CLOUD SERVICE INDUSTRY

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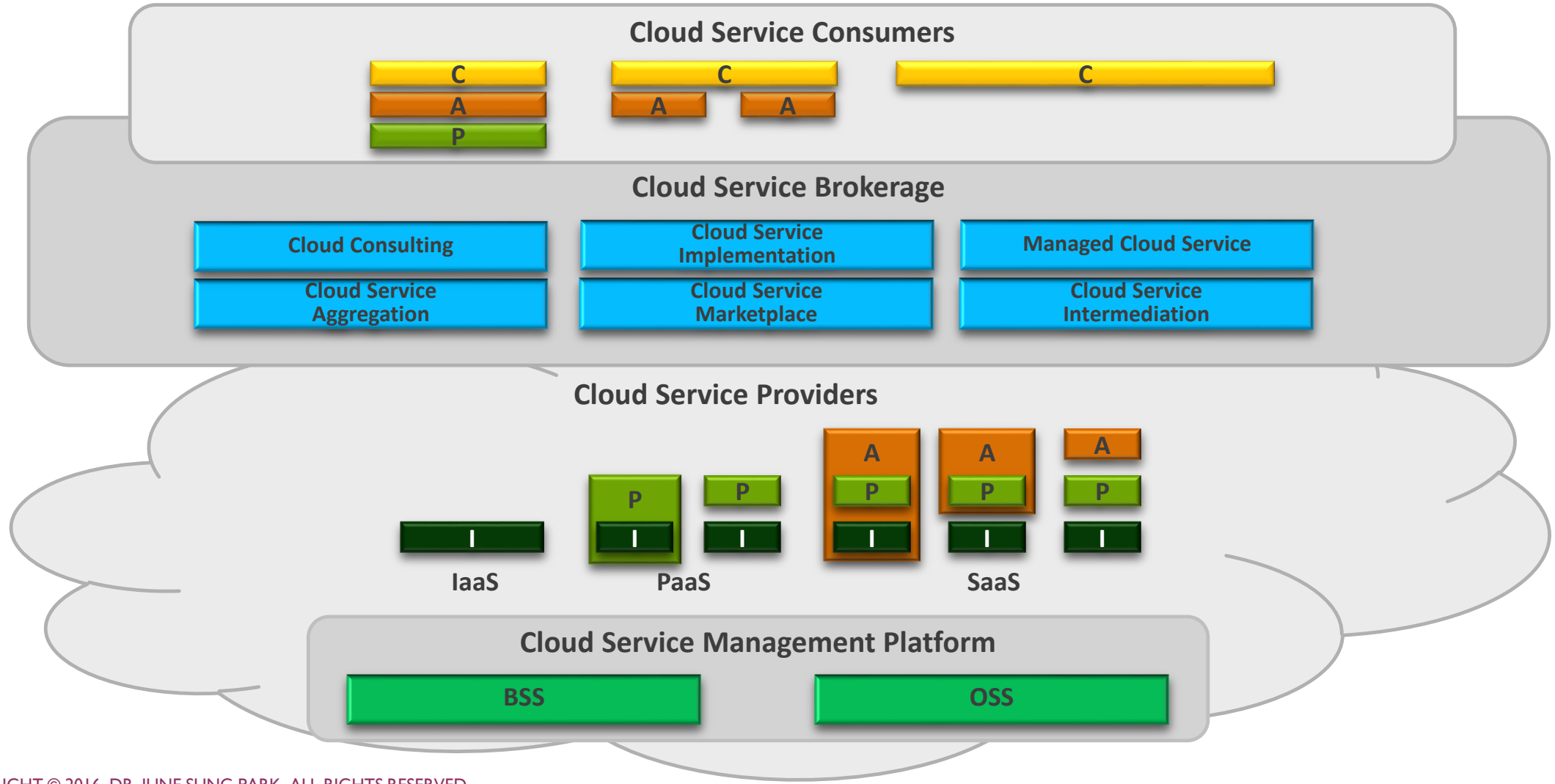
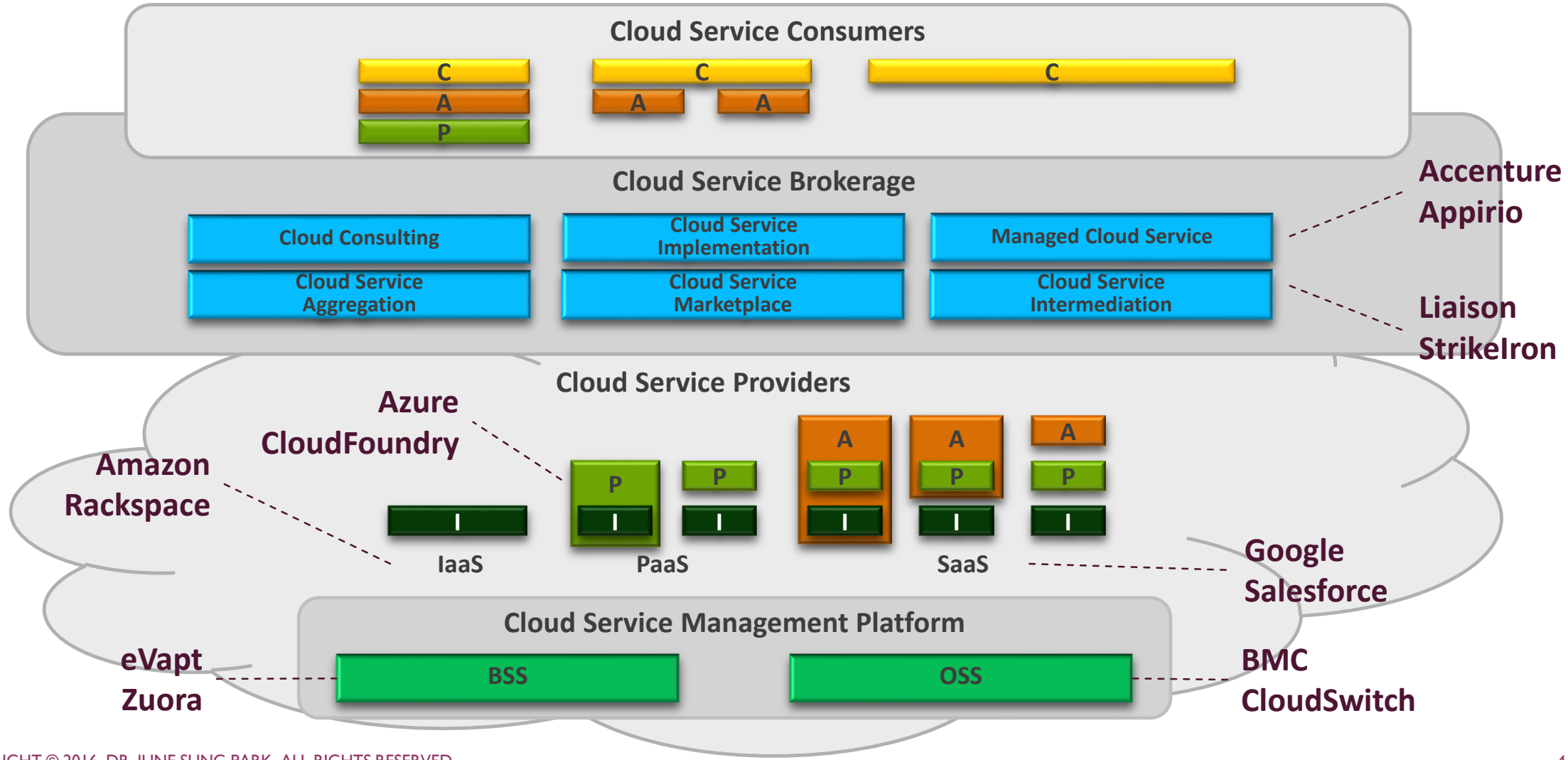
MODULE OBJECTIVE

- Understand the structure of cloud service industry.
- Understand how operating models are different among different segments of the cloud service industry.
- Understand the business of cloud service brokerage.

CLOUD SERVICE INDUSTRY LANDSCAPE



CLOUD SERVICE INDUSTRY LANDSCAPE



SOFTWARE BUSINESS MODELS

	Market Model	Price Model	Product Model	Process Model
Software Product Licensing	• Standard Product for Mass Market	• License + Maintenance Fee	• Single-Tenant Software • UI/API for Customization	• Agile Software Process
Software Product Hosting	• Standard Product for Mass Market	• License + Hosting Fee		• Agile Software Process • Service Management
SaaS / PaaS	• Standard Product for Global Market	• Usage Fee	• Multitenant Software • UI/API for Customization	• Agile Software Process • Automated Service Management
IT Service CSB	• Custom Development • Package Implementation • Could Service Implementation	• Cost-Plus or Fixed-Price	• Software Asset for Development Productivity	• Asset-Based Professional Service

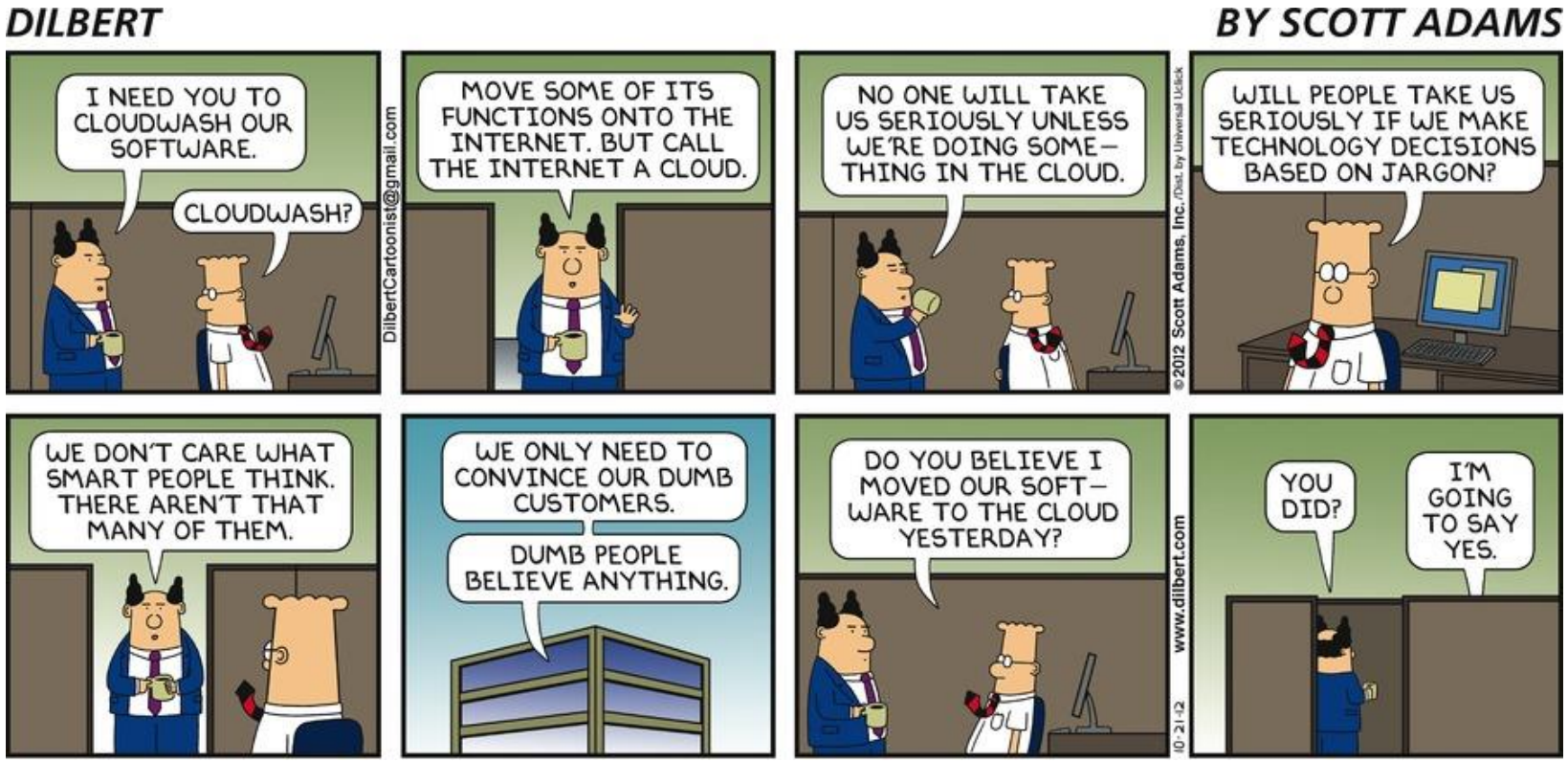
CLOUD VENDORS STRATEGIC POSITION

- Vendors' strategic positioning on cloud computing represents "enlightened self-interest"
  - Positioning themselves vis-à-vis where they think they can have an effect on, or benefit from, cloud computing.
  - Some using cloud computing as a marketing label for old technologies and offerings, which are called "washed" clouds.

Vendor	Positioning on Cloud Computing
Amazon	Global class, Internet-based operating platform for software
Google	Global class, Internet-enabled applications on a massively scalable platform
Salesforce	Multitenant, customizable, yet single-instance SaaS + PaaS
Accenture	Cloud Computing Accelerator to help enterprises adopt proven SaaS or build/move applications on/to PaaS/IaaS
IBM	IBM Smart Cloud to help enterprises build private clouds integrating IBM and public clouds
Microsoft	From Software + Services (S+S) to All-In Cloud (2010)
Oracle	From Oracle On Demand as vendor-managed software to All-In Cloud strategy (2015)
SAP	Better enterprise SOA

CLOUD WASHING

- Cloud washing is the purposeful and sometimes deceptive attempt by a vendor to rebrand an old product or service by associating the buzzword "cloud" with it.
- Cloud-washed software services are also called "fake clouds."



- Tom Siebel pioneered the CRM market when he left Oracle and founded Siebel in 1993.
  - At the time, many companied had automated their "back-office" functions with packaged ERP software, but few had automated their "front-office" operations—sales and marketing.
  - Siebel and its competitors—SAP, Oracle, PeopleSoft and Amdocs—initially targeted companies with over $1B in annual revenues.
- Hosted CRM applications started appearing in the market in the late 1990s through Application Service Providers (ASPs).
  - ASPs such as Corio helped small companies use CRM software such as Siebel without up-front costs for implementation and by only paying for access on a monthly basis. Customers owned their data, but it resided on servers with the ASPs.
  - In ASP model implementations were company-specific, "single tenant." Customers still had to rely on consultants to help configure the software.
  - ASP model was not successful because enterprise application packages were never designed specifically for a hosted setting and each deployment had its dedicated hardware and software.

D. Yoffie and A. B. Wagonfeld, Oracle vs. Salesforce.com, Harvard Business School, Case Study 9-705-440, 2006.

CASE STUDY: SAAS VS. HOSTED APPS

Salesforce.com vs. Oracle

- Salesforce.com started in 1999 by Marc Benioff, ex-Senior Executive at Oracle, developed a CRM SaaS that is delivered in a shared, "multitenant" environment.
- Siebel purchased UpShot—the number-two CRM hosting provider behind Salesforce.com—in 2003, released new versions of CRM On Demand in 2004, and achieved a total contract value of $58M in 2005.
  - CRM On Demand was designed so that customers could configure it without programming skills. It was maintained and hosted by Siebel and IBM in a secure multitenant environment. The basic application subscription was priced at $70 per user per month.
  - Siebel took a hybrid approach incorporating its licensed software and its On Demand application, both of which could share data.
  - Siebel began targeting SMBs with less than $500M of revenues.
  - In 2005 Siebel started offering CRM On Demand Industry Editions for financial services, high technology, life science and automotive industries at $100 per user per month.

CASE STUDY: SAAS VS. HOSTED APPS

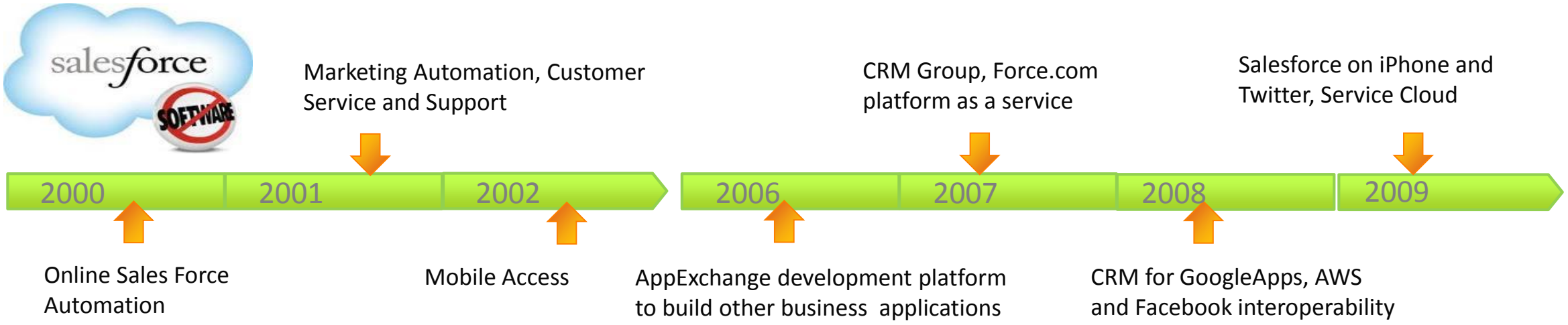
Salesforce.com vs. Oracle

- Oracle acquired PeopleSoft in 2005, and Siebel Systems, the largest CRM software vendor, in 2006 at about $6B. Oracle planned to offer a comprehensive suite of applications (many of which were acquired) on a single, open architecture that was designed to be extensible by customers and partners.
  - In 2004 Oracle started offering Oracle On Demand which allowed customers to purchase Oracle software in a hosted setting. Siebel's On Demand platform to deliver CRM as SaaS was one of the key reasons why Oracle purchased Siebel.
  - Siebel had an installed base of about 4M users for its packaged software at the time. However, Siebel CRM On Demand had substantially fewer subscribed users of 50K compared to Salesforce.com's customer base of 400K users. Moreover, Salesforce.com was demonstrating an impressive growth rate with about 50K users added per quarter. A Senior VP of Siebel in charge of the On Demand business model said they had about a five-year catch-up to do versus Salesforce.com.
  - Executive VP of Oracle On Demand's strategy was to provide a more "complete" On Demand solution than Salesforce.com.
  - After the merger Oracle changed the business model of CRM On Demand so that customers bought software licenses and Oracle host it for a fee.

CASE STUDY: SAAS VS. HOSTED APPS

Salesforce.com vs. Oracle

- While Siebel CRM On Demand offered prepackaged vertical application services, Salesforce.com offered a hosted application development environment and tool set to allow customers build their own customizations and vertical functionality.
  - Salesfore.com also provided an application platform to allow customers build business applications other than CRM and even to let customers share custom-built applications built on that platform.
  - Price ranged from $995/year for 5 users for small companies, $65/subscriber/month for medium ($500M-$1B) to large companies, to $125/subscriber/month for large companies wanting more features like customization and integration.



CASE STUDY: SAAS VS. HOSTED APPS

Salesforce.com vs. Oracle

Salesforce.com 2009 (Ended at Jan. 31)	Revenue		Gross Margin (% of Revenue)
	Million $	%	
Subscription and Support	985	91%	87%
IT Services	92	9%	-1%
Total	1,077	100%	80%

Oracle 2009 (Ended at May 31)	Revenue		Gross Margin (% of Revenue)
	Million $	%	
Software Licenses	7,112	26%	44%
Upgrades and Maintenance Services	11,997	44%	92%
IT Services	3,606	13%	18%
Consulting	3,221	12%	17%
Education and other services	385	1%	27%
On Demand Services	780	3%	27%
Total	27,101	100%	55%

CASE STUDY: SAAS VS. HOSTED APPS

Salesforce.com vs. Oracle

- Total cost of ownership of CRM software for mid-sized company (up to 200 users) over 5 years

Cost Category	Annual Costs (in thousand dollars)	CRM Package						CRM SaaS					
		Year 1	Year 2	Year 3	Year 4	Year 5	Five-Year Total	Year 1	Year 2	Year 3	Year 4	Year 5	Five-Year Total
Requirement Analysis	Strategy and Process Consulting	28					28	28					28
	Site Assessment and Testing	14					14						0
Software Purchase	User Licenses/Subscription	230					230	300	300	300	300	300	1500
	Maintenance and Tech Support	51	51	51	51	51	255						0
	Synchronization Module	4					4						0
	Other Modules	8					8						0
	Web/Wireless Servers	10					10						0
	External Web Access	1					1						0
Implementation	Customization and Integration	132					132	65					65
	Application Testing and Deployment	25					25						0
	Interactive Dashboards	120					120						0
	Hardware Procurement	120				15	135						0
	Infrastructure Testing and Deployment	53					53						0
	Data Center Buildout	425					425						0
Operation	Business Process Management		62		62	62	186						0
	Application Maintenance	16	16	16	16	16	80						0
	Upgrades			166			166						0
	Custom Reporting		44	44	44	44	176						0
	Data Center Operation	16	16	16	16	16	80						0
	IT Staff	120	120	120	120	120	600	45	45	45	45	45	225
	Training	50	50	50	50	50	250	20	20	20	20	20	100
	Downtime	240	240	240	240	240	1200	60	60	60	60	60	300
Fully Loaded Cost		1663	599	703	599	614	4178	518	425	425	425	425	2218

CASE STUDY: SAAS VS. HOSTED APPS

Salesforce.com vs. Oracle

- Japan Post, the world's largest financial institution, developed a custom, on-demand application for reporting customer inquiries and compliance-related issues as it advances toward privatization in October 2007.
- HitachiSoft developed the application within 3 months using Salesforce.com platform.
- More than 45,000 users have been subscribed to the Force.com platform, which is the largest on-demand platform deployment in the world.

CASE STUDY: SAAS VS. HOSTED APPS

Salesforce.com vs. Oracle

- Steve Ballmer announced "For the cloud, we're all in" in March 2010. He said, "We have 40,000 people employed building software around the globe, and about 70% of the folks are doing something designed exclusively for the cloud."
- Baller detailed 5 key dimensions of the cloud driving Microsoft:
  - Cloud provides people the opportunity to create and share content "instantaneously," but also requires a responsibility around privacy and confidentiality.
  - Cloud accelerate learning what the cloud learns about the world and about users, bringing data together to enable better decisions.
  - Cloud enhances your social and professional interactions and enables people to connect on multi-faceted levels.
  - Cloud enables smart devices, getting people, places, content, commerce all front and center for the users, with a very different point of view.
  - Cloud changes how software and hardware is designed and managed, and how application developers create apps.

ORACLE VS. MICROSOFT

All-In Cloud Strategy

- Oracle announced "Oracle's cloud is now complete" in June 2015, planning to compete on price against Goliath AWS with it own IaaS, provide a host of PaaS including aPaaS, iPaaS, DBaaS, Big Data as a service, MBaaS, and offering the most comprehensive portfolio of SaaS including ERP, SCM, CX, HR.
- This is Oracle's "all-in cloud moment," reminiscent of Steve Ballmer proclamation at Microsoft in 2010. It's a long time coming, but it's better late than never.

ORACLE VS. MICROSOFT

All-In Cloud Strategy

- This is a bit of an octopus strategy and an all-Oracle world, desperately trying to pivot away from its software licensing model as its earnings in 2014 showed significant drops in licensing revenue.

They are 4 years late to the party. It's pretty ridiculous how they have stubbornly kept their head in the sand on this for years because they have a captive audience they treat however they feel like.

It's more of a rearguard action to protect its existing customer base from going elsewhere, but Oracle still hasn't shown it has enough additional value on top of its core product, which is rapidly losing value.

It's also disingenuous for Ellison to disparage Amazon because there's probably as many Oracle licenses on AWS as there are anywhere else these days. Even Microsoft, which is perceived as the biggest competitor to AWS, is complimentary of what Amazon is doing, so the "us versus them" mindset of winners and losers isn't applicable in the current market.

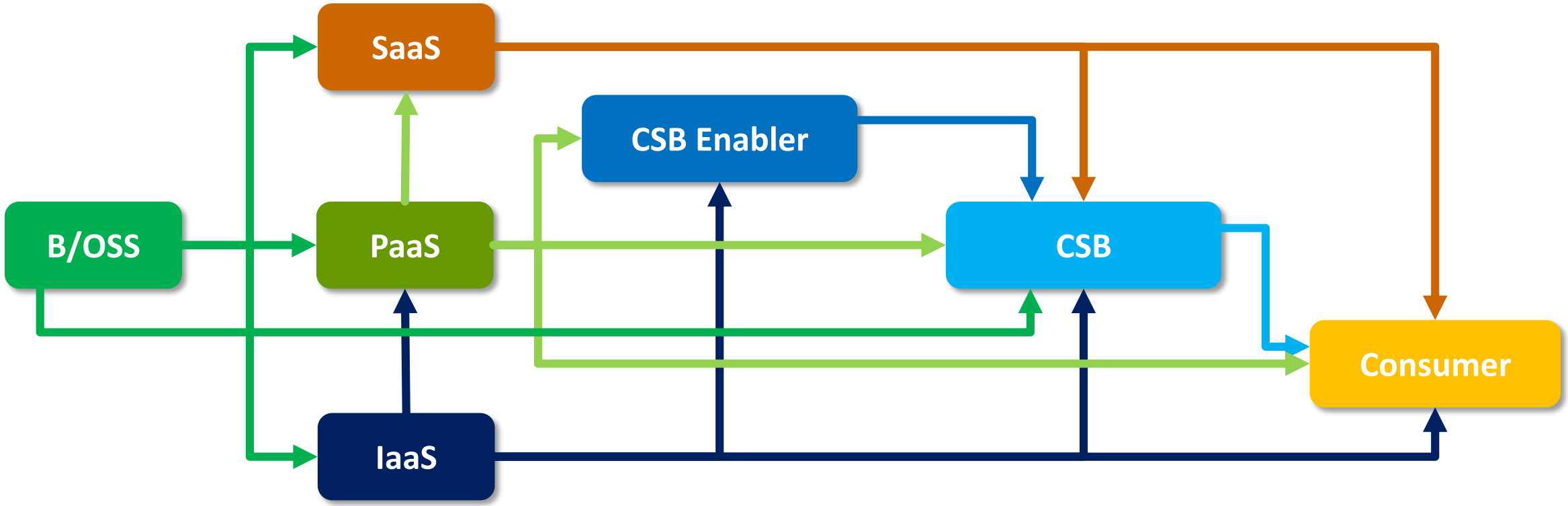
Carl Brooks, 451 Research, New York 6/23/2015

ORACLE VS. MICROSOFT

All-In Cloud Strategy

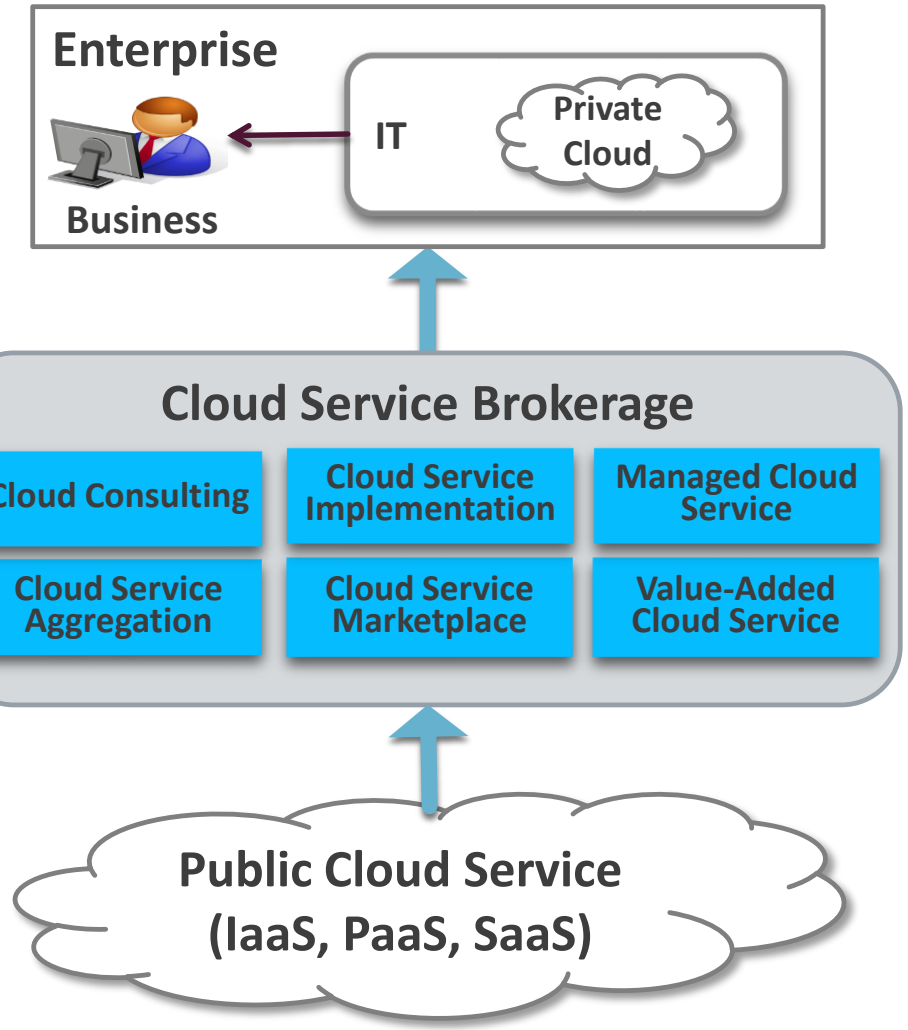
INTERMEDIATION OF CLOUD SERVICES

- Standard interface technologies such as Web services, REST services and composition technologies such as process orchestration, SOA and mashup are facilitating the commoditization of cloud services, and the intermediation of cloud services that adds value to, aggregates or distribute cloud services.



TAXONOMY OF CLOUD SERVICE BROKERAGE

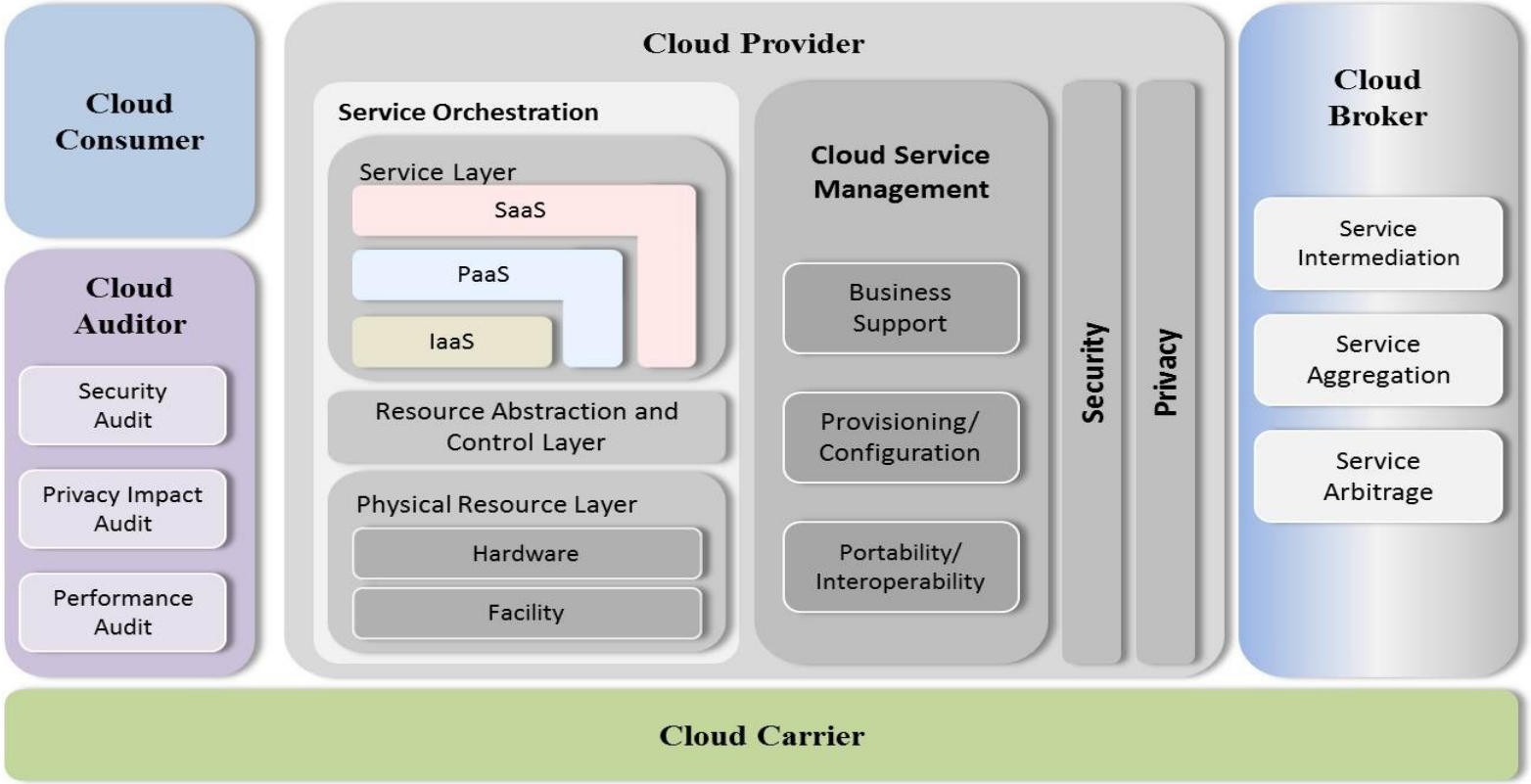
- Professional services:
  - Consulting to help enterprises adopt cloud services
  - PaaS-based application development
  - Customization and integration of SaaS and IaaS
  - Managed services for operation and management of cloud services—such as negotiating service levels and price, monitoring SLA violations, handling incidents tracking to resolution, etc.
- Online digital services (CSB as a service):
  - Value-add to cloud services including identity and access management, performance reporting, enhanced security, etc.
  - Cloud aggregation services combining multiple cloud services into one or more new services
  - Cloud service distribution using the vendor's own platform or third-party platforms
- CSB-Enabling Service
  - Providing operation and business support platforms for CSBs



CSB VENDORS

		Services	Vendors
Professional CSB Service		Consulting, implementation and outsourcing service	Accenture, Appirio, Capgemini Immediate, Celigo, CloudSwitch, CSC, Dell, enStratus, IBM Global Service, Infosys, Ltech, RightScale, TCS
CSB as a Service	**SaaS Brokerage**	SaaS Value-Added and Integration Brokerage	BlinkHR, Okta (IAM as a service), Parallels, psHealth, Skyvva, StrikeIron, Xignite
		B2B/e-Commerce Integration Brokerage	Amalto Technologies, Dell/Boomi, Covisint, Exostar, Gcommerce, GXS, IBM/Cast Iron, Liaison Technologies, Synnex
		Process Orchestration/ Collaboration Brokerage	Cordys, E2open, eBuilder, Genpact
		API Management as a Service	Layer 7, Mashery
	IaaS Brokerage	IaaS Value-Added and Integration Brokerage	Besol Soluciones, Gravitant, Oxygen Cloud, Parallels
		M2M Brokerage	Axeda
	Cloud Marketplace	Wholesale distributor of cloud services	Ingram Micro, Verecloud
	CSB-Enabler	Operation and business platform services for CSBs	Gravitant, Jamcracker, Zimory

- NIST cloud computing reference architecture includes CSB as a major actor in cloud computing and recommend government agencies to use CSB when adopting cloud services.



NIST, US Government Cloud Computing Technology Roadmap, Volume II, Release 1.0 (Draft)—Useful Information for Cloud Adopters, Nov. 2011.

CLOUD SERVICE BROKERAGE

U.S. NIST

- Appirio, a CSB startup company, developed sales and HR applications for Facebook using Force.com which is a SaaS development platform provided by Salesfoce.com as a service.

CLOUD SERVICE BROKERAGE – PROFESSIONAL SERVICE

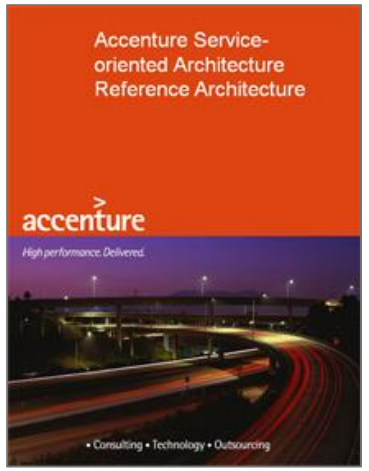
Appirio

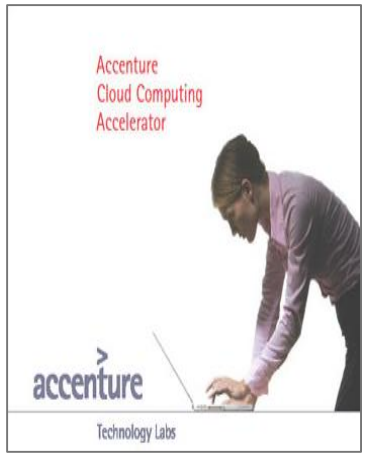
- Cognosys, an IT service provider providing the solution to help hospitals build a private cloud for mobile hospital management system based on Microsoft Azure platform

CLOUD SERVICE BROKERAGE – PROFESSIONAL SERVICE

Cognosys

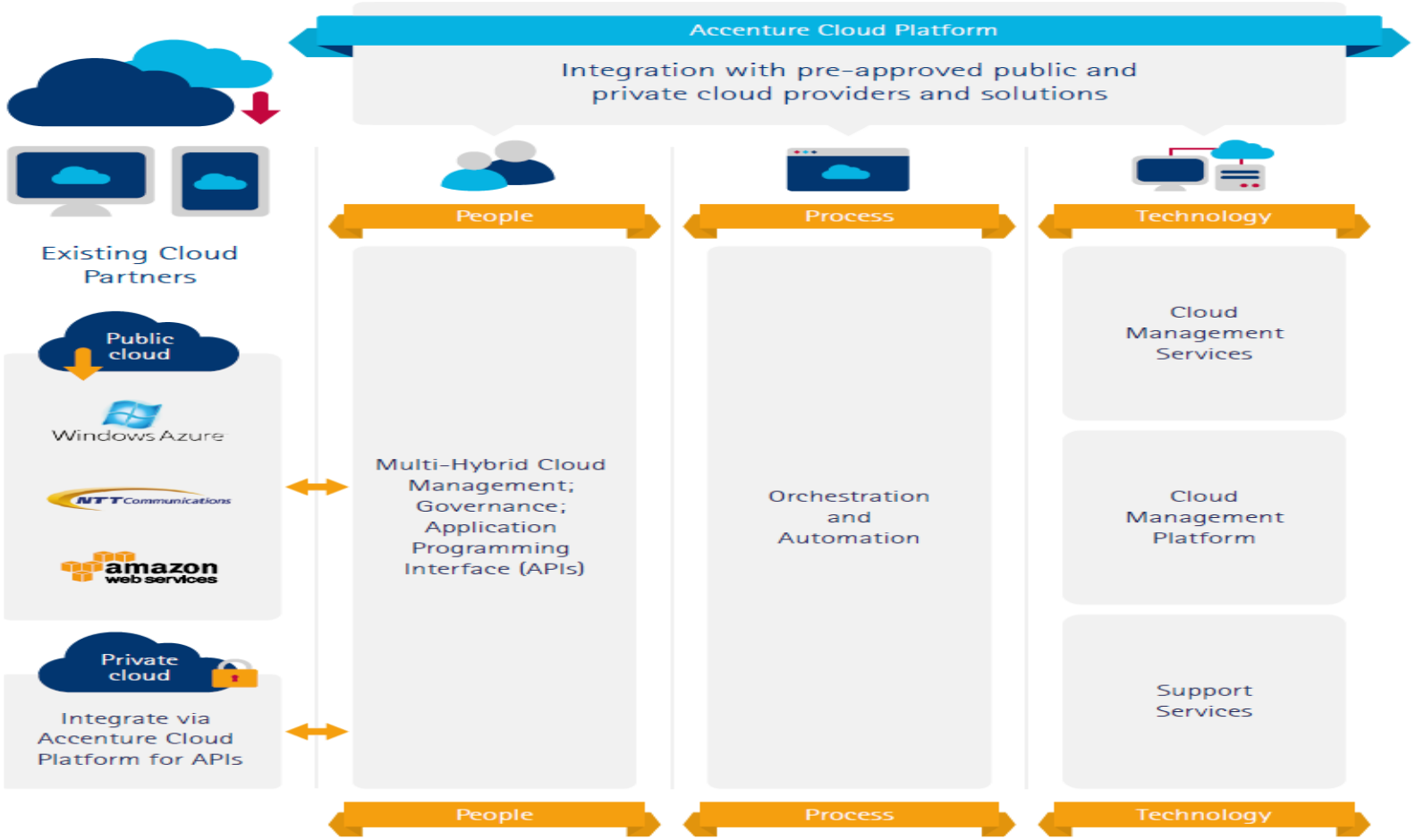
- Accenture's Cloud Application Factory, offers "rules, tools, and schools" to accelerate a company's adoption of cloud computing. Everything from delivery toolkits to integration frameworks reduces risks and ensures the success of highly complex, global deployments.
  - For example, some companies have 10,000 applications that could conceivably run in the cloud. An automated "sustainability assessment" helps determine the business case for cloud computing on an application-by-application basis.
- The Force.com Factory can generate work plans and estimate timelines for rebuilding applications on salesforce.com's cloud-based multitenant architecture.
  - "Our competitive advantage is that we created an industrialized approach to solution design and development using proven assets specifically for salesforce.com that make it faster to deliver salesforce.com solutions," said David Jones, business development director at Accenture.
  - In Japan, a project to rebuild 400 Lotus Notes applications for Lawson, Inc. would have taken 1 year to achieve with on-premises software. Accenture and salesforce.com completed the project in only 2 months and at ⅕ the cost of traditional development.





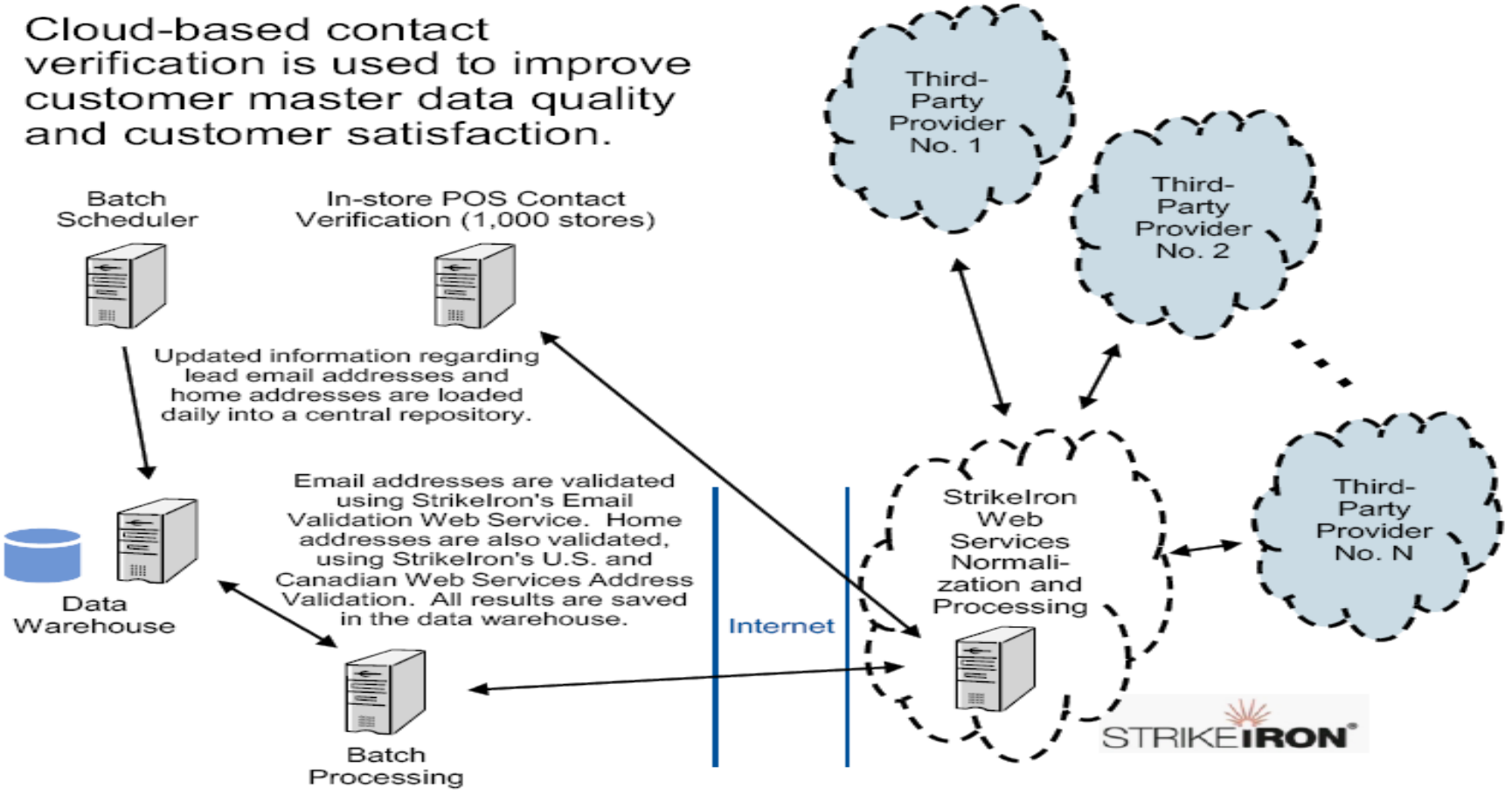
CLOUD SERVICE BROKERAGE – PROFESSIONAL SERVICE

Accenture



CSB PLATFORM – PROFESSIONAL SERVICE

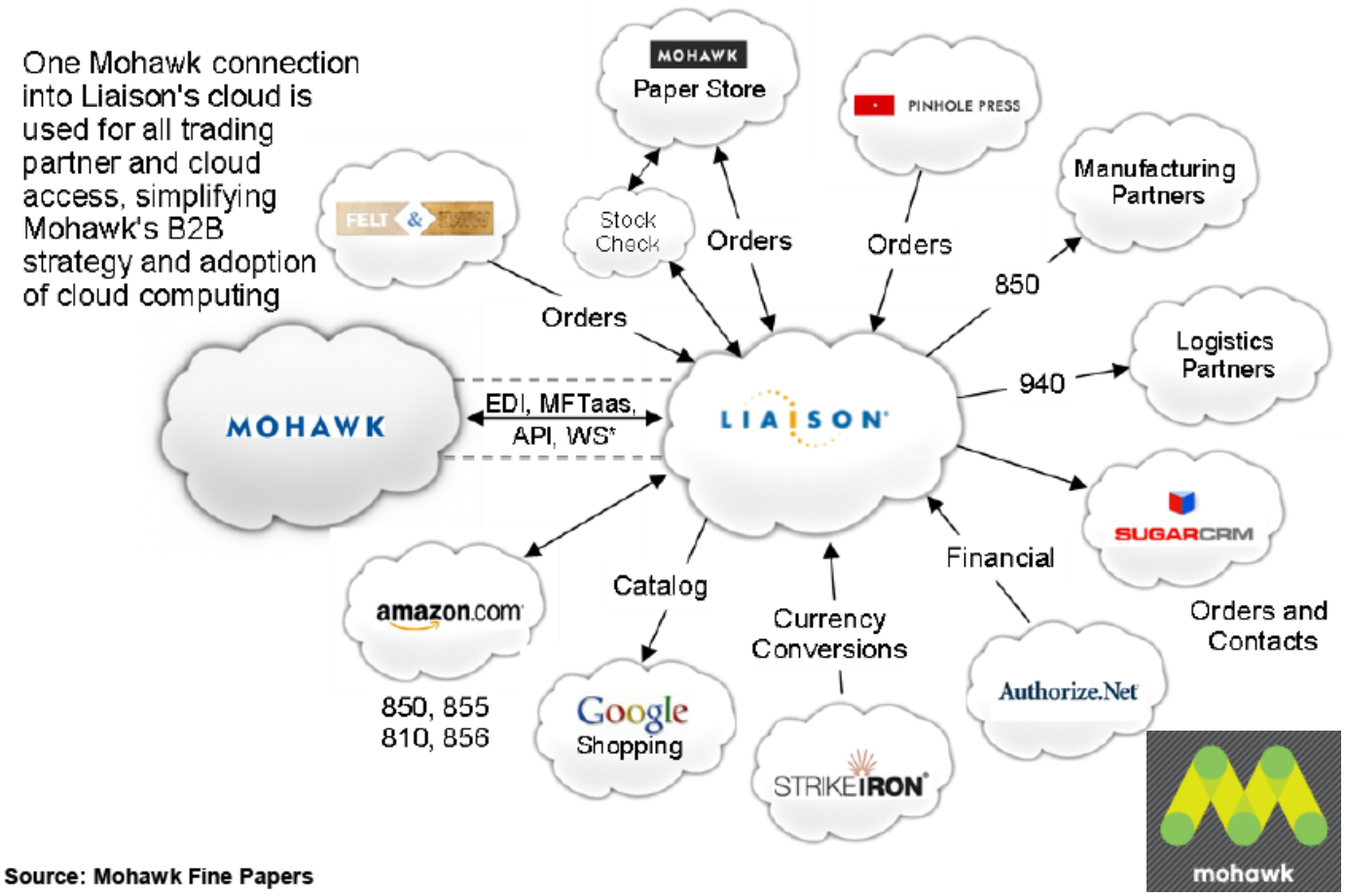
Accenture



CLOUD SERVICE BROKERAGE – DIGITAL SERVICE

StrikeIron

- Mohawk Fine Papers is the largest premium paper manufacturer in North America.
- It needed integration of its traditional B2B e-commerce partners including 300 customers, 100 suppliers and business partners (banks, third-party logistics, etc.) and 12 cloud service providers such as Amazon.com, Authorize.net, Google Shopping and SugarCRM.
- It outsourced all its integration work to an integration brokerage provider, Liaison.
- Liaison offers Mohawk only one set of technical and commercial interfaces (e.g., one API and one bill) for its entire external business partner ecosystem.



Source: Mohawk Fine Papers

CLOUD SERVICE BROKERAGE – DIGITAL SERVICE

Liaison