new IT spending worldwide.

Not all emerging markets are alike, of course, and that will continue to be the case in 2011 as the BRIC countries (Brazil, Russia, India, and China) will still dominate emerging markets IT spending, accounting for 44% of emerging markets IT spending, with even more robust growth (14.4%). In 2011, China will continue to be the dominant country in this quartet, accounting for 57% of BRIC IT spending — and will be poised to surpass Japan as the second-largest IT market in the world by 2013.

What will be driving this growth in 2011? It will be fueled by eager consumers, growing enterprises, and government focus on ICT. Consumer spending growth in emerging regions will continue to be fueled by an expanding middle class with higher discretionary incomes and a continuing appetite for consumer electronic and IT devices. In emerging economies, for example, smartphone shipments will grow 20% in 2011 against 2010, and PC shipments will grow 2.6 faster than in the developed world.

Fast-paced solution deployments will derive in accelerating growth of enterprise spending, particularly on IT services (9.4% growth in 2011 in emerging markets, 3.9

times faster than in developed economies) and packaged software (10.3% growth and 2.3 times faster).

And as governments with tighter public-debt ratios in wealthier economies, particularly those of oil-rich countries, continue to focus on growth investment, large infrastructure deployments will continue to drive public sector ICT investment.

The bottom line: emerging markets will have a central role in determining vendors' success over the next decade. Vendors that don't *already* have emerging market presence and offerings — particularly in the BRIC markets — will be boxing themselves out of almost 30% of industry spending, and over 50% of industry growth opportunities. And as we'll see in prediction number 5, looking at the impact of emerging markets on mobile device pricing, these markets will drive disruptive new design points for the whole industry — making it even more essential to compete and win there.

The next several prediction areas focus on key developments we predict in 2011 around three core components of the IT industry's new mainstream "platform":

- The maturing cloud service delivery model — both the adoption of cloud services themselves and the transformational impact of cloud delivery on the datacenters that deliver them
- The massive expansion in (mobile) endpoints, and apps around those devices
- The continuing buildout of broadband networks to connect the exploding population of mobile devices and apps to the growing cloud services core

3. Public and Private Cloud Adoption Will Surge, Two Cloud "Power Position" Battles Will Enter High Gear, and a Buzzword Will Get Ready to Fade

For the past three years, we've pointed to the cloud services delivery model as a foundation for the IT industry's next 20 years of growth: it is nothing less than the complete transformation of the industry's core offering and business models. In our view, 2010 was really the first year in which all of the major vendors seemed — with energy — to start building cloud services delivery into the core of their strategic road maps, their offerings and, of course, their marketing.

In 2011, we predict continuing rapid adoption of public cloud services, even faster uptake of the more nascent private cloud model, and intensifying fortification of vendor beachheads around the two most strategic power positions in the cloud services world. We also make — perhaps surprisingly — the ultimate cloud prediction!

- **Public cloud services adoption will grow at over five times the rate of the IT industry.** Worldwide, customers will spend $29 billion on public IT cloud services in 2011, up 30% from 2010 — and on its way to $55 billion by 2014. Strong adoption growth will continue for cloud email, collaboration, application development/test cloud services, and infrastructure services, and will expand to a wider range of business applications. Small and medium-sized business cloud adoption will surge, driven more by midsize than small businesses. Adoption of some cloud resources will top 33% among U.S. midsize firms by the end of 2011 but won't hit even half that level among small firms. We predict that by the end of the year, about 15% of industry revenue, and over one-third of industry growth, will be attributable to public and private cloud service deployment.

- **2011 will be a big year for private cloud services adoption and deployment.** Our preliminary estimate for worldwide 2011 spending on private IT cloud services is $13 billion. This is quite a bit smaller than public IT cloud services, but keep in mind that the introduction of private cloud offerings lagged behind public cloud offerings by several years. In spite of this late start, our research shows significantly stronger customer support for the private cloud model, and we predict the private cloud adoption growth rate over the next four years will exceed public clouds' 26% annual growth. Consequently, it should be no surprise that in 2011 we predict several key pure-play public cloud providers like salesforce.com and Google — to avoid being boxed out of this growth — will partner with infrastructure vendors to create private cloud appliance versions of their public cloud offerings. We caution vendors and customers alike, however, against skewing strategies too heavily toward the private cloud model. While private cloud presents an important — indeed essential — element of suppliers' and enterprises' cloud strategies over the next several years, we caution that its growth trajectory will likely peak by 2015 as an exploding variety of new solutions on public cloud platforms make public clouds a more attractive option for the majority of the market (see cloud power position number 1 point below).

- **Cloud power position number 1: The platform-as-a-service (PaaS) battle will intensify, determining who will be "the next Microsoft."** In IDC's view, the next generation of solutions — enterprise and consumer — are clearly going to be the most broadly deployed on cloud platforms. This solutions shift to the cloud is already under way: in 2011, we predict that over 80% of new software products will be deployed via the cloud model, with less than 20% deployed strictly through the traditional media. By 2014, over one-third of all new business software purchases will be consumed through the cloud/SaaS model. As we noted in last year's predictions, the key question, then, is: On *whose* cloud platforms will these solutions be deployed? Key contenders include Amazon, Google, IBM, Microsoft, salesforce.com, Oracle, VMware, and various telcos. The winner of the cloud platform battle — that is, the player that attracts the largest and richest ecosystem of solution developers to its cloud — will have the kind of market power that Microsoft has wielded for the past decade or more through its huge Windows applications ecosystem. The most obvious events we expect to see in 2011 — to position for this important battle — are vendors' acquisitions to build up their solution platforms. Consequently, among the vendors we expect to strengthen their PaaS positions are Amazon, Dell, Google, HP, IBM, and Oracle. Among the companies with attractive PaaS assets, making them potential acquisition candidates, are Bungee Labs, LongJump, BEA, NetSuite, and Intuit. Another option for some of the potential acquirers is to simply partner with a PaaS platform provider — this could well be the ultimate choice for traditional Microsoft partners HP and Dell. 2011 is also when telcos and pure-play IT services players (e.g., Accenture, CSC) will make a very strategic choice, deciding whether to develop their own PaaS platforms or — as is their tradition — partner with one or more of the PaaS players; we expect most to side largely with tradition. One easy prediction in this space is that 2011 will be the year in which Microsoft will develop a lot of momentum around Azure — making it more essential that others pick up the pace. Or we'll very quickly have the answer to the question, Who will be the Microsoft of the cloud era? The answer will be Microsoft.

- **Cloud power position number 2: This position will form around hybrid cloud management.** As we noted in last year's predictions, an obvious area of growing need among customers — and an opportunity for suppliers to establish strong account control in the cloud era — is to support coherent IT management across multiple public clouds and customers' private clouds and their legacy IT environments. In 2011, look for vendors to accelerate the strengthening and promotion of their offerings in this space — including vendors with traditional software products in this space (CA Technologies, Citrix, Compuware, HP, IBM, Microsoft, Symantec, VMware, et al.), relative newcomers like Cisco and Oracle, and pure-play services companies (Accenture, CSC, HCL, Infosys, PwC, TCS, et al.) playing an emerging "cloud broker/manager" role. We predict that to bolster this hybrid management power position, these contenders will be shopping for companies with attractive cloud deployment and management technologies — like AppDynamics, CloudSwitch, Enomaly, Elastra, and RightScale. In this area, we also call out 2011 as a big year for VMware to continue demonstrating more commitment and credibility higher up the stack. VMware has built a remarkably strong foundational position in the cloud, and strengthened that with its SpringSource acquisition last year. But the company still lacks key functional elements including a database, systems management tools (beyond virtualization management), application performance monitoring and management, and application life-cycle management solutions. Look for VMware to continue filling in these gaps in 2011 as it attempts to build a broader leadership position.

- **The slow death of "cloud computing" will begin by 2012.** As the ultimate evidence that the adoption of cloud services will be mainstreaming in the next 24 months, we predict that the term "cloud computing" — which has been the hottest IT buzzword in the past two years — will start to go into a long decline (as measured by search volumes on Google Trends) by 2012. This is not because the cloud services model itself is a short-term fad; indeed, it will be the opposite: it will be because the market recognizes the cloud model as a fundamental part of IT service delivery — simply the way IT is done, and no longer worth labeling as a special model.

4. Cloud-Driven Datacenter Transformations Will Pick Up Speed

As the adoption of cloud services themselves increases in 2011, we'll continue to see the transformation of datacenter environments that support the cloud model:

- **The integration of datacenter systems and "stacks" and the collision of suppliers will continue.** Last year's predictions emphasized that "converged infrastructure" — the bundling of server, storage, network, operating system, hypervisors, and management — would become a defining feature of the market in 2010. That was certainly the case, as seen with the bidding war between HP and Dell for 3PAR, as well as HP's acquisition of ArcSight and IBM's purchase of Blade Network Technologies (BNT) and Clarity Systems. In 2011, as customers demand simplicity and out-of-the-box integration and interoperability solutions, vendors will continue to look for partnerships or acquisitions to fill in their portfolios to provide "cloud in a box" solutions. We'll see continued footprint expansion within and across layers of the IT stack. Key vendors, and their issues, driving events in 2011 include:

- **Cisco, EMC,** and the **Acadia Alliance.** Is Cisco and EMC's joint partnership strategy enough in this world of converged systems and stacks? Possibly, but we predict a more likely scenario: within the next 18 months, either Cisco and EMC will merge, or Acadia will shift more strongly under control of one of these two partners.

- **Dell.** Dell will continue its aggressive software portfolio buildout. One area to watch is storage management, where we see Dell acquiring a player like CommVault. As the datacenter market consolidates around fewer large vendors, we also expect Dell itself could be on others' shopping lists.

- **HP.** We expect HP, with a new CEO who has a strong background in the software business, to fill in gaps in information management and analytics with likely acquisition candidates including Informatica and Teradata. As noted previously, HP has a very big decision to make about whether it will enter the application middleware/PaaS business or simply partner with Microsoft around Azure. IDC's analysts have debated this vigorously and are split — 60:40 — in favor of a Microsoft partner scenario.

- **IBM.** IBM has been on a shopping spree for smaller technology companies that fill gaps in its converged systems and stacks strategy, and that will certainly continue in 2011. On a bolder note, though, we are doubling down on last year's prediction that IBM will acquire a major network systems player — either Juniper or Brocade. There's an argument that IBM's acquisition of BNT addressed its most pressing networking needs — systems networking — and that core networking is a less urgent need. But we believe that as the cloud model progresses, integration with WAN technologies will become an increasingly important competitive asset. IBM will also be driven in this direction by Cisco's growing competitive role.

- **Microsoft.** Our half-court shot in this area is that Microsoft will acquire a systems company. It's a half-court shot because Microsoft's success derives in good measure from its hardware-neutral role. Furthermore, the hardware business has lower margins than the software business. But it is reasonable — as we enter an era of more converged hardware/software systems and solutions — to ask whether the industry's largest independent software vendor will expand its footprint into the datacenter hardware business. We think the odds are very low, but if it happens, we're at least on record as having raised the question! (Microsoft has, of course, already announced its intent to compete in the "virtual hardware" business through cloud infrastructure-as-a-service [IaaS] offerings; this allows Microsoft to capture some hardware share of wallet without taking the leap into physical systems — and this seems like a wise strategy to us.)

- **Oracle.** Mirroring new rival HP, this software company now has a new hardware-oriented president, which raises questions about how and if Oracle will expand its hardware footprint. We predict Oracle will deepen its systems innovation capabilities by acquiring a semiconductor player. Our analysts have debated the merits of different targets, including Mellanox (Oracle already has a stake), LSI, ARM Holdings, or AMD. We also see enterprise networks as an expansion opportunity for Oracle, which is attempting to reach the $100 billion revenue threshold; we see Oracle, along with IBM, as a potential acquirer of Juniper Networks or Brocade.

- **The next generation of on-premise enterprise software designed, ground-up, for the cloud, will roll out.** We've already seen — as we predicted for the past three years — cloud-inspired integrated hardware/software appliances announced and/or delivered from IBM, Oracle, Microsoft/HP, and others. In 2011, we'll see the cloud model transform on-premise packaged software — with new versions designed, ground-up, for multitenancy, self-service, usage metering, and so forth. The arrival of these "cloud ready" versions of email, collaboration, CRM, ERP, and other enterprise applications will make the implementation of private clouds much more practical for many IT shops.

- **Cloud service providers (SPs) and hosters will become more of a must-have segment.** If it isn't already obvious to datacenter technology vendors, it will become even more so in 2011: it is essential that they compete for, and win, the business of service providers. There are two reasons. One is that as more public and virtual private cloud services are consumed from SPs, more IT resources (and spending) will flow through those SPs. In 2011, we predict that SPs of all types (traditional and cloud) will account for about 12% of combined server and storage spending; by 2014, SPs will account for over 20%. The other reason for building a strong business with these most extreme datacenter customers is about design point: we predict that future enterprise systems will increasingly borrow from technologies and architectures developed for SPs (e.g., massive scale, workload optimization, automated management, and transformation to the cloud services delivery model). Vendors that are not close to, and designing for, SPs' needs will be at a distinct disadvantage in competing for enterprise datacenter business in the coming decade. Dell has been very vocal about its focus on service providers, as has Intel. In 2011, look for more suppliers announcing SP-focused initiatives, organizations, and partnerships; IBM, which has been more enterprise than SP focused, will be one such vendor.

5. The Mobility Explosion Will Continue — with Huge Device Volumes, New Form Factors, and Billions of Mobile Apps

The other defining element of the new IT platform — in addition to the cloud-driven transformation of IT's core delivery and business model — is the radical growth and expansion of endpoints through mobile devices, and an avalanche of new applications designed to maximize their utility and accelerate their adoption:

- **Mobile devices and users will surge, poised to challenge the PC and radically expand the market.** In 2011 — for the first time — there will be over 2 billion users on the Internet, and about half of those will access the Internet through a non-PC mobile device — a more than tenfold increase in just the past five years. Most will be doing so through a converged mobile device — aka a smartphone such as an iPhone, Android phone, or BlackBerry. IDC predicts that in 2011, over 330 million CMDs will ship, a scorching 24% increase over 2010 volumes. When coupled with mobile tablet devices like Apple's iPad (see the media tablets point below), shipments of app-capable, non-PC mobile devices will outnumber those of PCs for the first time within the next 18 months — and there will be no looking back. These devices are fast becoming the most strategic end-user real estate in the market. And as a result, we predict that in 2011, vendors with a PC heritage — like Microsoft and Lenovo — will look to increase their stake in mobile devices by acquiring companies like Motorola and RIM.

- **Media tablets will soar, with iPad holding a big lead in spite of lots of company.** Last year we correctly called the iPad — its name, form factor, and operating system. This year, we predict that the media tablet phenomenon will continue to explode: more than 42 million devices will ship worldwide, strongly surpassing shipments of mini notebooks (netbooks) — the market phenomenon of just two years ago. However, while the netbook share of the market declines in 2011 and beyond, the tablets category is only beginning its ascent — with around 50% compound annual growth expected over the next four years. With that kind of growth, we predict that Apple will have a lot of company in 2011, led by Android tablets from Dell, HP, Samsung, and others. While these companies represent a much larger distribution network than Apple's, Apple won't have to worry much in 2011: we expect the iPad will remain, by far, the most popular product family in the tablet market. In 2012 and 2013, however, the number of Android tablet OEMs, and their distribution network power, will eat away more significantly at iPad market share (as we've seen with the iPhone).

- **The mobile apps war — led by Apple and Google — continues as stakes get huge.** In prediction number 3, we talked about the growing strategic importance of cloud solution platforms, and which vendors would develop the best solution ecosystems. There is another strategic platform war raging, of course — on mobile devices. The level of activity around mobile apps in 2011 will be staggering: IDC predicts that people will download almost 25 billion mobile apps (up from just over 10 billion in 2010), accounting for over $12 billion in revenue (up from $5 billion). Importantly, the impact of mobile apps is not just about apps: spending on mobile apps is already double that from digital music sales, an indicator that the still-emerging apps platform promises to fundamentally restructure the channels for *all* digital content and services to consumers. In 2011, the number of apps will continue to mushroom, led by the Apple App Store, which we predict will reach 750,000 apps (up from 375,000 in 2010, and Google's Android Market, which we predict will reach 550,000 (up from 150,000 in 2010). Android apps will have a very rapid year of app growth fueled by the large number of Android handsets and Android tablets hitting the market, Google TV providing yet another platform for mobile apps, and very little Android app review by Google compared with how heavily Apple reviews apps and curates the Apple App Store.

- **The "app store" phenomenon will spread up from smartphones and tablets to PC software and next-generation enterprise solutions**. The simplicity of the smartphone-based app store model for application marketing, distribution, and upgrade will inspire "app stores" for PC software, as well as enterprise apps (see prediction number 4), with SaaS-based software appliances downloadable to on-premise systems. Expect Microsoft to play a leading role in this as we see the much-rumored Windows App Store arrive in 2011.

- **Emerging markets will begin to dramatically expand and transform the smartphone market.** We predict that in 2011 Android-based entry-level smartphones (like LG Optimus T and Huawei Comet — from "free" to $29.99 with contract) will take the world by storm. Emerging high-growth countries such as India and China will see increased volumes of these kinds of entry-level smartphones that utilize stock Android. Emerging market leaders including Nokia and Samsung will be challenged by new entrants such as MicroMax and other domestic vendors intent on leveraging their knowledge of their domestic market. As India and China become key drivers for growth and become more competitive, OEMs will also look to develop markets in Africa to help gain future market share. What's the message? Players with a focus exclusively on high-end smartphones (e.g., Apple) may see themselves disrupted by the scale and economics of a growing bottom-up phenomenon inspired by emerging markets.

6. Broadband Networks Will Struggle — and Innovate — to Keep Up

Broadband networks are the vital link between the emerging cloud core and the expanding population of mobile endpoints. In 2011, IDC sees the following key developments in the world of broadband network services:

- **The networked population will exceed 2 billion, creating opportunity and stress.** As noted in prediction number 5, over 2 billion people will be connected to the Internet by the end of 2011. By 2016, the networked population will be approaching 3 billion. This Internet connectivity growth will be a vital foundation for growth for the next decade and beyond, but it will also put an amazing amount of stress on carriers' networks. Our following three predictions address the buildout of high-speed wireless and wired networks as well as network optimization services to improve performance.

- **4G wireless broadband will see modest adoption and immodest marketing in 2011.** We noted in last year's predictions that in 2010 hype around 4G wireless networks would far exceed actual deployment. For 2011, we predict that the ratio of adoption to hype will be just modestly better, as only 1 in 100 handsets shipped are 4G capable. As predicted last year, the first wave of offerings are being targeted at mobile PC users, with 4G AirCards and USB modems. But the slow rollout of devices and services won't limit 4G marketing — we predict a 2011 marketing frenzy around educating the market about the value and power of "4G" branding. While limited handset options, spotty coverage, and roaming issues dampen mass adoption until network density increases and the LTE story is better communicated to end users by operators, the 4G marketing wars of 2011 will establish mindshare leadership that carriers hope will translate to market share as 4G becomes a material growth driver in 2012 and 2013.

- **In the world of wired broadband, Ethernet exchanges will grow in importance.** The continued growth of bandwidth demand, coupled with the dearth of metro in-building fiber, will lead to an explosion of growth in services offered via Ethernet exchanges during 2011. Demand for cost-effective "big pipe" bandwidth services is coming from several directions — enterprise datacenter connectivity requirements, disaster recovery/business continuity applications, video/IP telephony support, and transaction-intensive cloud services. Ethernet exchanges provide multicarrier environments for traffic exchange and interconnection, enabling service providers to extend the geographic reach of their networks and provide end-to-end regional, national, or global services to their customers. Companies such as CENX, Equinix, Telx, and Neutral Tandem are the key players in the Ethernet exchange segment. In 2011, we predict they are poised to become significant facilitators of high-speed connectivity for enterprises, industry ecosystems such as financial trading and healthcare, and emerging service provider ecosystems around cloud applications, digital media content, and mobility.

- **The value of content delivery networks will soar in digital media supply chains.** During 2011, Internet consumption patterns will continue to shift from "bandwidth skinny" short-duration activities to always-on applications such as online video, social media, and online games, which place new capacity demands on networks, making optimized last-mile content delivery an imperative. As a consequence, we predict CDNs — such as Akamai, AT&T, Amazon, Level 3 Communications, and Limelight Networks — will usurp tier 1 ISPs and Internet peering exchanges to become the crossroads of the ever-expanding volume of global IP data. IDC expects to see heightened network operator activity in the CDN space during 2011 — reseller/private label agreements with established standalone CDNs as well as development on in-network CDNs that leverage transparent caching technology. We also predict that one or more of the independent CDNs will be acquired by network operators, or by IT services players looking to establish/expand their network services footprint as mobile devices and cloud make network performance an even more critical success factor.

In 2011, as the new IT foundation — mobile, cloud-enabled, and broadband-connected — goes mainstream, two important value-generating overlays will continue to develop on top of that foundation: social networking technologies and information management and analytics.

7. Social Business Momentum Will Drive Consolidation, SMB Adoption

Social business has gained significant momentum in the enterprise, and social platforms are predicted to grow at a compound annual rate of over 38% over the next five years. We believe that — as a sure sign of social business mainstreaming —

2011 will be a year of consolidation and convergence for social business software vendors, as well as a year of adoption expanding into small and medium-sized businesses:

- **Look for a major IPO and lots of consolidation in 2011.** With the rapid growth in social networking momentum in the enterprise, the ranks of social software start-ups have rapidly grown and now number over 100. But that number will decline, as we see in the following events in store for 2011:

  - Jive, the largest social "start up" will have an IPO.

  - We predict that major vendors like Oracle, SAP, Microsoft, HP, Cisco, and IBM will acquire social software vendors to jump-start or increase their social business footprint.

  - Midsize social platform vendors (like Lithium, Telligent, Socialtext, INGage, and Attensity) will consolidate the small niche players (like Socialcast, Yammer, Spigit, Mzinga, and UserVoice) to increase their footprint. This trend started last year and will accelerate in 2011.

  Putting the large player and midtier vendor moves together, we predict that as much as 30% of the vendor marketplace will be acquired in 2011.

- **SMBs will "friend" social networks in a big way in 2011.** With SMB Web site ownership in the United States stalled out just above the 50% mark for several years running, small and midsize firms will increasingly flock to Facebook and other social networks to establish a free online presence that improves their ability to acquire, engage, and retain customers without the hassle and cost of setting up a traditional Web site. We predict that the percentage of SMBs using social networks for promotional purposes will exceed 40% by year-end 2011. On a worldwide basis, use of online resources by SMBs in developing countries will show exceptional growth.

8. The Expanding Digital Universe Will Drive Cloud-Friendly Information Infrastructure and Real-Time Analytics for "Big Data"

Information is the grist of the innovation mill, and in 2011 we will continue to see the buildout of information infrastructure to manage and analyze the nonstop avalanche of information being generated on the new IT platform.

- **The "digital universe" will expand by almost 50%.** In 2011, we predict that the "digital universe" — the amount of information and content created and stored digitally — will grow to 1.8ZB in 2011, up 47% from 2010, and rocketing toward over 7ZB by 2015. Digital video and image creation and replication, accounting for over 90% of the growth in 2011, will be the real driving force — including the impact of transition to digital TV around the world. This is continuing to deluge networks and datacenters, creating opportunities for whoever figures out how best to manage and analyze all of this unstructured information.

- **Growing opportunities for integration, distribution, and management of digital information across all systems and devices will drive more acquisitions.** The expanding sprawl of information and digital content is stored across public clouds and between public/private clouds and legacy systems, and is accessible from a wide range of devices. No supplier has all of these pieces, but all majors clearly see the value in establishing a strong position here. In 2011, then, there will be a continuing buying spree by vendors like Cisco, Dell, EMC, HP, IBM, Microsoft, and Oracle to strengthen their information management capabilities. Likely targets with attractive capabilities include Informatica, Pervasive Software, Autonomy, OpenText, Harmonic, Quantum, Iron Mountain, Caringo, and many more information/content management specialists.

- **"Compliant clouds" will become standard fare.** In 2010, a handful of service providers (including Google, CSC, IBM, and Verizon) came to market with cloud offerings certified to support IT and information governance regulations like FISMA, PCI DSS, SOX, GLBA, and HIPAA. In 2011, look for the introduction of compliant cloud services from virtually *all* major enterprise cloud services providers. As information volumes balloon, one of the big costs for enterprises is complying with mandates for secure information management. Regulatory compliance will be a key accelerator for cloud services adoption as enterprises look to offload this cost to service providers.

- **In a world of increasingly "big data," real-time analytics offerings will be pervasive.** It's becoming very clear that the volumes and velocity of information are becoming so great that the old model of storing for later analysis doesn't work. We commonly hear our CIO and line-of-business executive clients say, with frustration: "We don't know what's in our data, and we can't manage it — and we want more!" In 2011, therefore, we predict that new players and traditional ones will come to market with "real-time/stream analytics" offerings. Virtually all traditional business analytics vendors focused on data warehousing will have some level of Hadoop or MapReduce support to address the "big data" opportunity. Attractive acquisition targets will include Appistry, Aster Data Systems, DataSift, and Teradata. Further, we predict that — in a bid to establish faster and broader adoption, and drive analytics pervasively into the growing fabric of cloud services and solutions — vendors will make real-time/stream analytics offerings available as cloud/Web services.

9. "Intelligent Industries" Will Put Mobility, Social Networking to Work

As noted previously, IDC's "uber thesis" for IT industry growth and transformation is that the new mainstream IT platform — mobile, cloud-enabled, broadband-connected, social, and information-rich — will lay a foundation for IT vendors to support (and profit from) "intelligent industry" transformations. Here are just a few of our 2011 predictions for progress down this "intelligent industries" path in retail, financial services, energy, and healthcare. In 2011, we predict that a growing number of IT industry players will step above the IT foundation and establish strong industry transformation expertise to capitalize on these and other intelligent industry opportunities:

- **Retail — mobile and social commerce will loom large in the 2010 holiday shopping season.** The 24% of shoppers who are either super connected, or moderately connected, through mobile devices — and are very comfortable using mobile devices to support their shopping — will drive almost 30% of the $447 billion the National Retail Federation expects in U.S. holiday sales volume this year. They will use their mobile devices to research, compare prices of, and/or purchase goods and services during the holiday shopping season. This is a surge from last year — in a recent IDC Retail Insights survey, 40% of shoppers planned to using their mobile devices more or much more than last year. And social media will be an increasingly strategic part of retailers' strategies in 2011 — in a recent survey, IDC Retail Insights found that about 50% of all age groups consider friends' opinions influential to very influential in their purchase decision, and that one-quarter of 18- to 54-year-olds use social media to seek those friends' opinions. Facebook, Twitter, and other online social communities are becoming prime locations in the retail world."

- **Financial services — 2011 will be an important year for "tilling the soil" in mobile payments.** Given the holiday shopping prediction above, this should be no surprise. Banks, mobile network operators, payment networks, retailers, and technology firms will all be seeking to take advantage of the growing power and ubiquity of mobile devices. In the United States, AT&T Wireless, Verizon Wireless, and T-Mobile USA have created a joint venture, Isis, that in late 2011 will launch a new mobile payments network based on near-field communications (NFC) technology. NFC chips embedded in smartphones will use the same readers that are currently used for contactless cards like PayPass and Visa Wave. At the same time, Visa and technology partner Device Fidelity will be rolling out their own NFC solution, using the microSD expansion slot found in many mobile phones, or a special case developed for smartphones like the iPhone and BlackBerry. Visa will be partnering with several major banks, including U.S. Bank and Bank of America. Both Google and Apple will be introducing their own NFC-based systems, and First Data Corp. is working with Tyfone on a fifth NFC-based mobile payments system. While these efforts will operate in parallel in 2011 with minimal cooperation, we predict that they will ultimately start to merge as the sponsors find that they cannot get to the necessary scale on their own. Experience in other countries, such as Japan and South Korea, shows that successful mobile payment systems are based on direct control of both banking and telecommunications assets, which gives access to both the money and the means of exchanging it. However, in the United States, attitudes have been colored by the success of Apple at building a closed system for delivery of digital content, leading both banks and mobile operators to pursue similar closed strategies. We believe that Apple enjoys a unique position, however, and that its model cannot be emulated successfully by later entrants. A multiplicity of rival closed systems will only serve to fragment and confuse the market, leading to disappointing adoption. Weaker schemes will merge with stronger ones, and the stronger systems will link together using open standards. Only when the banks and mobile operators begin to cooperate will mobile payments truly succeed.

- **Energy — 2011 rollouts of plug-in electric vehicles will "drive" smart grid investments.** In 2011, the Chevy Volt and the Nissan Leaf will both be commercially available. And by 2015, more than 2.7 million plug-in electric vehicles (PEVs) capable of connecting to electricity grids will be on the road worldwide, driving new investments in smart charging infrastructure, wireless communications, analytics, and cloud services. Global penetration of PEVs could reach 7.7 million by 2020. Notably, GE just placed an order for 25,000 PEVs, at least half of which will be Chevy Volts. We predict that electric utilities will be challenged to provide adequate public charging stations — opening up opportunities for third-party service providers.

- **Health — In 2011, 14% of all adult Americans (approximately 31 million), up from 9%, will use a mobile health application to manage their health, wellness, and chronic conditions.** Mobile phones have reached a near ubiquitous state among certain demographics, and application usage is on the rise along with the use of smartphones. According to an IDC Health Insights study regarding monetizing telemedicine, nearly 90% of 18- to 34-year-old consumers use a mobile phone. Increasingly, consumers are using smartphones. These findings will have far-reaching implications for healthcare providers and consumers as the delivery of healthcare is shifted beyond inpatient and ambulatory care settings to wherever the consumer may be, whether that's at home, at work, or on the go. The mobile phone is one device consumers always carry and rarely forget, so its potential to manage and monitor health is significant. Mobile health applications are being developed and promoted by payers, providers, and other healthcare stakeholders, as well as technology vendors ranging from start-ups to enterprise vendors. Bluetooth-enabled remote patient monitoring devices, such as glucometers, blood pressure cuffs, and weight scales, will enable consumers to upload their vital signs to mobile applications that will provide them with real-time feedback and send clinically relevant alerts to their care managers. Examples include WellDoc's DiabetesManager System for mobile phones, OptumHealth's health and wellness app for iPhone and Android (with Facebook updates), and Henry Ford Health System's emergency room wait-time mobile app. Mobile health applications that engage consumers to better manage their health and chronic conditions will be essential as the healthcare industry transforms itself from encounter-based reimbursement to new care delivery and reimbursement models, such as accountable care organizations and patient-centered medical homes, to meet health reform objectives.

10. Industry Positions for Customers Demanding "I Want My Web TV!"

In the consumer world, there will be an enormous amount of change and opportunity for the IT industry in 2011. A few items (IDC's full set of consumer predictions for 2011 will be published on idc.com in the next 60 days) that will loom large in the television, digital media, and mobile advertising spaces are:

- **Nearly half of televisions 40in. or larger sold in the United States in 2011 will have networking built into them.** By the end of 2012, talking about a "networked television" will be almost as redundant as talking about high-definition televisions. This will be a very important development, but a much higher impact one will be around *where* online those consumers will go via those connected TVs and complementary consumer devices (DVD players, Apple TV, Roku, et al.).

- **The battle among Web "media/entertainment clouds" will define the next decades of media.** In 2011, the long-awaited vision of Web video (remember WebTV?), accessed "over the top" of broadband Internet access services — and bypassing cable carriers as content gatekeepers (and toll takers) — will begin to take form in a way that takes the model mainstream. The emerging cluster of curated "media/entertainment clouds" — Amazon, Google/YouTube, Hulu, Netflix, and (inevitably) Apple — have the chance to become your virtual cable networks. The fact that Google and others are snapping on an advertising model (a better one — more targeted and interactive) to this entertainment delivery model is promising — bringing a viable funding model along with it. Yes, Web TV is overhyped right now, compared with its current financial impact, but this trend does seems inexorable — providing more choice, and lower cost for the consumer, as adoption is made simpler for regular folks (versus tech-savvy geeks). 2011 will be a big year for competitors to establish their beachheads in this looming market megashift. We predict that Microsoft will make a play to acquire one of these media clouds — perhaps Netflix — in an attempt to tap into this opportunity, provide a much-needed increase in Microsoft's consumer relevance, and strengthen the company in its increasing competition with Apple and Google.

- **In mobile advertising, the market will double, Google will crush the competition, and acquisitions will abound.** Mobile advertising is one of those rare areas where actual growth is greater than the hype: we predict that 2011 mobile ad spending in the United States alone will reach close to $2 billion, 120% higher than 2010 levels (which, in turn, were 140% higher than 2009 levels). But there is only one company that will benefit from most of that growth: Google. Already an estimated 54% of all mobile online advertising in the United States is being spent on mobile search ads, and in 2011, that share is not going to decline. And in search ads, Google so thoroughly dominates — with a sales market share around 90% — that Yahoo! and Bing will have an even harder time competing with it than in the desktop world. Google plays a prominent role in the other 46% of mobile ads — display ads — with a 19% share. Only Apple was on par with Google in display, but as Android devices are going to outsell iOS devices, Google is set to gain market leadership in display as well. All in all, taking into account search and display ads, Google will almost certainly grow its total 2010 mobile online ad market share of 60% even further. All of the above means acquisitions will be rampant in 2011 as bigger players such as Google, Apple, Yahoo!, and Microsoft acquire to gain market share, or technology and talent, by purchasing mobile start-ups. The two remaining independent ad networks, Millennial Media and Jumptap, have been on the block for a while but might well be bought if the price is right. Smaller player Greystripe, which specializes on rich-media and video ads, might also be a target.

ESSENTIAL GUIDANCE

For the past several years, a handful of disruptive technologies — cloud-based solutions, mobile devices and apps, wireless broadband, virtualization and converged infrastructure, social networking, smart devices, and "big data" technologies — have been emerging as key ingredients in a looming transformation of the IT marketplace.

"What's new" in 2011 is that — finally — these disruptive technologies are moving beyond "early adopter" status: maturing and coalescing into a "new mainstream" platform for growth both for the IT industry itself and for the industries it serves. Importantly, they are also being integrated with each other — cloud with mobile, mobile with social networking, and social networking with "big data" and real-time analytics — in ways that bring much greater value to the marketplace. The mainstreaming of these formerly emerging phenomena means that they can no longer be invested in, or managed, as sandbox efforts around the edges of the market — they will increasingly *be* the market itself.

The restructuring of the market around this new mainstream means developing and/or acquiring, and integrating, these disruptive technologies. But it also requires rethinking your organization's aspirations and capabilities in the market — its offerings, target customer segments, partnership strategies, and business models. Thinking about your own strategies for 2011 and beyond, it will be critically important to ask, Are we positioned to successfully compete in the "new mainstream" IT marketplace and, further, do we want to step above the IT foundation and help customers create an "intelligent economy" on top of this mobile, virtual, and social technology platform?

As you explore these questions in 2011, it will be important to recognize that nearly every assumption of the industry's past two decades — about who the industry's leaders will be, and how they establish and maintain leadership — will be overthrown.

LEARN MORE

To see the rest of our predictions — as well as the dozens of Top 10 Predictions documents we will publish in December and January, each focused on a different segment of the IT industry — visit IDC's predictions page at **www.idc.com/research/predictions11/predictions11.jsp**.

Related Research

- *Worldwide and U.S. Mobile Applications, Storefronts, and Developer 2010–2014 Forecast and Year-End 2010 Vendor Shares: The "Appitization" of Everything* (IDC #225668, forthcoming)
- *Worldwide Black Book Query Tool, Version 3, 2010* (IDC #225505, November 2010)
- *IDC Predictions 2010: Recovery and Transformation* (IDC #220987, December 2009)
- "IDC Predictions 2009: An Economic Pressure Cooker Will Accelerate the IT Industry Transformation" (**http://blogs.idc.com/ie/?page_id=276**)
- "IDC Predictions 2008: The Post-Disruption Marketplace Takes Shape" (**http://blogs.idc.com/ie/wp-content/uploads/2009/04/idc-predictions-2008.pdf**)

Synopsis

This IDC study starts IDC's annual "predictions season" with a look at what IDC sees as the emergence of the IT industry's "new mainstream." This new IT marketplace will finally "arrive" in 2011 as disruptive forces we've seen percolating in the past several years — cloud-based solutions, mobile devices and apps, wireless broadband, virtualization and converged infrastructure, social networking, smart devices, and "big data" analytics — move from early-adopter status to the beginnings of mainstream adoption.

According to IDC Chief Analyst Frank Gens, "The next decade of opportunity for the IT industry will be about two things: successfully competing in this new mainstream IT marketplace and helping customers create an "intelligent economy" on top of this mobile, virtual, and social technology platform."

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