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Forecast Overview: Public Cloud Services, Worldwide, 2011-2016, 2Q12 Update

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This document outlines the assumptions, analyses and insights for the public cloud services market, which will grow at a compound rate of 17.7% through 2016. Strategists, planners, marketers and solution managers should leverage the data to refine their strategies to capitalize on this growth.

Key Findings

- The worldwide market for public cloud services across all segments grew 20.8% to $91.4 billion in 2011, up from $75.6 billion in 2010.
- Infrastructure as a service (IaaS) is the fastest-growing segment of public cloud services, with a compound annual growth rate (CAGR) of 41.7% (2011 through 2016). IaaS spending will surpass $72 billion from 2012 through 2016.
- Growth in the software as a service (SaaS) market is slowing, with annual growth rates of 25.7% in 2011 and 21.3% in 2012 and a five-year CAGR of 17.4%.
- Emerging Asia/Pacific (including India and Indonesia) has the highest projected growth of all regions, with a 31.8% CAGR, followed by Greater China (30.0%), Latin America (26.4%) and Eurasia (25.9%). Despite high growth rates in emerging countries, spending in North America will account for 61% of total public cloud services spending from 2010 through 2016. Western Europe will have the lowest forecast growth, with an 11.8% CAGR.

Recommendations

- The cloud services market is clearly a high-growth sector within the overall IT marketplace. The key to taking advantage of this growth will be understanding the nuances of the opportunity within service segments and geographic regions, and then prioritizing investments in line with the opportunities.

- The highest-growth segment of the cloud services market, IaaS, will be a difficult market in which to compete. End-user spending will increase while margins erode as the competitive landscape becomes more crowded. The slower-growth segment of business process as a service (BPaaS) will provide higher-margin opportunities for providers that can map business consultancy competencies to BPaaS opportunities. Providers should balance short-term growth initiatives with long-term, sustainable strategies for competing in cloud markets.
- Investment priorities and commitments targeting specific cloud market opportunities need to be balanced with viability, credibility and capability within each region. Service providers must not underestimate the importance of their presence in the regions where they operate. Focused and prioritized marketing investments are an absolute necessity to establish the right presence.
- China will show high growth through 2016, with compound growth of 31.0% through the forecast period. During this time frame, China will also surpass all other countries except the U.K. and the U.S. in total market size. As cloud services providers develop plans for China, they must also consider the specific challenges of operating in China, regarding privacy, accessibility, security, and governmental regulation and control.
- High growth rates will occur in emerging markets, including the top three growth countries of India, Indonesia and China. However, 79% of spending increases will come from North America and Western Europe over the next five years. Cloud services providers must not neglect the high-volume markets of North America and Western Europe in favor of the high-growth markets in Asia and Latin America.

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Overview

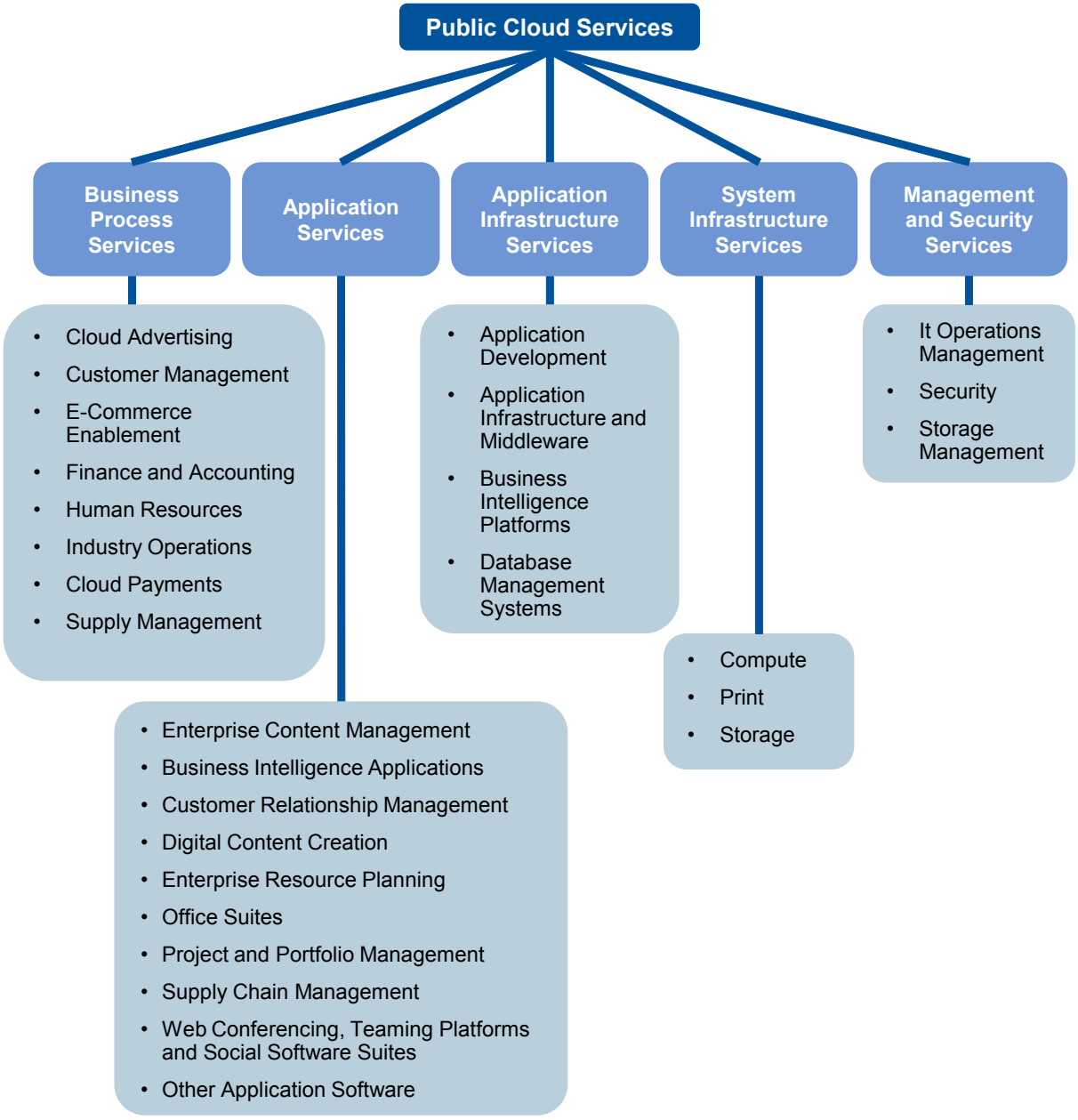
With the publication of "Forecast: Public Cloud Services, Worldwide, 2010-2016, 2Q12 Update," Gartner introduces a new forecast methodology and an updated market segmentation for the public cloud services market. As this market continues to grow and develop, we will continuously evolve forecasting processes and market segmentation to accurately reflect the current and future state of the public cloud services market.

Gartner's public cloud services forecast is updated and published quarterly, with the latest forecast publication in June 2012. Each public cloud services forecast is delivered with accompanying documents, including a Forecast Overview report (this document) and a companion Market Definitions and Methodology document, which will be updated as necessary to reflect current market segmentation and forecasting methodologies.

For a detailed review of the public cloud services market segments, subsegments and geographic breakout of forecast data, including country-level details, see "Market Definitions and Methodology: Public Cloud Services."

Within this Forecast Overview, we refer to the public cloud services market segments and subsegments. In Figure 1, we provide a summary of the public cloud services market segmentation as an outline for the content contained in this document.

Figure 1. Public Cloud Services Market Segmentation



Source: Gartner (August 2012)

Assumptions

The strong growth of the public cloud services market is expected to continue through 2016. Macroeconomic conditions continue to show signs of uncertainty impacting IT spending in general; however, these conditions are expected to favor the move to externalization of IT services, including

the adoption of cloud services. Gartner survey data and analyst insight indicate a focus by CIOs on driving business growth through cloud-related initiatives, making it a top priority in their investment strategies for the future. Furthermore, additional survey data indicates an increasing number of cloud-related IT purchasing decisions are being made or influenced by business managers (rather than internal IT managers) who see cloud computing as an effective means to address their business priorities.

Macroeconomic and Geopolitical Factors

Ongoing economic uncertainties continue to be fueled by the eurozone debt crisis and other global economic growth factors, including sluggish economic growth in the U.S., as demonstrated by weak employment growth, as well as slowing growth in China, India and Brazil. The effect of global economic conditions on the public cloud services forecast, particularly in the large markets of the U.S. and Western Europe, is to lower global forecast growth expectations in the short term based on expected lower IT spending overall. Over the forecast period, we anticipate a return to stronger growth in many IT-related markets — cloud services in particular.

IT Budgets

CIO and CFO IT budgets demonstrate continued caution regarding IT spending (reflecting concerns over economic conditions and uncertainty in global markets). We anticipate IT budgeting will remain at conservative levels for the near term. However, IT continues to be seen as a key factor in driving business growth, which results in continued investment in IT-related projects. In many respects, cloud services benefit from global economic conditions as organizations look for ways to increase innovation and productivity while reducing costs. The externalization of IT through cloud services provides a means to potentially reduce costs and shift IT budgets from tightly constrained capital expenditures to operating expenses using the cloud services model.

We also see business-line managers exercising increased control over IT-related spending when it concerns cloud services. The demands of business and the need for increased agility are contributors to growth in cloud services overall.

Trends in Cloud Services Adoption

Across all regions, 40% of respondents in a recent Gartner survey indicate they are using cloud services in some form delivered from an external service provider, and nearly 25% have plans to start using cloud services in the next 12 months.[1] Public cloud services adoption will grow 19.6% worldwide in 2012. This growth rate is down slightly from previously forecast growth of 20.8% (see the Reconciling Gartner's Previous Public Cloud Forecasts With the 2Q12 Update section for a comparison of current forecast statistics with the previously published public cloud services forecast).

Countries experiencing high relative economic growth rates are also seeing high growth rates in adoption across all technology sectors, including cloud services. While cloud services adoption remains high in North America and Western Europe, the highest growth will be in the emerging countries of Asia/Pacific, Eastern Europe, Latin America and Eurasia.

Cloud Services Provider Landscape

The past several years have seen the introduction of many new providers, as well as new cloud-based offerings. The ubiquity of cloud services, as delivered by providers today, represents critical mass in the market now that will help drive future adoption of cloud services. Put another way, when looking at supply and demand in the cloud marketplace, we now see strong demand from customers met by numerous cloud services offerings delivered by suppliers. The combination of strong demand and ready supply creates a growth market that will increase adoption of cloud services. It will also have the effect of lowering prices for consumers, which further fuels demand.

IaaS is a good example of a specific segment that will benefit from the proliferation of new cloud-based services. Over the past quarter, new IaaS offerings have been announced, including those from big industry players Microsoft (Azure infrastructure services) and Google (Google Compute Engine). The increasing maturity of cloud services offerings, the ubiquity of cloud services generally, and the increasing number of cloud services providers entering the market all contribute to increased growth rates in cloud-related services.

In addition to cloud services providers, traditional IT services providers are helping drive increased demand through professional services and consulting offerings. Cloud workshops and assessments are becoming a common component of IT services providers' service portfolios, driven by customer demand and competitive pressure. Additionally, cloud-related service contracts and deployments are becoming larger as consumers move beyond the trial stage to deployment of production services.

The combination of widespread cloud services availability coupled with professional services driving demand has a positive upward influence on cloud spending today and through the forecast period.

Other Factors Influencing Public Cloud Services Market Growth

On-Demand Deployment Model

The on-demand deployment model is a software deployment model that responds to the sometimes unpredictable and ever-changing needs of an enterprise organization. As IT has become a bigger factor in business innovation and competitiveness, the need for IT services that can respond to changing conditions has been a growing requirement. Consequently, the on-demand deployment model has been growing for the past decade, but its popularity has increased significantly within the past five years.

Cloud-Related Security Issues and Concerns

Security issues related to cloud computing continue to be a top concern for organizations; however, these concerns are diminishing over time as cloud services offerings mature and demonstrate viability. This has had an overall positive impact on the adoption of cloud services as buyers gain greater confidence in the security of cloud services and increase their trust and confidence in the providers.

(That is not to say that all security concerns have been addressed by providers. Security concerns are still one of the top inhibitors to cloud adoption.[1])

Notable Growth in Cloud Services Providers' Cloud-Related Revenue

Cloud services providers continue to grow cloud-related revenue as a larger portion of overall corporate revenue. This is true of providers that have been delivering IT services and software and are now transitioning to include cloud services in their portfolio of offerings.[2] Additionally, "pure play" cloud services providers (those that entered the market strictly based on their cloud services offerings) are also reporting growth in their revenue. This signals an overall upward growth trend in cloud-based services.

Global Growth

North America- and Western Europe-based cloud services have now spread globally as global providers expand their cloud services footprint, in addition to many local and regional cloud computing providers entering the market. This signals a validation of the business models used to support a cloud services offering, as well as confidence on the part of the providers for continued and sustained growth in worldwide markets.

Cloud Services Provide Cost Savings

End-user organizations are increasingly looking to reduce IT costs and increase business growth through several common trends, namely outsourced IT services, standardization of applications and infrastructure, and cloud computing alternatives to traditional on-premises IT implementations.

Forecast Data

This Forecast Overview updates previous Gartner public cloud forecast data and analyses, and it incorporates an updated segmentation of the public cloud services markets. This overview is a companion piece to the public cloud services forecast update for 2Q12, published separately in June 2012 (see "Forecast: Public Cloud Services, Worldwide, 2010-2016, 2Q12 Update").

The forecast data for the public cloud services forecast is derived from four notable sources:

- Gartner's "Forecast: IT Services, 2010-2016, 2Q12 Update."
- Gartner's "Forecast: Enterprise Software Markets, Worldwide, 2011-2016, 2Q12 Update."
- Additional cloud-related forecast information derived from Gartner's IT spending forecast (see Note 1 for an overview of Gartner's global IT spending forecast).
- Cloud advertising, which represents additional cloud-related spending not tracked in Gartner's IT spending forecast.

From 2011 through 2016, there will be a notable shift in IT spending from traditional IT services and enterprise software spending to cloud-based services. For a more detailed review of the impact of cloud services on traditional IT outsourcing and enterprise software markets, see the associated Forecast Analyses for these two markets:

- "Forecast Analysis: IT Outsourcing, Worldwide, 2010-2016, 2Q12 Update"
- "Forecast Analysis: Enterprise Application Software, Worldwide, 2011-2016, 2Q12 Update"

A summary of the public cloud services forecast data is shown in Table 1.

Table 1. Public Cloud Services Forecast, 2010-2016, 2Q12 Update (Billions of Dollars)

	2010	2011	2012	2013	2014	2015	2016	CAGR (%) 2011-2016
Cloud Business Process Services (BPaaS)								
Cloud Advertising	34.16	43.24	52.89	61.42	71.79	83.19	95.06	17.1
Customer Management	2.16	2.33	2.61	2.99	3.37	3.77	4.19	12.4
Finance and Accounting	1.19	1.29	1.39	1.53	1.70	1.90	2.13	10.5
Human Resources	10.22	10.69	10.95	11.81	12.83	13.75	14.67	6.5
Industry Operations	2.05	2.21	2.50	3.07	3.57	3.96	4.45	15.0
Supply Management	2.45	2.70	2.86	3.26	3.75	4.14	4.53	10.9
Cloud Payments	4.40	4.71	5.51	6.66	7.82	9.18	10.69	17.8
E-Commerce Enablement	4.30	4.77	5.47	6.48	7.29	8.19	9.02	13.6
Cloud Business Process Services (BPaaS) Total	**60.94**	**71.94**	**84.18**	**97.22**	**112.12**	**128.09**	**144.74**	**15.0**
Cloud Application Services (SaaS)								
Enterprise Content Management	0.20	0.26	0.37	0.51	0.63	0.71	0.88	27.6
Other Application Software	1.20	1.47	1.69	1.98	2.24	2.52	2.88	14.5
Office Suites	0.11	0.24	0.41	0.58	0.80	1.01	1.30	40.7
Digital Content Creation	0.10	0.22	0.28	0.37	0.49	0.72	0.87	32.2

Project and Portfolio Management	0.15	0.25	0.32	0.44	0.55	0.62	0.69	22.6
Customer Relationship Management	3.19	3.94	4.91	5.72	6.42	7.14	7.96	15.1
Business Intelligence Applications	0.14	0.22	0.29	0.38	0.48	0.61	0.75	27.9
Web Conferencing, Teaming Platforms and Social Software Suites	1.81	2.03	2.24	2.51	2.80	3.11	3.45	11.2
Enterprise Resource Planning	1.50	1.97	2.36	2.81	3.27	3.81	4.39	17.3
Supply Chain Management	1.06	1.30	1.55	1.95	2.38	2.86	3.38	21.1
Cloud Application Services (SaaS) Total	**9.46**	**11.88**	**14.42**	**17.28**	**20.05**	**23.12**	**26.55**	**17.4**
Cloud Application Infrastructure Services (PaaS)								
Application Development	0.14	0.21	0.27	0.34	0.41	0.49	0.57	22.2
Database Management Systems	0.01	0.02	0.03	0.04	0.06	0.08	0.12	48.5
Business Intelligence Platforms	0.01	0.03	0.04	0.06	0.09	0.11	0.13	38.9
Application Infrastructure and Middleware	0.43	0.65	0.87	1.13	1.43	1.75	2.10	26.5
Cloud Application Infrastructure Services (PaaS) Total	**0.60**	**0.90**	**1.20**	**1.57**	**1.99**	**2.44**	**2.92**	**26.6**
Cloud System Infrastructure Services (IaaS)								
Print	0.05	0.07	0.08	0.09	0.11	0.13	0.14	16.6
Storage	0.64	0.85	1.14	1.74	2.43	3.20	4.04	36.6
Compute	2.19	3.36	4.99	7.43	11.07	15.56	20.25	43.2

Cloud System Infrastructure Services (IaaS) Total	**2.88**	**4.27**	**6.22**	**9.26**	**13.61**	**18.89**	**24.44**	**41.7**
Cloud Management and Security Services								
Security	1.09	1.42	1.93	2.51	3.16	3.68	4.12	23.7
IT Operations Management	0.05	0.12	0.21	0.35	0.43	0.53	0.62	38.2
Storage Management	0.61	0.84	1.18	1.67	2.21	2.76	3.20	30.6
Cloud Management and Security Services Total	**1.75**	**2.39**	**3.32**	**4.53**	**5.81**	**6.97**	**7.94**	**27.2**
Public Cloud Services Total	**75.62**	**91.39**	**109.33**	**129.86**	**153.58**	**179.51**	**206.60**	**17.7**
PaaS = platform as a service								

Source: Gartner (August 2012)

Third-Party Data

In the production of Gartner public cloud services forecast data, the following third-party data sources were used:

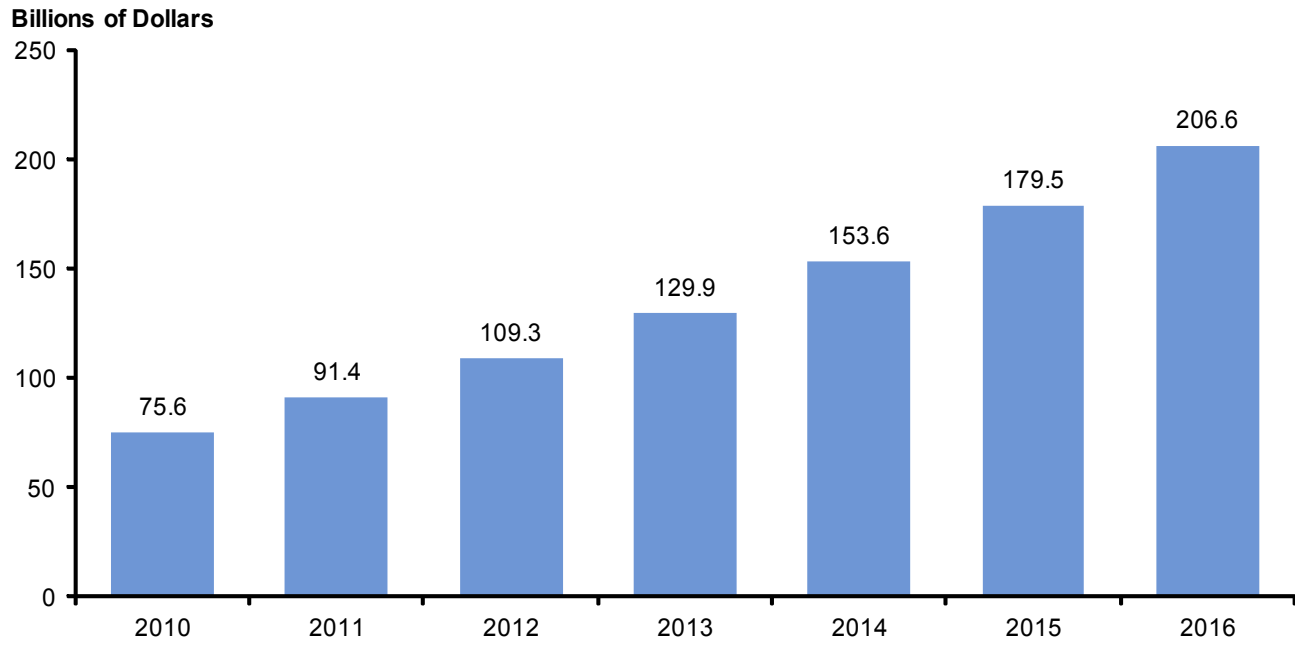
- comScore, for advertising-network-related metrics
- The Interactive Advertising Bureau (IAB) for data on display advertising
- PwC's "Global Entertainment and Media Outlook: 2012-2016" report
- McKinsey & Co.'s "Banking Practice — Micro-, Small and Medium-sized Enterprises in Emerging Markets: How Banks Can Grasp a $350 Billion Opportunity"

Analysis

Public Cloud Services Worldwide

The public cloud services market is forecast to grow 19.6% in 2012 and continue to grow at a CAGR of 17.7% from 2011 through 2016. The cloud market will grow from its estimated size of $75.6 billion in 2010 to $206.6 billion in 2016. Figure 2 outlines the absolute market size accounting for end-user spending on public cloud services.

Figure 2. Public Cloud Services Market Size, 2010-2016

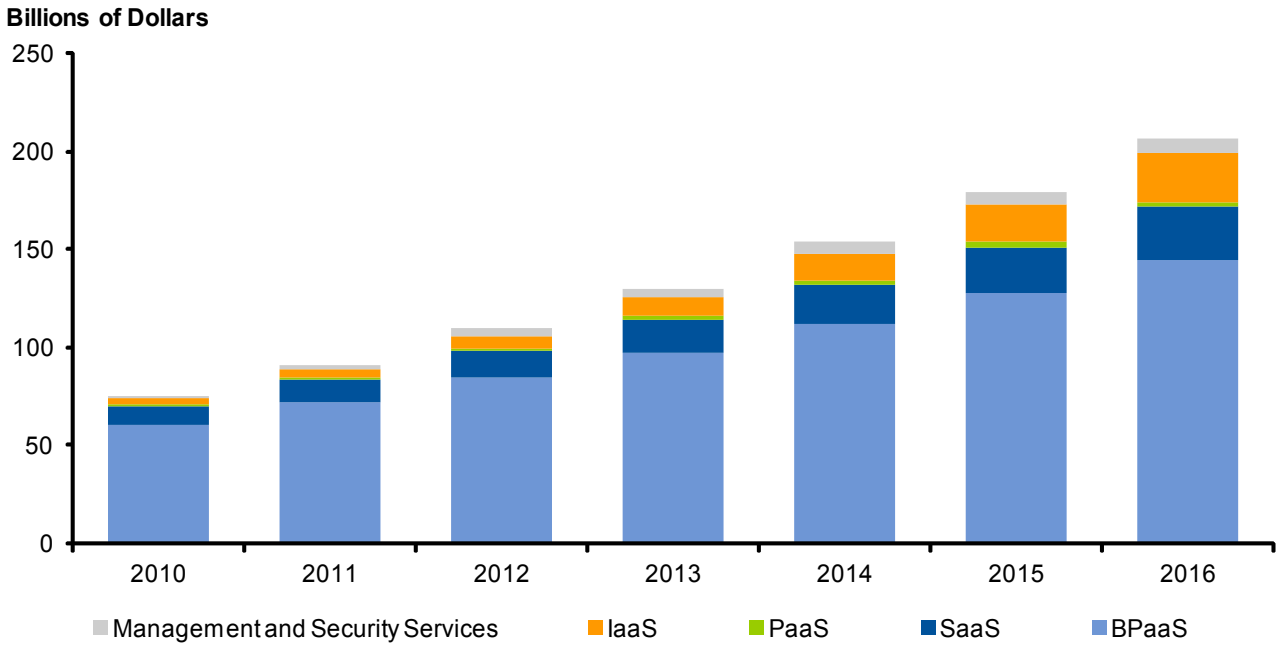


Source: Gartner (August 2012)

Among the primary segments identified in the public cloud services forecast, business process services (BPaaS) represents the largest segment, accounting for about 77% of the total market. This is primarily because of the inclusion of cloud advertising as a subsegment within BPaaS. In 2011, cloud advertising represented about 47% of the total public cloud services market, making it the biggest identifiable subsegment in the forecast. Throughout the forecast period, cloud advertising will continue to account for about 47% of total public cloud services spending. Figure 3 outlines the relative size of each cloud market segment and its contribution to the public cloud services forecast.

Also note the growth of IaaS, the fastest-growing segment of the public cloud services market. In 2010, the IaaS market was less than one-third the size of the SaaS market. By 2016, the IaaS market will grow to almost equal the size of the SaaS market. This is due to the higher forecast growth rates of IaaS for the next five years.

Figure 3. Public Cloud Services Market Size by Segment, 2010-2016

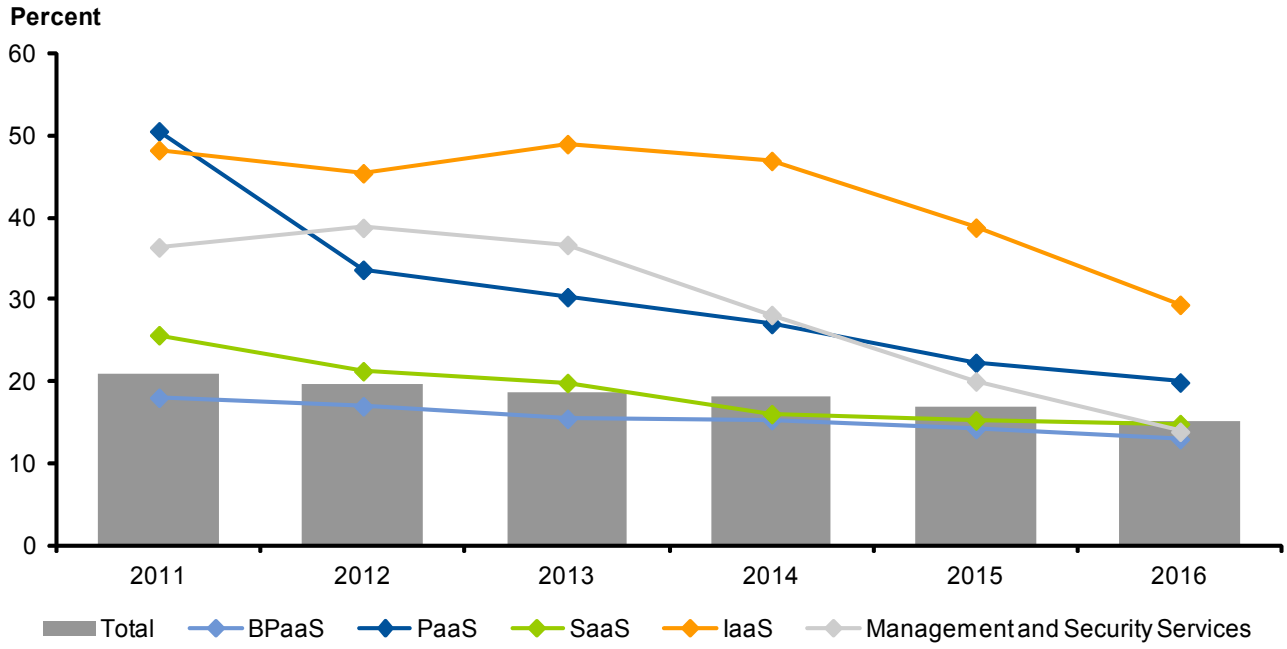


Source: Gartner (August 2012)

The annual growth of the public cloud services market is expected to decrease slightly over the forecast period as cloud services become more ubiquitous. We anticipate accelerated growth rates in the short term, led by cloud system infrastructure services (IaaS). Cloud services supporting management and security and application infrastructure services (PaaS) will also experience high growth in the short term. These high growth rates are offset by lower growth rates in SaaS and BPaaS, making the overall growth rate of cloud services 20.8% in 2011, declining to 15.1% by 2016. Even with declining growth rates, the absolute size of the cloud services market will continue

to grow at an estimated CAGR of 17.7% over the forecast period (2011 through 2016). Figure 4 outlines the relative growth for each segment of the cloud services market.

Figure 4. Public Cloud Services Annual Growth Rates by Segment, 2011-2016



Source: Gartner (August 2012)

Table 2 outlines annual growth rates for each primary segment of the cloud services market.

Table 2. Public Cloud Services Growth Rates by Segment, 2011-2016 (Percent)

	2011	2012	2013	2014	2015	2016	CAGR 2011-2016
Cloud Business Process Services (BPaaS)	18.1	17.0	15.5	15.3	14.2	13.0	15.0
Cloud Application Services (SaaS)	25.7	21.3	19.9	16.1	15.3	14.9	17.4
Cloud Application Infrastructure Services (PaaS)	50.6	33.7	30.3	27.1	22.3	19.9	26.6
Cloud System Infrastructure Services (IaaS)	48.2	45.4	49.0	46.9	38.8	29.4	41.7
Cloud Management and Security Services	36.4	38.8	36.7	28.1	20.0	13.9	27.2
Total	**20.8**	**19.6**	**18.8**	**18.3**	**16.9**	**15.1**	**17.7**

Source: Gartner (August 2012)

Because BPaaS is such a large part of the overall public cloud services market, the growth rate of the cloud services market overall is heavily influenced by growth within BPaaS and, likewise, by cloud advertising. When excluding BPaaS, the growth of the cloud services market is a striking 26.0% CAGR (2011 through 2016).

Public Cloud Services by Segment

When viewed by segment, there are notable differences both in market size and the relative growth rates between cloud services segments:

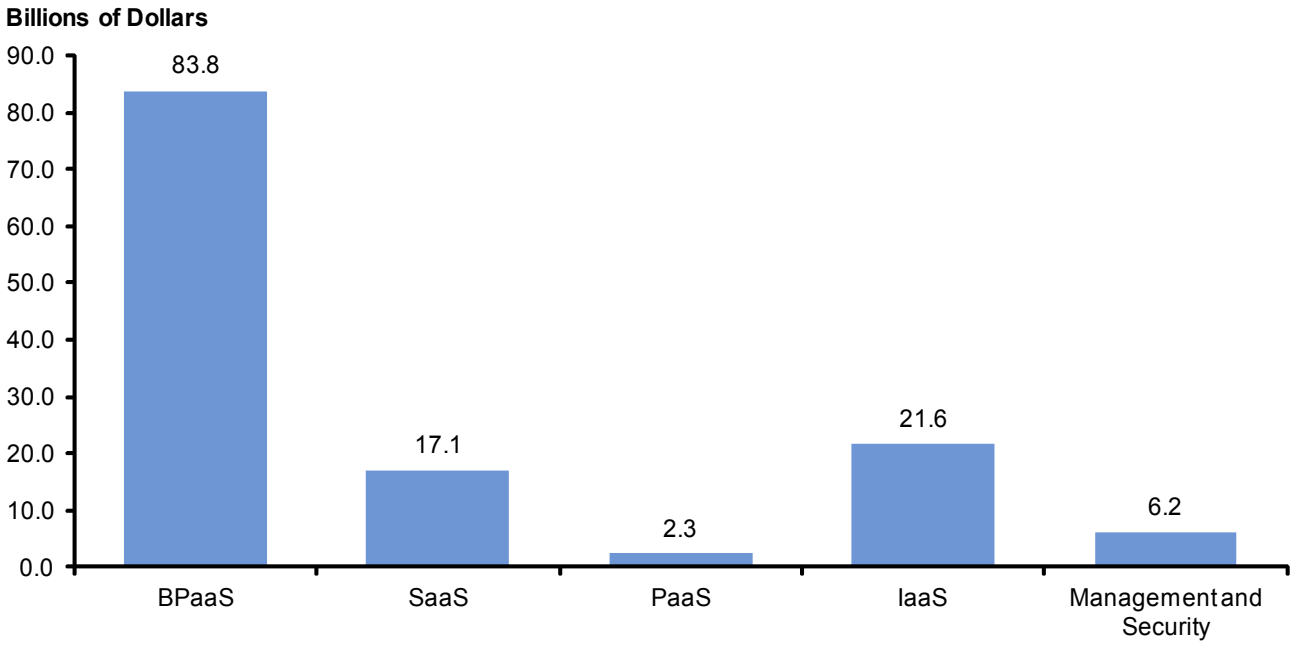
- BPaaS is the largest segment, forecast to grow to $84.2 billion in 2012.
- SaaS is the next largest segment, forecast to grow to $14.4 billion in 2012.
- IaaS is forecast to grow from $4.3 billion in 2011 to $6.2 billion in 2012, reflecting a growth rate of 45.4%.
- Growth in PaaS will be high, although it is a smaller market relative to the other segments; however, PaaS is strategic and considered to be a critical growth driver for other segments, including BPaaS and SaaS. The PaaS segment is forecast to grow to $1.2 billion in 2012.
- Cloud management and security services is a new forecast segment comprising cloud security services, IT operations management (ITOM) and storage management (including backup and recovery services). The cloud management and security services segment is forecast to grow to $3.3 billion in 2012.

Figure 5 outlines the relative absolute growth of each public cloud services segment.

Forecast data highlights the notable growth within the IaaS segment over the forecast period. In 2010, the IaaS market was $2.9 billion. In 2016, the IaaS segment will grow to $24.4 billion, with compounded growth of 41.7%. During the same period, the SaaS market will grow from $9.5 billion in 2010 to $26.6 billion in 2016. This highlights the growing impact of the IaaS market on the overall public cloud services market over the next five years.

Total market size in 2012 is forecast to be $109.3 billion, growing to $206.6 billion in 2016. That amounts to total growth in the public cloud services market of $97.3 billion over the next five years.

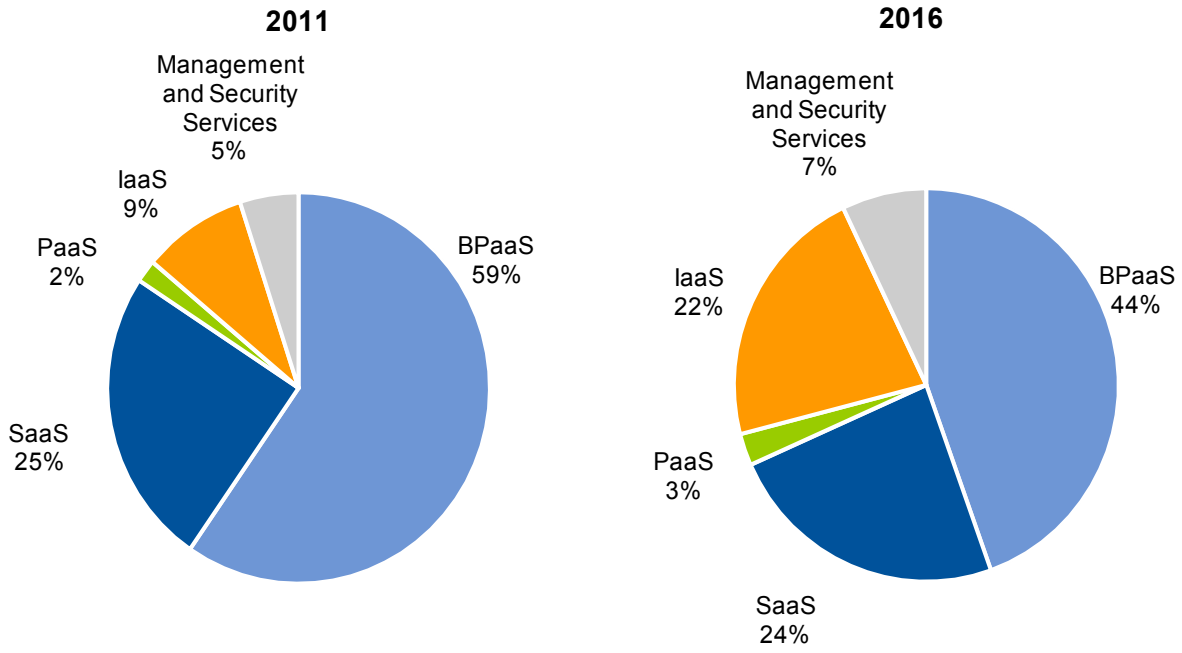
Figure 5. Public Cloud Services Absolute Growth by Segment, 2010-2016



Source: Gartner (August 2012)

The total public cloud services market size in 2011 was $91.4 billion, and it will grow to $206.6 billion in 2016. As the market grows, IaaS will become a larger part of the overall market, while the market share of cloud management and security services will grow as well. Figure 6 shows the relative shifts in the market comparing 2011 with 2016 (excluding cloud advertising).

Figure 6. Relative Share of the Public Cloud Services Market by Segment (Excluding Cloud Advertising), 2011 and 2016

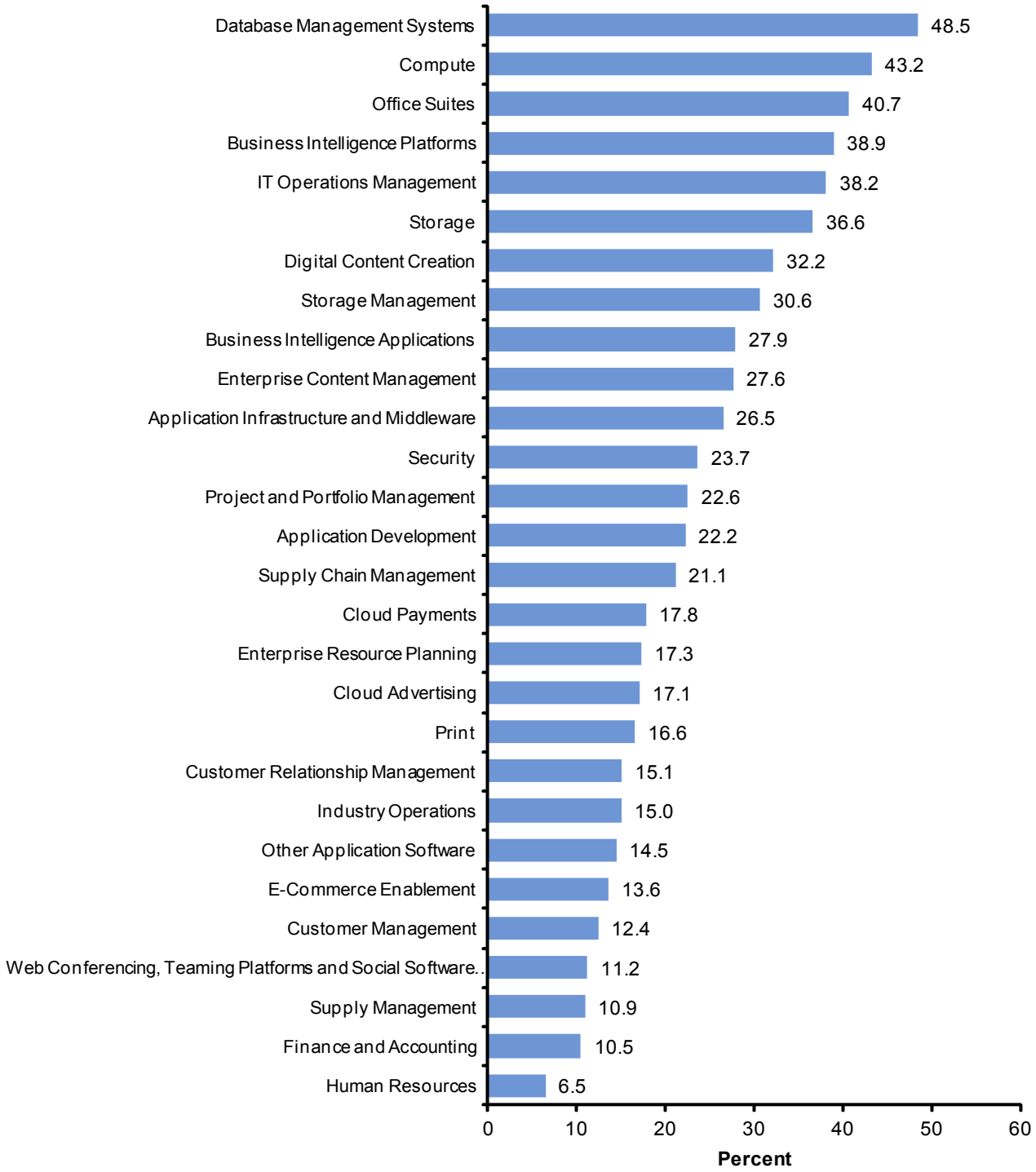


Source: Gartner (August 2012)

There are significant variations in growth rates for each specific subsegment in the cloud forecast. At the high end, database management systems (DBMSs) will see the highest CAGR through 2016 at 48.5%, followed by cloud compute services at 43.2%. The lowest-growth subsegment of the cloud services market will be HR services, in the BPaaS segment, with a CAGR of 6.5%.

When targeting specific markets within the cloud services marketplace, we recommend evaluating both growth rates and potential market size. These will vary by segment, subsegment, region and country. Figure 7 outlines the growth of each cloud services subsegment.

Figure 7. Public Cloud Services Subsegment CAGRs, 2011-2016



Source: Gartner (August 2012)

Public Cloud Services by Region

Table 3 outlines market size and growth rates across regions. Although North America is the largest region and is expected to produce the largest absolute increase in market size, the highest growth rates are expected in Emerging Asia/Pacific (including India and Indonesia), Greater China, Eurasia (including Russia) and Latin America (including Argentina, Mexico and Brazil). It's important to note that, while forecast growth is generally high across all regions, the adoption of cloud services varies significantly across countries. Providers should not assume that a generic strategy applied to specific countries (or regions of the world) will produce the same outcome when applied to other countries — even similar countries.

Western Europe is forecast to grow the slowest during the forecast period, largely due to eurozone economic issues (as outlined earlier). Mature Asia/Pacific growth will also be lower due to ongoing economic challenges in the Japanese market.

Table 3. Public Cloud Services Forecast by Region, 2010-2016 (Billions of Dollars)

	2010	2011	2012	2013	2014	2015	2016	CAGR (%) 2011-2016
Eastern Europe	0.30	0.39	0.47	0.58	0.72	0.89	1.06	22.2
Emerging Asia/Pacific	0.27	0.38	0.50	0.67	0.90	1.16	1.49	31.8
Eurasia	0.43	0.64	0.88	1.13	1.38	1.65	2.04	25.9
Greater China	1.80	3.03	4.11	5.61	7.10	9.16	11.24	30.0
Latin America	2.01	2.35	2.79	3.57	4.71	6.14	7.58	26.4
Mature Asia/Pacific	7.85	8.97	10.35	11.87	14.00	15.77	17.53	14.3
Middle East and North Africa	0.25	0.32	0.37	0.46	0.58	0.71	0.85	21.5
North America	42.18	50.80	62.67	75.79	89.79	105.30	121.87	19.1
Sub-Saharan Africa	0.15	0.19	0.22	0.27	0.32	0.39	0.46	19.6
Western Europe	20.38	24.31	26.98	29.90	34.07	38.34	42.48	11.8
Total	**75.62**	**91.39**	**109.33**	**129.86**	**153.58**	**179.51**	**206.60**	**17.7**

Source: Gartner (August 2012)

North America will account for the greatest percentage of absolute growth in the cloud services market, with 61% of all growth from 2010 through 2016. Western Europe will follow, with 17% of absolute cloud services growth over the same time period. This highlights the dominance of North America and Western Europe in the development, availability and adoption of cloud services.

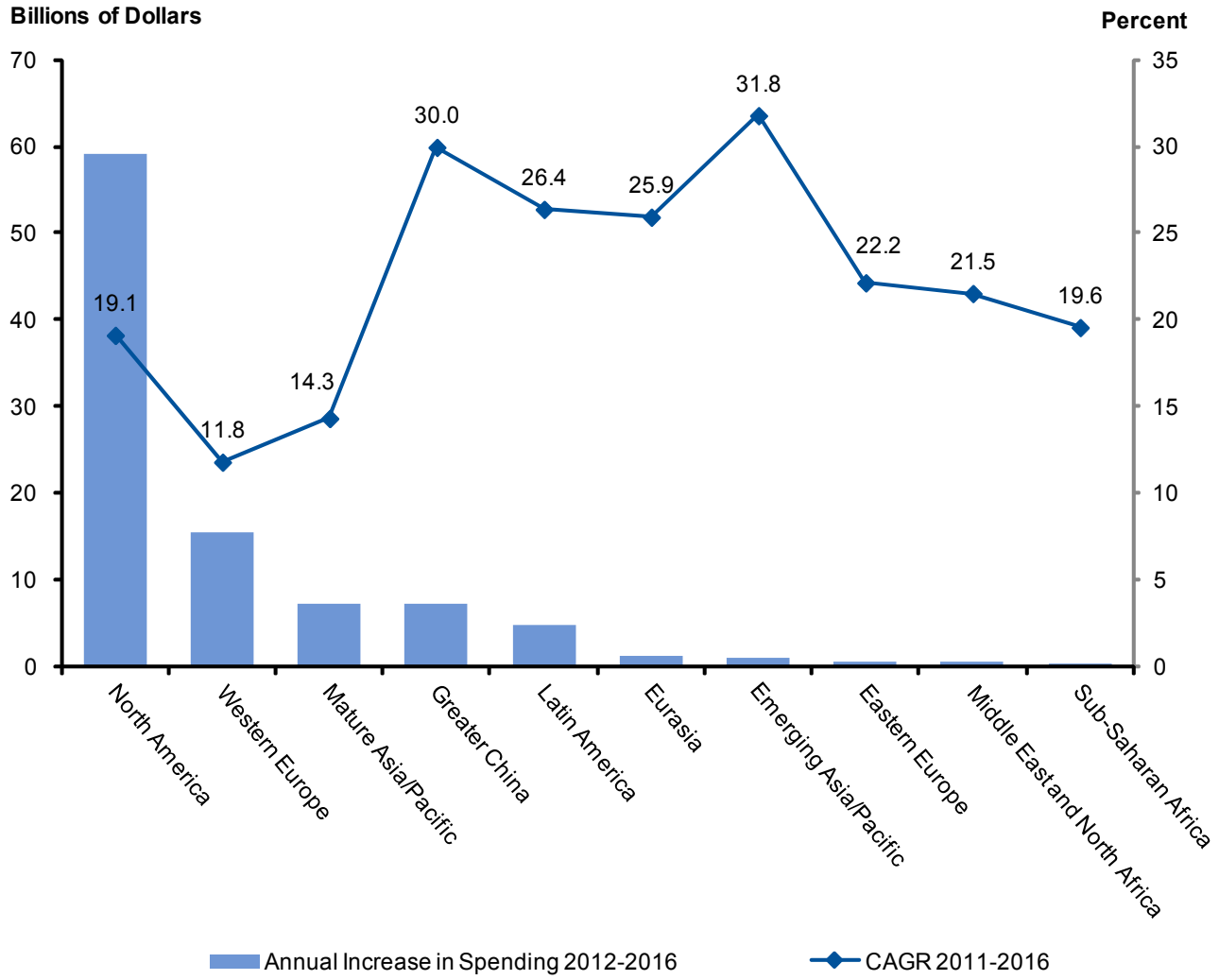
High growth rates will occur in emerging markets, including the top three growth countries of India, Indonesia and China. However, 79% of spending increases will come from North America and Western Europe. For cloud services providers, this will require a strategic approach when considering both high-volume and high-growth markets. Both will be important in the development of sustained, global strategies.

When it comes to cloud services, there is no such thing as a generic, global market. Each region, and each country within each region, has specific characteristics that must be taken into account as strategies are formulated for these markets. China, as always, is an interesting example of the unique attributes of specific markets. China will demonstrate high growth through 2016, with CAGRs of 31.0% through the forecast period. During this time frame, China will also surpass all other countries, except the U.K. and the U.S., in total market size. This makes China a compelling market both in terms of total market opportunity as well as expected growth. However, China has its own unique requirements due to its unique regulatory requirements, as well as concerns about privacy, security and accessibility.

As cloud services providers develop plans for each region and country, they must be prepared for the specific challenges of operating in each area, taking into account the unique requirements of the country, as well as cultural factors that will be key factors in the growth of the markets and the adoption of specific cloud services offerings.

Figure 8 highlights the relative size in terms of expected spending over the forecast period and the associated growth rate of each region. As already noted, it will be important to balance both factors when formulating plans and strategies related to specific markets.

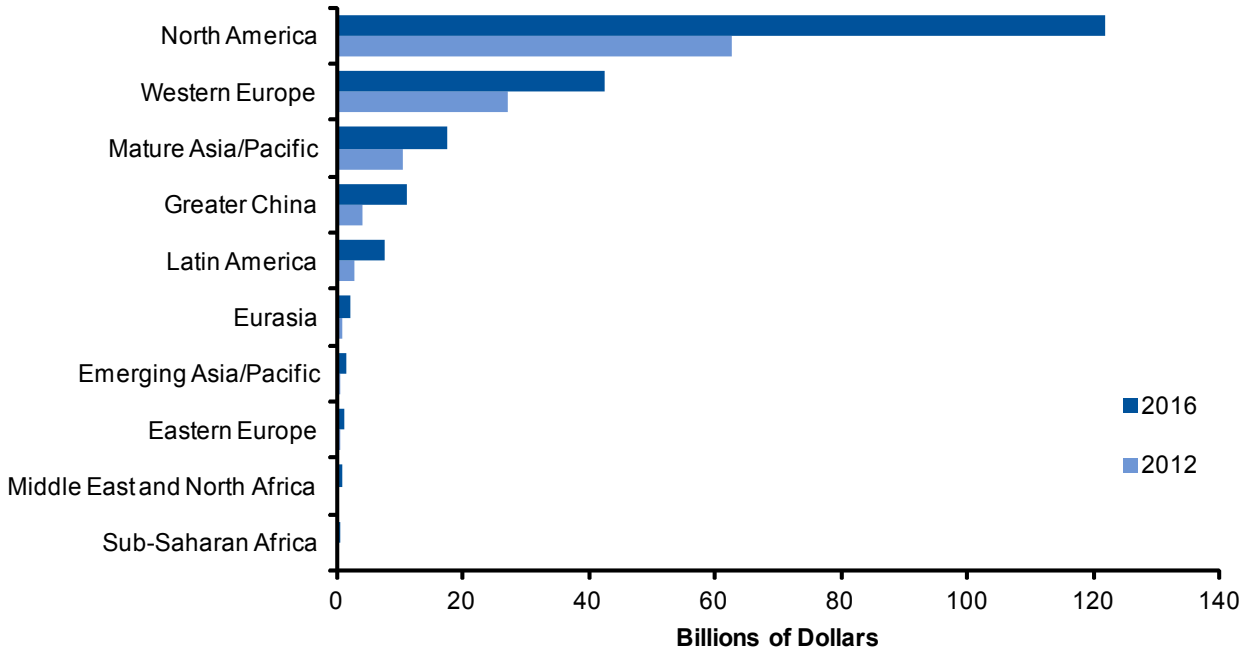
Figure 8. Increase in Spending on Public Cloud Services Between 2012 and 2016 by Region and Regional CAGRs



Source: Gartner (August 2012)

From 2012 through 2016, there will be $779 billion in total spending on public cloud services. Spending in North America will comprise 58% of all public cloud services spending from 2012 through 2016, while Western Europe will account for 22%. Figure 9 outlines the relative absolute growth between regions from 2012 through 2016.

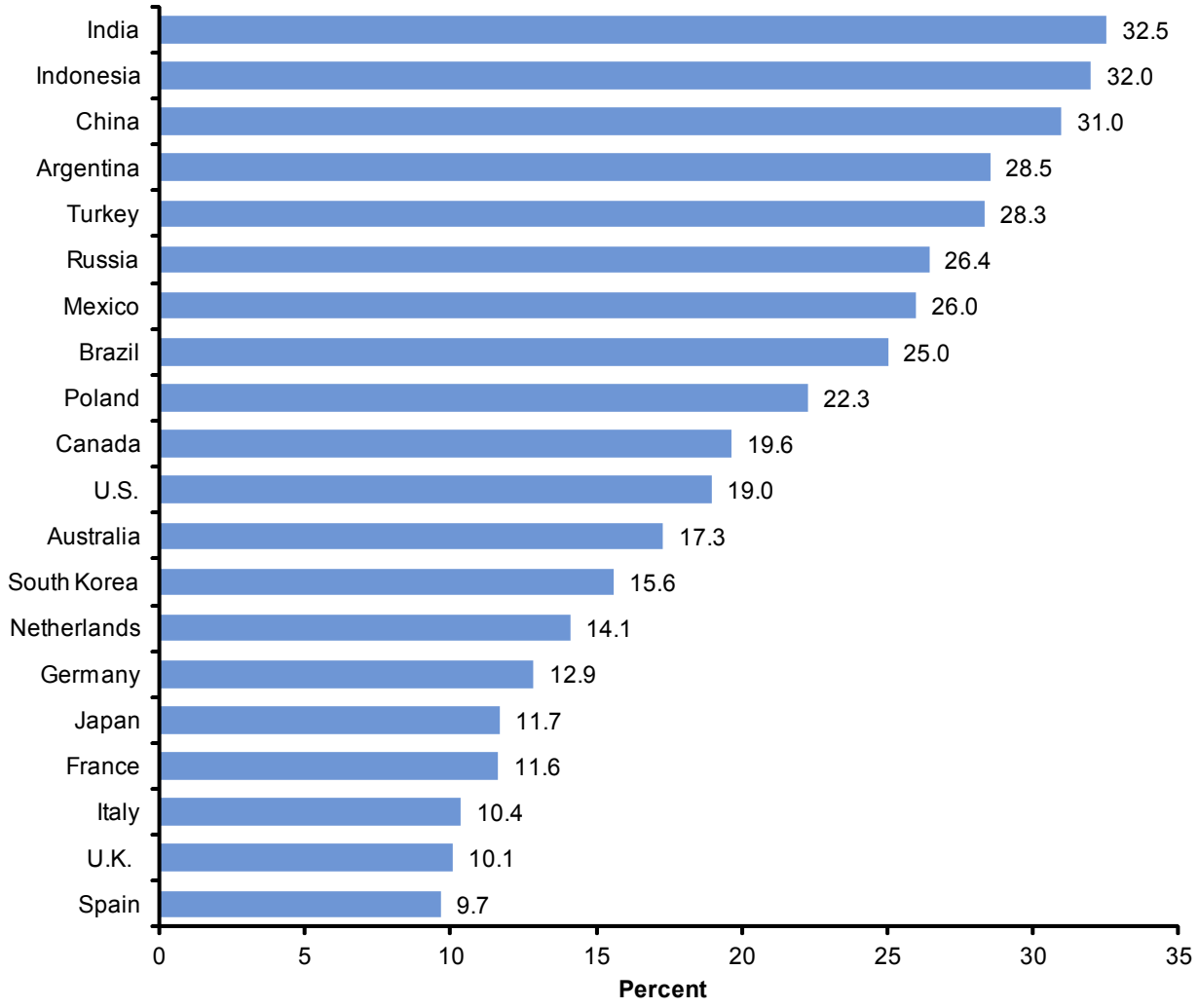
Figure 9. Public Cloud Services Absolute Market Size by Region, 2012 and 2016



Source: Gartner (August 2012)

In the public cloud services forecast, we track the overall market size and growth rates for 20 countries. Figure 10 outlines the CAGR for these countries for the forecast period 2011 through 2016. Note the high growth in countries within Emerging Asia/Pacific and the slower-growth countries within Western Europe. High growth is also expected from Latin America generally, and Argentina specifically.

Figure 10. Public Cloud Services CAGRs by Country, 2011-2016



Source: Gartner (August 2012)

Forecasts for each country are established using local currencies. Although forecast statistics are presented here in U.S. dollars, each forecast can also be viewed in other currencies, including the native currencies used in the forecast process. These views are available in the associated public cloud services forecast spreadsheet. All values shown here have been converted to U.S. dollars for the purposes of comparison across countries. Table 4 outlines the public cloud services forecast for each of the target 20 countries.

Table 4. Public Cloud Services Forecast by Country, 2010-2016 (Billions of Dollars)

	2010	2011	2012	2013	2014	2015	2016	CAGR (%) 2011-2016
Argentina	0.13	0.16	0.21	0.27	0.36	0.47	0.57	28.5
Australia	1.59	2.09	2.53	3.09	3.66	4.17	4.63	17.3
Brazil	1.20	1.43	1.64	2.08	2.71	3.53	4.36	25.0
Canada	2.63	3.41	4.17	5.17	6.14	7.26	8.37	19.6
China	1.56	2.71	3.70	5.12	6.52	8.49	10.46	31.0
France	2.47	3.02	3.29	3.63	4.23	4.75	5.24	11.6
Germany	3.50	4.28	4.83	5.40	6.22	7.08	7.83	12.9
India	0.17	0.24	0.31	0.42	0.57	0.74	0.96	32.5
Indonesia	0.01	0.02	0.02	0.03	0.04	0.06	0.07	32.0
Italy	1.09	1.33	1.42	1.56	1.75	1.96	2.17	10.4
Japan	4.74	4.98	5.58	6.19	7.09	7.83	8.65	11.7
Mexico	0.48	0.55	0.67	0.85	1.12	1.44	1.75	26.0
Netherlands	0.97	1.17	1.30	1.46	1.71	1.99	2.27	14.1
Poland	0.13	0.16	0.19	0.23	0.29	0.36	0.45	22.3
Russia	0.40	0.61	0.84	1.09	1.34	1.60	1.98	26.4
South Korea	1.29	1.59	1.82	2.03	2.55	2.93	3.27	15.6
Spain	1.22	1.31	1.35	1.48	1.71	1.91	2.08	9.7
Turkey	0.06	0.08	0.10	0.13	0.18	0.23	0.28	28.3
U.K.	9.62	11.05	12.24	13.39	14.75	16.27	17.86	10.1
U.S.	42.31	50.50	62.30	75.32	89.03	104.17	120.32	19.0
Total	**75.62**	**91.39**	**109.33**	**129.86**	**153.58**	**179.51**	**206.60**	**17.7**

Source: Gartner (August 2012)

Cloud Business Process Services (BPaaS)

Analysis by Morgan Yeates

Many large and small vendors are piloting BPaaS offerings with early-adopter clients. Use cases show that adoption of BPaaS is coming from targeted implementations unique to specific industries. This will result in steady, relatively small but consistent long-term growth of the sourcing portfolio.

Historically, the large, extensive and complex business process outsourcing (BPO) deals have not utilized BPaaS offerings as elements of their solutions. However, going forward, smaller, modular components of complex BPO solutions will likely be replaced by cloud-enabled elements. Focused and targeted business process services, especially within microvertical industries, will be the biggest areas of projected growth. Traditional BPO offerings, combined with selective, highly verticalized BPaaS offerings, will represent the greatest element driving growth in the BPaaS market.

Business process workflows delivered through BPaaS solutions will require higher visibility and much-tighter integration as the extent of the decoupling of business process components increases. Organizations will need to have a much-higher level of transparency with all their constituencies (employees, customers, suppliers); further, buyer trends indicate that customers will want to affect how business process services are delivered. Meeting these customer needs to generate customer-facing value will drive increased interest in BPaaS.

Cloud Advertising

Analysis by Venecia Liu

Cloud advertising data includes the advertising portion of revenue from fees charged through real-time exchange platforms and demand-side platforms. The calculation for display advertising is based on advertising inventory sold through real-time exchange platforms rather than inventory sold directly by publishers. For example, popular social networking sites, such as Facebook and Twitter, are considered mostly inventory sold directly and thus would not be attributed as cloud-based ad services.

The U.S. remains the dominant market for cloud-based advertising services, given the pervasiveness of Google's ad exchange platform, coupled with dominant search vendors Google and Bing. Other locally based search engines, such as Yandex in Russia, Baidu in China and Naver in South Korea, add to the base and growth for those respective countries. Paid search and display advertising in emerging economies will continue to grow with the increase in Internet usage and access.

Gartner predicts the financial constraints of Western European countries will decrease cloud advertising growth relative to other regions. Likewise, the various natural disasters in Japan negatively impacted ad spend in 2011 and thus the amount of cloud-based advertising spending.

Cloud-based advertising platforms have gained traction on the mobile channel, with Apple and Google as dominant providers.

Company financials and vendor revenue have been examined to assess the impact of cloud-based ad services, including financial statements and estimates of leading search companies, advertising networks, advertising exchanges, and websites where display advertisement is generated. Secondary sources — such as comScore for advertising-network-related metrics, the IAB for data on display advertising, and PwC's "Global Entertainment and Media Outlook: 2012-2016" report were examined as additional inputs to the forecasting process.

Cloud Payments

Analysis by Susan Cournoyer

Cloud payments build on the accelerated shift from paper to electronic currency in industrialized markets; the cloud payment market also captures momentum from the intensive global growth in e-commerce happening in emerging economies worldwide. This market taps into an annuity revenue stream that has now attracted disruptive players to the formerly banking-centric payment process.

Some of the strongest growth for cloud payments has emerged in the U.S. market, long a stronghold of paper currency compared with other industrialized countries. The emergence of a scalable, online payment option has attracted not only large merchants seeking every means to attract online customers, but also large numbers of small to midsize merchants that formerly avoided electronic payments due to the prohibitive cost to acquire access to credit payment systems.

The emergence of large e-commerce markets in emerging economies such as China, Argentina and Brazil provides another strong contribution to the growth of cloud payments. Cloud payments provide the necessary merchant payment processing function to facilitate large online markets for both B2B and B2C commerce.

Payment entrepreneurship marks the breakthrough strategies in these markets, harking back to a similar pattern when Visa and MasterCard broke the global stalemate on credit card expansion through pragmatic payment innovation. While banks continue to play a role in cloud payments as merchant acquirers, the real market leadership goes to PayPal and Alipay, which have developed breakout strategies in the U.S. and China, respectively. While both these players are subsidiaries of larger e-commerce companies, both demonstrate broad brand awareness in their own right in their geographic spheres of influence.

The market growth of both cloud payment leaders demonstrates double-digit growth trajectories not only in domestic markets, but also in international markets. And while these international markets have represented the minority of the leaders' revenue, PayPal's international revenue has just surpassed its domestic revenue. Using the anticipated 20%-plus growth rate of micro, small and midsize business lending as a proxy,[3] cloud payments are similarly forecast to demonstrate highly robust growth worldwide over the forecast period.

Customer Management

Analysis by TJ Singh

Because customer management BPaaS services are cloud-sourced, adoption of customer management BPaaS solutions is not confined to mature or developed markets: Adoption is also growing in emerging markets, such as India, China and Brazil.

Providers of customer management BPO and marketing services will increase the level of adoption among buyers as they enhance their BPaaS offerings and supporting technologies and expand their BPaaS capabilities — especially those that deliver highly personalized and consistent sales, marketing and customer care services with a high degree of automation, such as self-service (including mobile apps) and social CRM.

Customer management BPaaS buyers are more aware of their present and future needs — those based on cloud-delivered business process services — and they recognize the value of avoiding traditional customer management business process interactions and instead combine adjacent processes in ways that offer cost and productivity efficiencies and, more importantly, improve the customer experience.

Currently, most customer management services available on BPaaS platforms are focused on Web chats, self-service, and social CRM monitoring and management. There will be higher levels of adoption of customer management BPaaS over the next three years as buyers look to address changing customer needs around sales, marketing and customer care, all of which are evolving in tandem with technology evolution and shifts in customer demographics and behavior.

As the global economic environment improves, the level of Internet adoption is expected to increase dramatically, especially through Web-based mobile services (such as the iPhone and similar devices). Additionally, the growing "digital native" community across the world will drive a significant number of buyers to start looking to develop and deploy customer management services based on BPaaS platforms.

E-Commerce Enablement

Analysis by Jeff Roster

North America is the most mature market for e-commerce cloud enablement services. Over the forecast period, growth is expected to moderate as Tier 1 and Tier 2 retailers look to actively bring e-commerce operations back in-house. This behavior is being driven by the highly strategic aspect of e-commerce, which has become critical to virtually every retailer. The best example of this is Target ($69.8 billion), which had a longstanding deal with Amazon to be Target's e-commerce platform. But as Amazon grew in capacity and reach, it became clear that Target and Amazon directly competed in almost every category found in a Target store. In 2011, Target brought its e-commerce operations back in-house. It is reasonable to expect most Tier 1 retailers will follow a similar path and move their operations back in-house or to service providers that don't have a competitive position. Tiers 3 to 5 retailers will continue to use these platforms as they lack the resources to develop these capabilities.

Advanced retailers in Europe view e-commerce as so strategic to their operations that they believe they need to have direct control over all aspects of their e-commerce operations. E-commerce cloud services will become less attractive over the forecast period for these large retailers. Rates of growth are expected to moderate over the later years in the forecast but remain above the growth rates in North America.

Latin American retailers are much less mature in their approach to e-commerce. Cloud services still make sense for even the largest retailer over the forecast period as these retailers are first concentrating on developing and modernizing the core retail services of merchandising and supply chain. Higher growth rates are expected through the forecast period.

Retailers in Asia/Pacific regions will approach e-commerce cloud services more aggressively than retailers in other regions. Retail is far less developed in China and India as is cloud e-commerce enablement since retailers' top priority tasks there are to develop updated merchandising and supply chain systems. E-commerce, as important as it is, takes a back seat to these efforts. Alibaba is an e-commerce cloud platform that continues to experience significant growth in India. For this key reason, we expect Asia/Pacific countries to enjoy significant growth rates over the forecast period. India and China will have the highest growth rates as part of the Emerging Asia/Pacific region, while Australia will have lower growth rates, similar to other developed economies.

Finance and Accounting

Analysis by Cathy Tornbohm and Morgan Yeates

Finance and accounting (F&A) BPaaS services are emerging. One of the earliest yet major examples of this service is in the U.K., where a joint venture between the Department of Health and Steria delivers an F&A BPaaS service to more than 100 healthcare establishments, from hospitals to individual primary healthcare trusts. Other examples include the F&A service embedded in Corefino's U.S. midmarket-company finance solution, which is based on several ERP tools.

Gartner increasingly sees offerings for specific F&A processes adopting this model, such as for expense management from players like Expensify. Gartner expects these point solutions to be adopted faster than the industry-specific solutions, which may slow adoption due to concern about underdepreciated ERP investments.

Human Resources

Analysis by Morgan Yeates

Analysis of revenue from leading HR outsourcing providers suggests that more than 30% of the HR outsourcing market is already delivered via a BPaaS model. The penetration may be even higher among mature HR BPO subprocesses, such as payroll. This ratio — which will see BPaaS represent 42% of the overall HR BPO market by 2015 — is applied to Gartner's existing HR BPO forecast to produce the size and forecast for this report.

The HR domain is arguably the most-mature area among all BPO markets. Outsourcing services for payroll and benefits administration have existed in one form of BPO or another for decades; so in

some respects, what is old is now new again. As these offerings have matured and become commoditized, they have re-emerged as cloud-sourced service offerings, versus their previous incarnation as customized, labor-based outsourcing engagements. The HR BPO sector has witnessed the fastest adoption of BPaaS services, when compared with the broader BPO market. Adoption has primarily been in high-transaction functions, such as payroll, benefits administration and recruitment.

The HR service market represents a part of the BPaaS market that is well on its way to mainstream adoption and maturity. From a market development perspective, we expect to see a significant acceleration of growth in the HR BPaaS market through 2016 due to a combination of improvements in macroeconomic market conditions, the increased maturity of BPaaS model solutions, and the ubiquity of outsourcing as a service delivery model in the HR service market.

At present, HR BPaaS is least applicable to large global buyers — the type of buyers whose global workforce or complicated HR programs typically attracted them to traditional HR BPO services, and which had a significant provider labor component and less automation. But at a certain size threshold, the capabilities of an HR BPaaS alternative to accommodate, for example, a 1,000-employee business (which many HR BPaaS offerings can accommodate today) will inexorably evolve into capabilities for a 25,000-employee business, and larger.

Industry Operations

Analysis by Robert H. Brown

Buyers looking for industry-specific offerings are coming to grips with their business process sourcing options. BPaaS will likely see more vertically oriented growth, where both traditional BPO offerings and selective highly verticalized BPaaS offerings will be the norm. Buyers and providers will need to carve out those business process elements (subprocesses, activities or tasks) specific to vertical industries as the basis for these new cloud services offerings. Additionally, we anticipate the consumerization of IT will drive a proliferation of BPaaS offerings that are small and narrowly targeted but will yield significant uptake and scale.

Healthcare reform and the demand for a significant reduction in administrative expenses on the payer side, as well as for low-cost benefit options with which to compete in the health benefit exchanges, may push healthcare payers to identify functions that "must be done" but offer no unique value proposition. They may look to move to the outsourcing hierarchy — that is, from IT outsourcing to BPO to BPaaS — and seek out vendors supplying services that not only offer deeper cost savings for commoditized services, such as provider credentialing and standard reporting, but are also extended to end-to-end core processing.

Road tolling/charging services from the likes of Xerox (E-ZPass, FasTrak and so forth) showcase the maturity of many first-generation industry-specific BPaaS services. We expect more utilization of technologies such as mobility services and quick response codes to drive adoption beyond those services presently using RFID tags in sectors such as transportation, retail, communications, and travel and leisure.

In the legal sector, we see offerings such as L@W Transfers, a BPaaS service that guides attorneys, bank personnel and homeowners through the property transfer process. Other providers in this space include e-discovery providers such as kCura and Clearwell Systems, as well as legal process outsourcing providers, such as UnitedLex and Mindcrest.

In the energy and utilities sector, players such as PowerAdvocate provide consumption information across multiple channels (oil and gas, electric, and so forth).

Similar but smaller players are driving consumerized BPaaS offerings, such as Gradatim in the microfinance, microinsurance and legal industries, and Vertafore in the license renewal process for education, insurance and securities.

Supply Management

Analysis by Cathy Tornbohm and Morgan Yeates

Supply chain management (SCM) BPaaS has been widely adopted in the market for certain functions within the broader definition of SCM. Specifically, SCM BPaaS is pervasive in the logistics process, less so in sourcing and procurement. Examples of SCM BPaaS in use today include shipment tracking and tracing. Although the tracking service is not charged for separately in many instances, there is a charge for more-advanced tracking and tracing, such as proof of delivery.

Another example is global trade management. When an individual or company ships goods internationally, customs documents must be processed to enable the goods to enter the country to which they are being shipped. Many logistics service providers deliver customs clearance and processing services as a BPaaS. Ancillary analytic services for point-of-sale scan data and other sources of demand data are delivered via a BPaaS model.

Cloud Application Services (SaaS)

Analysis by Chad Eschinger

Adoption of the on-demand deployment model has grown for more than a decade, but its popularity has increased significantly within the past five years. Initial concerns about security, response time and service availability have diminished for many organizations as SaaS business and computing models have matured and adoption has become more widespread. Usage and vendors' on-demand ecosystems continue to evolve to provide additional business and technology services, more-vertical-specific functionality, and stronger communities of partners and buyers. Although some attrition occurred during 2009 due to business workforce reduction, nearly all SaaS vendors grew revenue during the economic downturn as buyers continued to confirm their acceptance of on-demand solutions. Moving forward, the same resilience pattern is expected with the new economic uncertainties in 2012. Expect adoption of SaaS to far outpace market growth through 2016.

The composition of the worldwide SaaS landscape is evolving as vendors continue to extend regionally, increase penetration within existing accounts and "greenfield" opportunities, and expand their solution offerings, either organically or through acquisition. During the past 12 to 18 months,

Gartner has observed the following shifts in how SaaS is sold, consumed and perceived by vendors and buyers:

- The competitive environment is intensifying, creating downward price pressure and more aggressive vendor marketing initiatives. More merger and acquisition activities are observed, with vendors enriching their cloud offerings, targeting new market segments and expanding geographically. More partnerships (such as partnering with telecommunications companies) are being observed as vendors penetrate new markets or new geographies.
- There is increasing involvement from executives in purchasing decisions, as well as greater participation from IT in the purchase process due to larger deals, the expanding footprint of SaaS in the enterprise, and a higher requirement for downstream integration as SaaS becomes incorporated in the enterprise business process.
- Growing communities of professional services providers are emerging for SaaS, not only to fulfill technical integration and deployment requirements, but also to assist buyers with process re-engineering and change management initiatives. Firms of all sizes are growing practices focused on SaaS, ranging from small-to-midsize deployments to large implementation efforts in the complex deals.
- SaaS deployments are becoming larger, with deals more frequently appearing in the range of thousands to tens of thousands of users within large enterprises.
- Social media and social software are becoming increasingly integrated with SaaS solutions, as social platforms such as Facebook and Twitter are leveraging customer service, sales and marketing initiatives. In contrast, recent research indicates that social software has the lowest adoption rate by buyers of SaaS solutions.
- Deal structures are slowly changing to accommodate an actual pay-for-use model, rather than a pay-upfront subscription model, especially in emerging markets, to reach a wider audience and respond to customer demand.
- Many buyers are facing application migrations to service-oriented architectures as vendors rearchitect their solutions, and they are entertaining SaaS alternatives for specific functionality, particularly when the solution is not available from the incumbent vendor.
- Immediate financial advantages may be outweighed by downstream costs as users demand richer functionality and as customization or integration requirements with on-premises applications increase.

Business Intelligence Applications

Analysis by Dan Sommer

Business intelligence (BI) overall has been one of the more conservative areas for cloud-enablement since business information is often regarded as the most sensitive and critical information an organization can have. The key barometer for adoption is where the data resides. Hence, solution areas that analyze data that already reside in the cloud, such as Web analytics and sentiment

analysis, already have broad acceptance. The next level of adoption is non-mission-critical data that exists within business units, for personal or small workgroup use, or areas connected to analyzing business applications in the cloud, such as salesforce.com.

We see increasing adoption in the area of domain-specific analytic applications that deal with analysis for a specific use-case, such as price optimization, workforce, procurement and financial planning.

The merging of analytics with industry data, as well as industry data providers delivering BI via a SaaS model, has been one of the more widely adopted use cases for BI delivered as a service and is another key growth driver. Early adopters have been in the midmarket and at the departmental level of large enterprises; however, the size and sophistication of implementations have started to expand to become more enterprisewide. Even so, they have yet to reach the scale of other on-premises alternatives. Hence, larger end-to-end BI applications driven by business units and/or IT are further down the adoption chain. Apart from the reason that this would draw from data within the firewall, the significant success of on-premises data discovery tools, which are seen as flexible enough and able to fulfill many needs, plus the significant investment that has already been made in legacy BI systems, also play a part in the slowing of adoption. BI applications delivered as SaaS are expected to become what can be seen as mainstream as we approach 2020.

Customer Relationship Management

Analysis by Joanne Correia and Yanna Dharmasthira

For the past seven years, SaaS has continued to represent a key driver of growth in the CRM market. SaaS revenue grew 23% within the CRM market during 2011 — almost two times the growth of total software revenue (13.5%).[4]

Growth was driven by strong performance from SaaS providers overall, including pure-play providers and vendors offering Web analytics and mobile solutions. SaaS in 2011 represented nearly 33% of total CRM software market revenue, or about $3.9 billion. Gartner expects growth to continue, with SaaS representing nearly 38% of the CRM market's total software revenue in 2012. The forecast for CRM SaaS for the forecast period 2011 through 2016 is expected to reach a 15.1% CAGR, or nearly $8 billion.

During 2011, salesforce.com, which represents 51% of CRM SaaS revenue, exhibited yet another strong growth trajectory, with nearly 36% growth for total software revenue, and it expects to approach $3 billion in total company revenue during the next fiscal year.

Vendor acquisitions and partnerships are expected to continue, as vendors continue to enrich their portfolio and expand their market reach. Examples include Oracle's acquisition of RightNow Technologies, as well as salesforce.com's continuous acquisition activity to build its communications and collaboration technologies, enrich its solution portfolio, and grow the breadth of development capabilities on the platform.

Digital Content Creation

Analysis by Hai Hong Swinehart

We expect SaaS to represent 17% of total digital content creation (DCC) software revenue and reach total revenue of $871.5 million by 2016. The projected CAGR (2011 through 2016) for revenue attributed to SaaS in this market is 32.2% versus an estimated 7.3% CAGR for total software revenue in the overall DCC market.[4]

Interest in cloud-based subscriptions continues to grow and evolve within the enterprise application markets. This is because cloud-based subscriptions lower the cost of entry, particularly for the part-time creative individuals in enterprises today who cannot justify the investment required for DCC suites.

Interest in providing cloud-based and subscription-based DCC offerings from vendors is also high. Adobe, the world's largest software DCC vendor, officially offers a line of creative, business, Web and mobile software and services used by creative professionals, knowledge workers, developers, marketers, enterprises and consumers for creating, managing, delivering, optimizing and engaging with compelling content and experiences across multiple operating systems, devices and media.

In addition, the cloud services model provides a means for vendors to incrementally and continuously evolve their offerings, meaning it is less constrained by "box software" release schedules.

Although interest in cloud-based subscriptions continues to grow and evolve within the enterprise application markets, there will not be a big wave of full-feature DCC products using the SaaS model through 2016. This is mainly because of the current limitation of broadband, which makes it difficult to transfer rich digital content.

Enterprise Content Management

Analysis by Tom Eid

Cloud-based and SaaS implementations are creating new opportunities as more organizations seek new methods of deploying enterprise content management (ECM) technologies. These new methods will grow in comparison with on-premises delivery but will not eclipse it. Gartner estimates that, in 2011, cloud-based and SaaS content management revenue was approximately 6% of the $4.3 billion worldwide ECM software market.[4] Improvements in user access and network performance, coupled with benefits in cost savings, could grow this percentage to approximately 11% by 2015.

Today, most cloud-based ECM implementations focus on simple yet established use cases, such as archiving, document management, imaging processing and video sharing. Composite content applications, such as loan origination, insurance claims management and case management, while growing in demand for on-premises ECM implementations, often require customization and integration with line-of-business applications and are moving more slowly to cloud-based implementations.

In the mature markets of Canada, Germany, Japan, the U.S. and Western Europe, SaaS options are less attractive to the high end of the market, which already has wide adoption and usage of ECM technology, higher levels of customization, stringent compliance requirements, and an established sourcing and procurement strategy. The opportunity, therefore, in 2012 within these markets for SaaS-based ECM is generated by the need to access this technology by midsize and small-office markets, as well as departmental deployments looking for process and vertical solution specialization.

In emerging regions, particularly Asia/Pacific and Latin America, SaaS actually represents a faster and more convenient way to access ECM technologies, even at the high end of the market. The cloud model allows immediate entry into these emerging markets for international vendors, thus adding to the local competitive landscape, which is usually dominated by a few large local providers.

Enterprise Resource Planning

Analysis by Chris Pang

SaaS as a percentage of the overall ERP market is still small, with approximately 10% of the market attributable to SaaS by the end of 2012. But it's an area that is on the rise, as evidenced by the double-digit growth posted by many SaaS providers and the investment that many traditionally on-premises providers are making to add SaaS-based solutions to their portfolio.

Most successful SaaS providers have aligned themselves to administrative ERP, most notably human capital management, although financial management is also seeing an influx of new offerings and greater customer adoption. SaaS, however, remains embryonic in the operational ERP domain, which includes manufacturing and operations software and enterprise asset management software. Importantly, very few vendors have made the bridge to create and successfully sell end-to-end ERP suite solutions. Thus, for the near future, SaaS within ERP will be mainly deployed to augment existing on-premises systems rather than replace them entirely.

Through the forecast period, we expect SaaS to continue gaining momentum and grow to $4.4 billion in total software revenue in 2016, up from an expected $2.4 billion in 2012. Most SaaS deployments and offerings will remain North America- and Western Europe-centric, but interest, growth and uptake in other geographies will also grow. However, to truly penetrate and gain market share, providers will need to make significant investments in product localization and local go-to-market strategies.

Office Suites

Analysis by Hai Hong Swinehart

In the best-case forecast scenario, by 2016, office suites from Google and Microsoft and similar SaaS-based offerings are anticipated to have combined revenue of $1.3 billion, representing a 6% share of the office suites market based on total software revenue of $21.6 billion.[4]

SaaS-based office suites are not a replacement for standard office suites and should be viewed differently. However, even with the limitations in today's SaaS office suite offerings, some business users will still find them appropriate for real-time collaboration or as secondary online tools for editing documents or taking notes. In most cases, business users are looking at Google Docs, Zoho, Adobe Buzzworld and ThinkFree Office because they have proved to be the most viable from a usage point of view.

Consumers and small businesses will continue be the major growth forces in Web-based office suites through 2012. Most small businesses are expected to behave similarly to consumers in SaaS adoption because they are unlikely to have restrictions on adopting SaaS-based office suites. Also, businesses worry less about the homogeneity of office suites within their organizations, and they tend to have multiple products in use.

Microsoft's Office 365 will continue to push SaaS-based office suite adoption to a higher level. However, because there is a significant functionality and performance gaps between full-function, fat-client suites and Web-based versions, no major cannibalization of office productivity markets by SaaS-based office suites will occur through 2015. Still, SaaS-based office suites could significantly boost business revenue if their performance increases substantially and they prove attractive to general business users.

Project and Portfolio Management

Analysis by Laurie Wurster

The project and portfolio management (PPM) SaaS (or on-demand) market is steadily growing in percentage of sales and is projected to do so at a significant pace of about 22.6% during the forecast period. SaaS alternatives may help grow the overall PPM market (which saw 13.7% growth in total software revenue in 2011[4]) rather than cannibalizing on-premises sales; however, some SaaS revenue growth will be at the expense of on-premises licenses because newer entrants to the market (with cloud-only options) are able to provide solutions at less than the cost of software maintenance on non-cloud-based solutions.

Cost constraints, potential for rapid deployment (usually within two weeks but less than 30 days), and functionality (existing and new) that meets immediate business needs (without requiring extensive process and behavioral changes) continue to drive interest and adoption of cloud-based PPM systems. In addition to smaller IT departments (with fewer than 100 employees) requiring PPM systems, larger enterprise IT departments are also considering the SaaS option.

Cloud-based solutions allow prospects to minimize the risk of a PPM implementation with a predictable 12-month financial commitment for SaaS-based offerings, as opposed to the exponentially higher costs driven by licensing fees, consulting services and three-year maintenance contracts usually associated with an on-premises solution. In addition, potential customers new to PPM disciplines or low in PPM maturity can use SaaS as a way to "test" organizational commitment, assess the potential impact of adopting PPM en masse, and evaluate the organization's adaptability to PPM in terms of people, process and technology.

As demand increases, the PPM cloud model continues to mature. Through agile development methods and transparent seasonal feature releases, SaaS PPM vendors are quickly advancing solution capabilities and delivering improvements to their customers faster than their on-premises counterparts. In response to the emergence of SaaS PPM as a competitive threat, several vendors offering on-premises and hosted deployment options are now transforming their businesses to be "deployment agnostic" or "SaaS first."

Supply Chain Management

Analysis by Chad Eschinger

Estimated revenue growth for SaaS within SCM markets remains resilient through 2016. In a recent end-user survey,[5] supply chain practitioners indicated that twice as many supply chain solutions would be sourced through a SaaS model than had been the sentiment in the three years prior. This finding, coupled with the performance of many specialized vendors offering their solutions via SaaS, provides confidence in a 21.1% five-year CAGR for growth, from 2011 revenue estimates of $1.3 billion to $3.4 billion by 2016. Growth takes into account businesses postponing enterprisewide upgrades of core applications while continuing to seek more-rapid results from application purchases that are often deployed around an enterprise application core. Greater traction from existing vendors, more new vendors incorporating SaaS, and growing competition increase the opportunity for supply chain solutions and are positive influences on the SaaS forecast.

Higher-growth markets include organizations with less than $2.5 billion in annual revenue and within e-sourcing (strategic sourcing), transportation management and global trade management.

More-complex and more-customized applications within planning, or the deep execution within the "four walls" of a warehouse management system, are unlikely to migrate wholly toward a SaaS delivery model within the next five years.

Expect demand for SaaS solutions offered by other traditional suite vendors to increase significantly through the forecast period in an effort to capture lost opportunities.

Web Conferencing, Teaming Platforms and Social Software Suites

Analysis by Tom Eid

Enterprises are evolving their collaboration and social software environments at different rates, with demand arising from a wide range of user needs. Many organizations have shifted from a "Generation 1" level of collaboration that focuses on communication to more-sophisticated collaboration structures that emphasize sharing and networking.

For Web conferencing, teaming platforms and social software, the majority of vendors' revenue is through cloud-based and SaaS offerings.

SaaS-based Web conferencing revenue accounted for approximately 82% of total market revenue in 2011 and is more focused on webinars and support of less frequent use by broad and diverse

audiences. Hybrid offerings that combine hosted and on-premises access are growing in popularity for internal use, such as for company meetings and training activities

Sharing content and ideas across distributed virtual teams through teaming platforms is a growing segment. Cloud-based and SaaS revenue represented approximately 45% of total teaming platform market revenue in 2011, up from 40% in 2009.

In the social software suites segment, use of cloud-based and SaaS services represented approximately 58% of total market revenue in 2011 and varied by social software technology, with the most popular usage for blogs, external-facing communities, feeds/syndications and wikis.

Cloud-based and SaaS models have many potential advantages for collaboration and social software deployments. Buyers of these services tend to be business executives with marketing, R&D or HR budgets. Cloud-based offerings have also opened up access to collaboration and social software technology to small and midsize businesses (SMBs) that would not otherwise consider on-premises deployments.

Cloud Application Infrastructure Services (PaaS)

Analysis by Fabrizio Biscotti

The PaaS market is still evolving, and several large vendors have yet to make a significant market move but are likely to do so in the near future. Therefore, the PaaS market is expected to undergo significant shifts that will impact the traditional vendor landscape of most infrastructure software markets. In particular, it will affect the application development and the database markets, but most of all, it will create a shift in the dynamics of the application infrastructure and middleware (AIM) market (both on-premises and in the cloud).

Initial PaaS products primarily supported application server capability, but the market has since expanded to encompass other middleware capabilities as a service, such as integration, process management, portal, database and application life cycle management (ALM) services (see "Platform as a Service: Definition, Taxonomy and Vendor Landscape, 2012"). PaaS offerings are initially set to take market share from the integration, application server and business process management (BPM) markets for SMBs, but as the technology matures, PaaS offerings will challenge the advanced projects at large enterprises and independent software vendors (ISVs) as well.

One of the likely consequences of cloud computing for the AIM market is further market concentration. When application infrastructure is deployed on-premises, organizations can take a best-of-breed approach, although this is typically more complex than a "best of suite" approach (purchasing all the application infrastructure for a certain class of project from the same vendor) or "best of brand" approach (adopting the entire application infrastructure stack of a given vendor for all projects). For practical reasons, best of breed in a purely cloud-based approach is less attractive. Combining BPM technologies, enterprise service bus suites, application platforms and complex-event processors provided "as a service" by diverse cloud suppliers of different data centers may create excessive integration, security and management issues that would discourage many

prospects. The prevailing approach for PaaS (and other "as a service" technologies) will most likely be best of suite or, in some instances, best of brand.

Application Development

Application development in the cloud currently articulates in two segments

- Cloud ALM services
- Cloud application security services

Cloud ALM Services

Cloud ALM service offerings have been of interest to small teams using agile practices to deliver opportunistic solutions and to distributed teams that need to collaborate effectively. We expect to see this change over the next three years as initial pilots show success and the major vendors enter the market.

The cloud ALM service market will continue to see growth on the back of a buoyant SaaS market in need of tools that utilize cloud resources to dynamically provision resources and offer agile development. Growth will also continue as developers maintain their focus on collaboration and continuous integration and scalability to meet the demands of Web application testing, speed of deployment, and flexibility for organizations with a mix of in-house and contracted resources.

Cloud Application Security Services

SaaS provides critical enablement for mass security adoption by all organizations. In particular, cloud providers will have high concentrations of their clients' data and applications exposed on the public Internet, which will make them top targets for hackers. For this reason, cloud application security services will continue to be a central piece of the PaaS strategies for all organizations.

Application Infrastructure and Middleware

Application platform as a service (aPaaS) will continue to grow by offering cloud services that enable ISVs to achieve results faster, at a lower cost and with greater flexibility.

SMBs trust cloud providers to offer more advanced performance, availability, security, integrity and productivity than what their in-house IT can ever provide with their limited budgets and limited ability to attract top engineering talent.

ISVs will look to build business applications as a cloud service. The enabling technology for the ISVs' SaaS is aPaaS or its technology rendition — cloud-enabled application platform.

Database Management Systems

A DBMS provides a foundation for the development of cloud applications without the necessity of building IT infrastructure to support the development activities.

We expect increased use of DBMSs in mobile applications where latency issues are less important for performance. The increasing use in SaaS applications developed to run in the cloud by third-party software vendors requiring the flexibility provided by DBMSs will help drive growth in DBMS PaaS offerings.

In 2011, the cloud-based DBMS market was $16.4 million. By 2016, the DBMS PaaS market will grow to $118.6 million, reflecting a CAGR of 48.5%, the highest forecast growth rate of any segment in the public cloud services market.

Business Intelligence Platforms

According to Gartner's annual survey of CIO technology priorities (see Note 2), BI and analytics have once again been named the top priority for 2012. For this and other reasons, BI platforms have been growing above the market average and are forecast to continue to do so through the forecast period. Given the growth in adoption of SaaS, the BI platform market will benefit as business users look to use SaaS offerings to augment existing application functionality and to analyze data already in the cloud.

BI platforms will also benefit from the industry trend of reducing complexity. BI and analytic environments are often described as difficult to implement, maintain, develop and use — a key reason why BI isn't more broadly deployed today. Cloud services play an important role in removing complexity from BI implementations. While only 30% of participants of Gartner's "Magic Quadrant for Business Intelligence Platforms" 2011 survey indicated they were using or planning to use cloud-based offerings for business analytics, the number is growing, albeit slowly. Many who do use cloud analytics augment existing BI capabilities — some with specific business applications purchased from cloud analytic providers; others with PaaS options to move analytic processing to an elastic computing environment where they can scale up or scale down capacity at will. Some choose to store data in the cloud; others keep it on-premises where they feel it is more secure.

Cloud System Infrastructure Services (IaaS)

Analysis by Ed Anderson

Gartner forecasts for cloud-based IaaS include three segments: cloud compute services, cloud print services, and cloud storage services. Storage is expected to grow 34.7% in 2012, with a growth spike from 2012 through 2013 of 52.0%, after which growth will taper back to 26.2% in 2016. Storage will grow from an $850 million market in 2011 to a $4.0 billion market in 2016. Compute services will see strong growth through the forecast period, with annual end-user spending of $20.3 billion in 2016, reflecting a CAGR of 43.2% (2011 through 2016).

Compute

Analysis by Gregor Petri

Cloud compute services will be highly cost-effective for small IT organizations; however, they will provide only moderate cost savings for most midsize IT organizations. Excluding burst capacity and

other temporary needs, these services will offer only limited cost savings for large IT organizations. Agility, not cost, will be the primary reason that many organizations adopt cloud compute services. Workloads that have highly volatile or unknown resource requirements will find cloud compute services to be a very cost-effective approach. Those with static users and resource requirements (and high security demands) may not find compelling cost savings from cloud compute services.

Cloud compute services are expected to grow 48.7% in 2012 and will gradually slow to 30.2% growth in 2016. During that time period, cloud compute services will grow from a $3.4 billion market in 2011 to a $20.3 billion market in 2016.

This is a complex market, with many segments (see "Market Insight: Structuring the Cloud Compute IaaS Market"). Applications placed on the cloud will, through the early years of the forecast, include a mix of existing and new applications. Increasingly, new applications will be written with commodity cloud infrastructure in mind and on cloud platforms; the resiliency of such applications lies in the applications themselves (that is, designed for the cloud — not migrated to the cloud), and not in the underlying infrastructure. Regardless, both new and existing applications will continue to expect levels of infrastructure availability and performance that are comparable to those of traditional data centers. While the fastest growth in the market is initially in commodity cloud compute for new applications, the later years of the forecast have growth driven by new applications, including the migration of existing traditional business applications.

Cloud compute services will rapidly replace dedicated servers for most Web-hosting needs. Large production databases and other "big iron" applications, as well as applications with cloud-unfriendly software licensing terms, will remain on dedicated hardware. Most current infrastructure utility offerings do not qualify as cloud services, but as providers increasingly exploit virtualization technology to enable flexible scaling of resources and security and self-service management systems, we will see a gradual transition.

Factors negatively impacting public cloud compute as a service growth may be:

- Addition of cloud-like characteristics (such as pay as you go, elasticity or simply high discounts) to traditional infrastructure propositions such as hosting and outsourcing
- Delays in next-generation business applications coming to market and difficulties in migrating existing applications that were not designed for cloud compute infrastructure and require traditional, nonautomated operations and monitoring
- A tempering of the initial enthusiasm of business leaders due to highly visible and publicized outages of public cloud services
- Continued privacy and compliance concerns in some geographies (especially in Europe) regarding access to data by foreign governments under laws such as the USA Patriot Act, especially if those concerns are not addressed properly by global providers and/or if local providers are slow in bringing locally compliant solutions to market
- Lack of standardization on (open) APIs for compute as a service by providers and customers and/or no single vendor succeeding in setting de facto industry standards for such APIs

Storage

Analysis by Warren Bell

Cloud storage (also referred to as storage as a service) is growing as a result of several factors, including familiarity (users are already familiar with cloud storage from the consumer space), ease of access (cloud storage offers the ability to access data via multiple methods), price (cloud storage starts at lower price points than traditional storage solutions) and scalability (cloud storage providers can easily change the amount of storage available to a client).

Also contributing to growth is the proliferation of vendors offering cloud storage services. In addition to Web-based technology firms, such as Amazon and Google, system integrators (such as CSC, IBM and Unisys), hardware vendors (such as Dell and HP) and communications service providers (such as AT&T, BT and Verizon) also offer cloud-based storage services.

Growth will occur in all regions, with the potential to expand rapidly in regions with nascent storage markets. Just as some countries in Asia/Pacific and Latin America were able to bypass plain old telephone service and go straight to mobile phones, cloud storage will allow some enterprises to bypass acquiring fixed storage facilities for their business needs and adopt cloud storage solutions.

One limiting factor to the growth of cloud storage is data security. Industries such as government and healthcare place strict limits on where and how data can be stored. To serve clients in those industries, providers will be challenged to demonstrate that data stored in the cloud can be maintained within political borders in accordance with federal laws and industry regulations.

As an example, most national governments require that their data remain within their borders at all times. This forces providers to demonstrate they have adequate cloud assets within the country to perform the duties satisfactorily. Another constraint on wider adoption is the lack of developed SLAs. Enterprises now expect robust SLAs on IT sourcing contracts, and many cloud providers are still working to reach that level. Until service providers offer SLAs with meaningful provisions that address risks involved with cloud services, some enterprises will be reluctant to fully adopt the model.

Print

Analysis by Federico De Silva

The traditional print market is shrinking in most market segments and regions of the world, and print technology providers are responding by offering services aimed at lessening the declining page volumes, which are the essence of current business models.

The increase in the mobile or remote workforce also breaks with the traditional desktop printing model. This requires the ability for mobile workers to have access to output devices as they move from one location to another, or even within the same office (for example, in different departments, floors or buildings in a campus). Further, the rapid adoption of mobile devices means that users are bringing their own devices to work and expect access to output in an easy and location-independent way, driving the need for cloud-based mobile printing services.

The continued growth in electronic communication, with variable and constant updates, makes information irrelevant in a shorter period of time. This in turn requires the ability for users to print information that is up-to-date, again regardless of location, unlike traditional desktop printing. What eventually gets printed is of higher value to the user, translating into higher margins for the print service provider.

The demand for printing (which goes beyond printer hardware and even consumables as the traditional market is defined) is shifting from owned and/or leased printers and multifunction products to access to document services, which goes beyond the simple printed page. Cloud print services are following trends in the broader managed print service market.

Cloud Management and Security Services

Analysis by Ed Anderson

Cloud management and security services provide many of the core, supporting services required for successful adoption of the other cloud services outlined in this report. Cloud management and security growth will, therefore, be subject to the same market forces impacting growth of the other cloud services highlighted here. In this report, we bring these three specific categories together to highlight the new market opportunity building in this segment of the public cloud services market.

IT Operations Management

Analysis by Laurie Wurster

Cloud management platform (CMP) software is experiencing strong growth in percentage of sales for public cloud and is projected to continue at a CAGR of 38.2% over the next five years. Public cloud-based CMP tools are expected to assist with the growth of the overall ITOM market (which experienced 8.7% growth in total software revenue for 2011, driven predominantly by tools to manage cloud and virtual environments). However, as the lines between public and private cloud continue to blur, distinguishing revenue associated with only public cloud management will become more and more difficult to determine since customers want to be able to manage their entire infrastructure in a unified way, regardless of the way it is being used or deployed or who the underlying technology vendors are.

The growth and adoption of cloud-based management services is driven by the following key factors:

- Cost constraints of purchasing organizations
- The potential for just-in-time deployment of increased capacity via the cloud
- Functionality that aligns with and meets immediate business requirements of IT services and delivers them effectively throughout the ITOM life cycle

CMP software enables management of public (and hybrid clouds) and includes a significant set of traditional ITOM technologies, including service catalog, service-level management, chargeback and capacity management. The fact that CMPs collapse multiple ITOM technologies into a single

offering, makes the stakes particularly high for the Big Four ITOM vendors (IBM, CA Technologies, BMC and HP) to enter this emerging market in order to protect and grow their revenue base. Moreover, depending on the type of cloud implemented, CMPs could drive additional ITOM functionality, such as in the area of monitoring and root cause analysis.

CMP vendors such as Microsoft and VMware are enticing service providers (through discounting and bundled pricing) not only to use their product offerings (with the hope of a new sales channel for their software), but also to lock-in their platforms across data centers to achieve the hybrid style of computing. Some vendors offer software-only solutions, including small vendors such as Abiquo, Adaptive Computing, DynamicOps, ManageIQ and ServiceMesh, and are the most innovative; however, they lack the sales and marketing channels necessary to match large vendors' revenue generation capabilities.

Although revenue for public application of CMP tools will continue grow at a solid rate over the forecast period, it is expected to remain less than a billion-dollar portion of the overall ITOM market (estimated at $25 billion by 2016). With many vendors already crowding the market, Gartner expects a great deal of consolidation over the next five years, with larger vendors acquiring point solutions to round out their product portfolios.

Storage Management

Analysis by Jie Zhang

In the market for storage management software as a cloud service, three distinct market subsegments have been emerging: data archiving, backup/recovery and file sync/sharing. This Forecast Overview includes only archiving and backup services. File sync/sharing as a service is more nascent, and the revenue data will be complied over time. Eventually, we may forecast all three markets, as well as publish a revenue breakdown by subsegment.

The forecast data is derived from three types of providers: established vendors, small storage software vendors, and new service providers. The growth rate for 2012 and forward are a combination of both archiving and backup services. Gartner's data from the last three years indicated that archiving cloud services have been growing faster than backup cloud services. We estimate archiving accounts for more than 60% of total estimated cloud revenue and will continue this trend in the next five years. Together, cloud archiving and backup services had estimated revenue of $842.1 million in 2011. Annual growth rates exceeding 40% are projected for 2012 and 2013; the market will continue strong growth beyond 2013 into 2016. The five-year CAGR is forecast at 30.6%, with the total market size reaching $3.2 billion by 2016.

In the past two years, Gartner has seen an increasing trend of cloud services adoption for archiving and increasing interest for backup software. File sync/sharing as a service is also garnering much attention. For most enterprises, data archiving is a perfect candidate for the cloud. Cloud backup is finding traction mainly from the SMB and remote office/branch office markets. Data in both cases is generally removed from mission-critical processing and is accessed infrequently, with little need for high latency in the case of archiving. Today, cloud providers are more committed to resolving issues related to data security and SLAs. As a result, more enterprise usage requirements are met by the

cloud providers. In the next three years, the adoption rate will accelerate. Over time, the revenue will shift from software license and maintenance contracts to cloud services subscriptions. This means revenue growth will slow down for on-premises software.

Compared with the total storage management software forecast (see "Forecast: Storage Management Software Market, Worldwide, 2009-2016, 2Q12 Update"), more than 30% of total archiving and backup revenue will come from cloud services. The inflection point could arrive within the next decade. The market opportunity is very promising for all storage vendors. Many established storage vendors have already started delivering their on-premises archiving or backup software via the cloud. Many more new entrants — pure cloud services providers — are seizing this opportunity as well. These smaller vendors are competing aggressively by taking advantage of the nascent state of the market. Their agility in adapting to new and changing business requirements puts them in a good position to compete. Partnership with traditional storage hardware vendors is the other popular go-to-market strategy for these small vendors.

Consumer technology and IT driven by the user are other drivers fostering and, in some cases, forcing enterprise cloud adoption. For example, the popular Dropbox has pressured many enterprises to examine similar enterprise-focused solutions. IT demands cloud services that can offer users easy-to-use services (similar to Dropbox) but with high-level security and data protection. Consequently, many consumer services are now also offering their services to small businesses and enterprises with enhanced versions of their consumer services. All these forces will continue to drive growth of this market.

Security

Analysis by Ruggero Contu

The cloud security service market is forecast to benefit from considerable growth over the next five years as a result of increased maturity and acceptance of deploying security delivered through the cloud rather than through traditional software, on-premises security appliances or software tools. The opportunity to leverage fast and easy product deployment, along with the potential for a lower total cost of ownership, is driving increasing demand for cloud-based security services.

Although the expected growth of cloud-based security is driven by ROI and other efficiency benefits, ideal solutions will also provide incremental security improvements that are not achievable via on-premises solutions. Costs associated with traditional security on-premises appliances, such as maintenance of the hardware and data center rack space, and power and cooling costs can be eliminated through deployment of a cloud solution. Costs associated with software-based products, including maintenance, updates and technical support, can also be minimized considerably.

There are operational advantages when implementing a cloud-based security solution. Gartner expects organizations to opt for cloud-based solutions to achieve faster solution implementations and easier-to-maintain security controls.

A number of factors inhibit the adoption of cloud-based security. As a result, not all organizations will find this delivery model to be suitable. For certain organizations, the requirement of high-level customization of its product features makes cloud-based security services, which rely on

standardized, multitenancy implementations, unsuitable because they do not offer the granularity needed.

Geographical location is potentially also a significant factor inhibiting adoption of cloud-based security services. This is because, to fully benefit from the opportunities this delivery model offers, organizations need to reside in locations where network and Internet access are reliable since any disruption or network downtime would impact service quality and delivery of in-the-cloud security services, with potentially serious consequences to the security setup of business.

Description of Data

Public Cloud Services Market Segmentation

In the 2Q12 public cloud services forecast, Gartner introduces a new, more detailed segmentation and expanded geographic coverage, including country-level details for key countries. For a detailed review of Gartner's definition of the public cloud marketplace, including market segmentation, geographic focus areas and forecasting methodology, readers are encouraged to review "Market Definitions and Methodology: Public Cloud Services."

The segmentation used in this forecast overview is outlined in Table 5.

Table 5. Public Cloud Services Market Segmentation, 2Q12

Segment	Subsegment
Cloud Business Process Services (BPaaS)	Cloud Advertising Customer Management E-Commerce Enablement Finance and Accounting Human Resources Industry Operations Cloud Payments Supply Management
Cloud Application Services (SaaS)	Business Intelligence Applications Customer Relationship Management Digital Content Creation Enterprise Content Management Enterprise Resource Planning Office Suites Project and Portfolio Management Supply Chain Management Web Conferencing, Teaming Platforms and Social Software Suites Other Application Software
Cloud Application Infrastructure Services (PaaS)	Application Development Application Infrastructure and Middleware Business Intelligence Platform Database Management Systems
Cloud System Infrastructure Services (IaaS)	Compute Print Storage
Cloud Management and Security Services	IT Operations Management Security Storage Management

Source: Gartner (August 2012)

The geographical segmentation is outlined in Table 6.

Table 6. Public Cloud Services Geographical Segmentation, 2Q12

Region	Countries
North America	Canada United States
Latin America	Argentina Brazil Mexico
Western Europe	France Germany Italy Netherlands Spain United Kingdom
Eastern Europe	Poland
Eurasia	Russia
Greater China	China
Mature Asia/Pacific	Australia Japan South Korea
Emerging Asia/Pacific	India Indonesia
Middle East and North Africa	Turkey
Sub-Saharan Africa	

Source: Gartner (August 2012)

Gartner has been publishing public cloud services forecast data for the past several years. Additional information is provided to help readers reconcile previously published public cloud services forecasts with new forecast segmentation and methodology. For a review of the key differences between past forecasts and 2Q12 forecast update, see the Reconciling Gartner's Previous Public Cloud Forecasts With the 2Q12 Update section.

Gartner's public cloud forecast comprises forecast data highlighted in the enterprise software forecast, IT services forecast and other public cloud-related data. All data related to public cloud services is aggregated into this single, unified view. For more detail on these forecasts, including the forecast model, insights and assumptions, refer to:

- "Forecast Analysis: IT Outsourcing, Worldwide, 2010-2016, 2Q12 Update"
- "Forecast Analysis: Enterprise Application Software, Worldwide, 2011-2016, 2Q12 Update"

Reconciling Gartner's Previous Public Cloud Forecasts With the 2Q12 Update

Prior to the publication of the public cloud services forecast in June 2012, Gartner's most recent forecast for public cloud services was published June 2011. As already noted, the segmentation for the cloud services market has been updated to reflect new market conditions and additional market insights. A mapping of the previous segmentation, with the new updated segmentation, can be found in Table 7.

For a complete review of the previously published public cloud forecast, see "Forecast: Public Cloud Services, Worldwide and Regions, Industry Sectors, 2010-2015, 2011 Update."

Table 7. Market Segmentation Mapping: Public Cloud Services Forecast 2011 Update to Public Cloud Services Forecast 2Q12 Update

2011 Update	2Q12 Update	Notes
Business Process Services	**Cloud Business Process Services (BPaaS)**	In the 2Q12 update, we refer to this section of the cloud forecast as BPaaS. The top-line BPaaS forecast can be reasonably compared year to year.
Advertising	Cloud Advertising	In the 2Q12 update, we include cloud advertising as a subsegment of BPaaS.
E-Commerce	E-Commerce Enablement	A subsegment of BPaaS.
Payments	Cloud Payments	A subsegment of BPaaS.
HR	Human Resources	A subsegment of BPaaS.
Supply Management	Supply Management	A subsegment of BPaaS.
Demand Management	Customer Management	Demand management is now captured under the customer management subsegment of BPaaS.
F&A and Administration	Finance and Accounting	Administration was eliminated as a separate subsegment in the 2Q12 forecast. The subcategories under administration were addressed in other areas.
Operations	Industry Operations	A subsegment of BPaaS.
Applications	**Cloud Application Services (SaaS)**	In the 2Q12 update, we refer to this section of the cloud forecast as SaaS. The top-line SaaS forecast can be reasonably compared year to year.
SaaS	Business Intelligence Applications Customer Relationship Management Digital Content Creation Enterprise Content Management Enterprise Resource Planning Office Suites Project and Portfolio Management Supply Chain Management	In the 2Q12 update, we provide additional market segmentation and add 10 subsegments. The top-line SaaS forecast can be reasonably compared year over year.

	Web Conferencing, Teaming Platforms and Social Software Suites Other Application Software	
Application Infrastructure	**Cloud Application Infrastructure Services (PaaS)**	In the 2Q12 update, we refer to this section of the cloud forecast as PaaS. The top-line PaaS forecast can be reasonably compared year to year. Note that the PaaS forecast was further updated in September 2011 (see "Forecast: Platform as a Service, Worldwide, 2010-2015, 3Q11 Update").
Application Infrastructure Services	Application Development Application Infrastructure and Middleware Business Intelligence Platform Database Management Systems	In the 2Q12 update, we provide additional market segmentation and add four subsegments as noted.
System Infrastructure	**Cloud System Infrastructure Services (IaaS)**	In the 2Q12 update, we refer to this section of the cloud forecast as IaaS. Year-to-year comparisons can be made between compute services and storage services.
Compute Services	Compute	A subsegment of IaaS.
Storage Services	Storage	A subsegment of IaaS.
Backup Services	Storage Management	In the 2Q12 update, we capture forecast data related to backup services in the storage management subsegment of the cloud management and security segment of the 2Q12 update of the public cloud forecast.
NA	Print	In the 2Q12 update, we add an additional subsegment for cloud print services.
NA	**Cloud Management and Security**	In the 2Q12 update, we add an additional segment to reflect a class of cloud services that are not included in BPaaS, SaaS, PaaS or IaaS.
NA	Security IT Operations Management Storage Management	In the 2Q12 update, we add three new subsegments to the new cloud management and security segment as noted.

NA = not applicable

Source: Gartner (August 2012)

A regional breakout of cloud forecast data was provided in the 2011 update. In the 2Q12 update, the geographical segmentation was updated consistent with Gartner's global forecasting methodology. A mapping of regional information is outlined in Table 8.

Table 8. Geographical Segmentation Mapping: Public Cloud Services Forecast 2011 Update to Public Cloud Services Forecast 2Q12 Update

2011 Update	2Q12 Update	Notes
North America	North America	In the 2Q12 update, we provide additional detail for Canada and the U.S.
Western Europe	Western Europe	In the 2Q12 update, we provide additional detail for France, Germany, Italy, the Netherlands, Spain and the U.K.
Eastern Europe	Eastern Europe Eurasia	In the 2Q12 update, we break Eastern Europe into two regions: Eastern Europe and Eurasia. Within the Eastern Europe region, we provide additional detail for Poland. Within the Eurasia region, we provide additional detail for Russia.
Middle East and Africa	Middle East and North Africa Sub-Saharan Africa	In the 2Q12 update, we break Middle East and Africa into two regions: Middle East and North Africa and Sub-Saharan Africa. Within the Middle East and North Africa region, we provide additional detail for Turkey.
Japan	Mature Asia/ Pacific	In the 2Q12 update, we add a new region, Mature Asia/Pacific, and include Japan in that region.
Asia/Pacific	Greater China Mature Asia/ Pacific Emerging Asia/ Pacific	In the 2Q12 update, we break Asia/Pacific into three regions: Greater China, Mature Asia/Pacific and Emerging Asia/Pacific. Within the Greater China region, we include additional detail for China. Within the Mature Asia/Pacific region, we include additional detail for Australia, Japan and South Korea. Within the Emerging Asia/Pacific region, we include additional detail for India and Indonesia.
Latin America	Latin America	In the 2Q12 update, we provide additional detail for Argentina, Brazil and Mexico.

Source: Gartner (August 2012)

In the 2011 update, we included an industry sector breakout of the cloud forecast data. This information is not provided in the 2Q12 update.

For a comparison of growth rates between the public cloud services forecast 2011 update and the public cloud services 2Q12 update, see Table 9. This comparison uses only top-line data for BPaaS, SaaS, PaaS and IaaS, and outlined in the mapping table above (see Table 7).

Table 9. Differences in Segment Forecast: Comparing the Public Cloud Services Forecast 2011 Update and the Public Cloud Services Forecast 2Q12 Update (Percent)

	2011	2012	2013	2014	2015
BPaaS	-0.8	-1.2	-2.9	-0.9	-0.1
SaaS	4.7	3.1	3.1	2.9	2.6
PaaS	42.9	26.5	10.3	15.9	2.3
IaaS	-9.5	-10.6	-9.5	0.4	1.7
Total	**0.6**	**0.0**	**-1.6**	**0.3**	**0.6**

Source: Gartner (August 2012)

Note that the PaaS forecasts from the two publications differed substantially. For a more current comparison, see the PaaS forecast data, which was updated in September 2011 (see "Forecast: Platform as a Service, Worldwide, 2010-2015, 3Q11 Update").

Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Market Definitions and Methodology: Public Cloud Services"

"Forecast Alert: IT Spending, Worldwide, 2Q12 Update"

"Forecast Overview: IT Spending, Worldwide, 2009-2016, 1Q12 Update"

"Forecast: Enterprise Software Markets, Worldwide, 2011-2016, 2Q12 Update"

"Forecast: IT Services, 2010-2016, 2Q12 Update"

"Forecast Overview: IT Services, 2008-2015, 4Q11 Update"

"Forecast Analysis: IT Outsourcing, Worldwide, 2010-2016, 2Q12 Update"

"Forecast Overview: IT Spending, Worldwide, 2008-2015, 4Q11 Update"

Acronym Key and Glossary Terms

AIM	application infrastructure and middleware
ALM	application life cycle management
aPaaS	application platform as a service
BI	business intelligence
BPaaS	business process as a service
BPM	business process management
BPO	business process outsourcing
CAGR	compound annual growth rate
CMP	cloud management platform
DBMS	database management system
DCC	digital content creation
ECM	enterprise content management
F&A	finance and accounting
IaaS	infrastructure as a service
IAB	Interactive Advertising Bureau
ISV	independent software vendor
ITOM	IT operations management
NA	not applicable
PaaS	platform as a service
PPM	project and portfolio management
SaaS	software as a service
SCM	supply chain management
SMB	small and midsize business

Evidence

[1] "Survey Analysis: Providers of IT and Cloud-Based Services Must Focus on the Details to Satisfy Customer Demands," Gartner, 5 March 2012.

[2] "Market Share Analysis: IT Outsourcing Services, Worldwide, 2011" Gartner, 30 April 2012.

[3] "Micro-, Small and Medium-Sized Enterprises in Emerging Markets: How Banks Can Grasp a $350 Billion Opportunity," McKinsey & Co., 2012.

[4] "Forecast: Enterprise Software Markets, Worldwide, 2011-2016, 2Q12 Update"

[5] "User Survey Analysis: Understanding Supply Chain Management Software Buyers, North America, 2011," Gartner, 24 March 2011.

Note 1 Gartner's Global IT Spending Overview

Gartner's global IT spending forecast includes five sectors:

- Computing hardware
- Software
- IT services
- Telecom services
- Telecom equipment

The public cloud services forecast is derived primarily from Gartner's enterprise software and IT services forecasts. In the respective forecasts produced for each sector, the impact of cloud services is noted. Some examples include the shift or transition of revenue from one part of the market to a cloud-related segment (captured in the public cloud services forecast):

- A slight decline in computing hardware is noted as hardware spending shifts from enterprise data centers to cloud data centers supporting IaaS.
- A shift in spending on traditional, prepackaged and/or licensed software is noted as growth in SaaS applications.
- IT outsourcing revenue is impacted as spending shifts to BPaaS, SaaS and IaaS.
- Traditional consulting revenue is positively impacted through the introduction of new, cloud-related consulting and professional services.
- Cloud-related development, including customization and integration work, shifts to PaaS.

Within Gartner's global IT spending forecast, the shift in spending patterns is noted and captured for each impacted market to preserve a cohesive and consistent view across all IT markets. For details, see "Forecast Alert: IT Spending, Worldwide, 2Q12 Update."

Note 2 CIOs Prioritize Cloud Computing to Drive Enterprise Growth, Innovation and Operational Performance

In Gartner's 2012 CIO study, we find that CIOs see their role as contributing to the growth of their respective businesses by attracting and retaining new customers, while reducing enterprise costs. Innovation is a key factor to accomplish these ends, and CIOs look to technology to help them achieve these goals. In the study, we found the use of cloud computing to be a priority for CIOs.

In a ranking of business strategies, CIO selected the following as their top three business-related priorities for 2012:

1. Increasing enterprise growth
2. Attracting and retaining new customers
3. Reducing enterprise costs

The business-related priorities for 2012 remain unchanged from 2011.

When ranking the technologies that CIOs see as their top priorities for 2012, they included the following top three technologies:

1. Analytics and BI
2. Mobile technologies
3. Cloud computing (IaaS, PaaS, SaaS)

This is a shift in priorities from 2011 when cloud computing, virtualization and mobile technologies ranked as the top priorities.

Details of this study can be found in "Amplifying the Enterprise: The 2012 CIO Agenda."

This document is published in the following Market Insights:

Business Process Outsourcing Worldwide
Carrier Network Infrastructure Worldwide
Carrier Operations & Strategies Worldwide
Computing Hardware Worldwide
Consulting & Solution Implementation Services Worldwide
Consumer Services Worldwide
Enterprise Communications Applications Worldwide
Enterprise Network Infrastructure Worldwide
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