



Capgemini's AI Engineering and Cloud Data Platform Practice

in association with



Capgemini's AWS Data Analytics Practice

Capgemini's synergy with growth Cloud Services Market

Data Analytics including AI ML and AI Engineering on Cloud platforms are seeing massive growth in the industry. As per Gartner, the cloud services market is projected to grow 17.5 percent in 2019 to total of \$214.3 billion, up from \$182.4 billion in 2018.

Capgemini is targeting to grow over 40% in revenue and head count in 2019 its Data Analytics and Cloud services. The portfolio shift and capability building had started some years back with heavy investments in learning, development and innovation in the THE NEW technology offerings. With strong growth strategies around adoption of Cloud, it bolsters Capgemini's capabilities in Artificial Intelligence, Machine Learning, and Big Data Engineering.

Table 1: Worldwide Public Cloud Service Revenue Forecast (Billions of U.S. Dollars)

	2018	2018	2018	2018	2018
Cloud Business Process Services (BPaaS)	45.8	49.3	53.1	57.0	61.1
Cloud Application Infrastructure Services (PaaS)	15.6	19.0	23.0	27.5	31.8
Cloud Application Services (SaaS)	80.0	94.8	110.5	126.7	143.7
Cloud Management and Security Services	10.5	12.2	14.1	16.0	17.9
Cloud System Infrastructure Services (IaaS)	30.5	38.9	49.1	61.9	76.6
Total Market	182.4	214.3	249.8	289.1	331.2

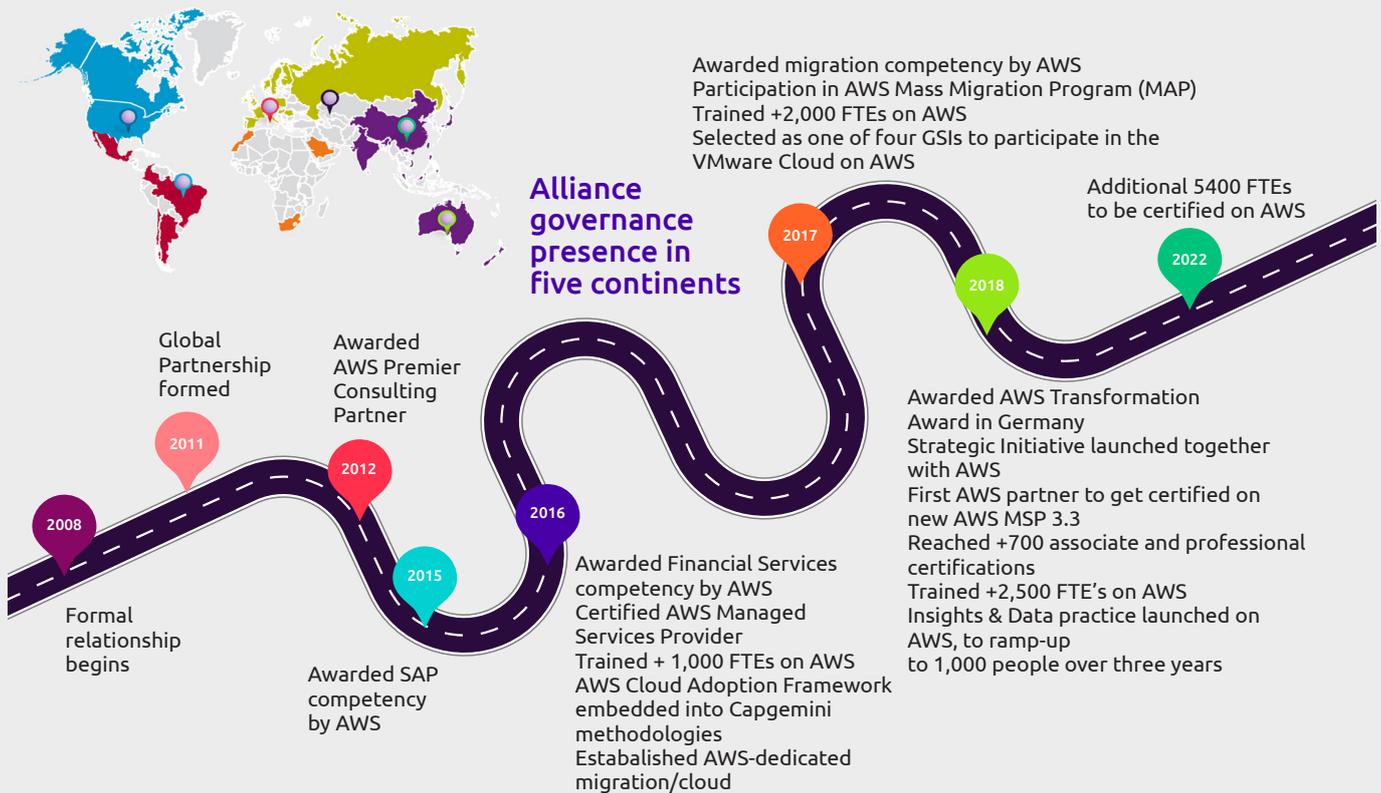
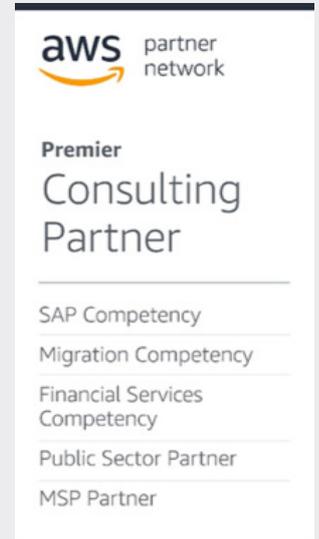
BPaaS = business process as a service;
IaaS = infrastructure as a service;
PaaS = platform as a service;
SaaS = software as a service

Note: Totals may not add up due to rounding.

Source: Gartner (April 2019)

Alliance and Partnership

Capgemini's journey with AWS Data Analytics started more than a decade back. In 2008, Capgemini started formal partner relationship with AWS and since then the partnership journey grew stronger with AWS Premier Partnership Consulting partner award, SAP Competency Award, Financial Services competency Award, AWS Managed Service Provider Certification, Data Migration Competency Award.



CAPGEMINI AI ACADEMY

Learning Options:

- Artificial Intelligence
- Statistical Programming Languages
- Math for data science
- Data Science
- Machine learning
- Cloud Technologies
- AI delivery methodologies
- AI solution and sales

Certification Levels:

- AI Cadet – Level 0 (Foundation) for aspiring AI domain learners
- AI Genie - Level 1 (For Developer Community) for Software developers on AI projects. Focus on Machine & Deep learning
- AI Guru - Level 2 (AI on platforms and for leads) - For proficient AI Developers, Delivery Leads for AI projects
- AI Captain - Level 3 (Growth) - For experienced AI professionals contributing in Sales & Solutioning efforts

Who attends this academy?

- Employees who want to develop themselves in AI domain
- Academy caters to skill needed for roles like data scientists, AI engineering, deep learning solution experts and AI architects
- Perform AI is Capgemini's holistic offering in the market
- Caters to host of business situations to enable clients to differentiate in market

Talent Fostering

Capgemini has more than 16,000 engineers who specializes in Data and Analytics. There are 12,000 cloud specialists in AWS, Azure, Google, Alibaba Cloud Platforms. Capgemini is first AWS Premium Consulting Partner jointly certified for delivering ERP application on AWS. Capgemini differentiates from competitors by building industry specific solutions such as Guidewire on AWS. Capgemini is certifying additional 6000 people, and currently has 1,000 + AWS certified people, with 100+ engineers certified in AWS Professional and Specialty level certification.

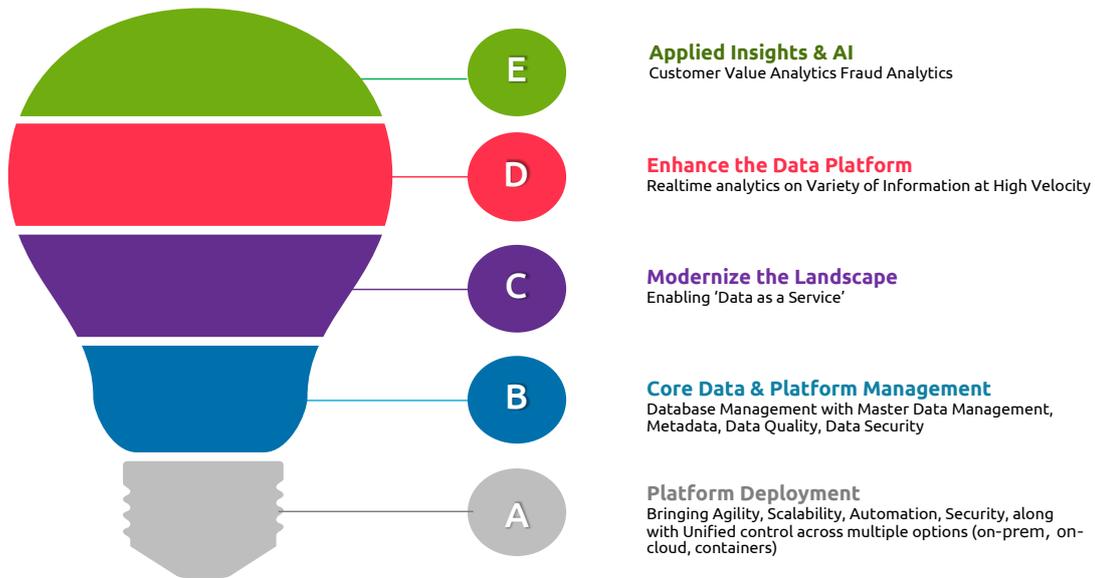
To enable massive people transformation, Capgemini has launched AI Academy. AI Academy is with target to educate 1,000 employees in Data Analytics, Cloud, AI Engineering and ML in 2019. Apart from AI Academy various other learning and development programs such as AWS Well Architected Review Training, AWS Data Labs, AWS Innovation drives, Capgemini is targeting to transform additional 6,000 employees. AWS Certification is now a mandatory requirement among AWS engineers, and Capgemini support certification preparation investing 600 to 1000 USD per person for preparation and examination. Investments on learning and development are driven on bold people agenda – to attract, grow, transform and retain best talent.

Offerings

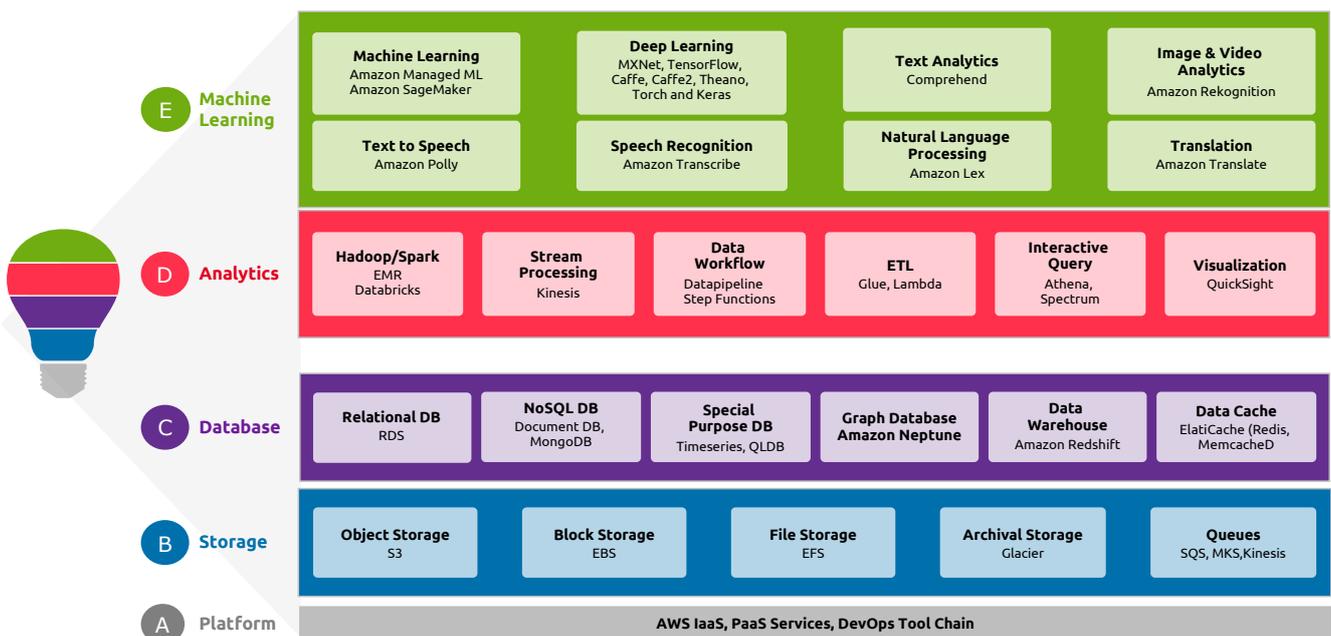
Capgemini's has invested in multiple departments for AWS Cloud competency building. Insights & Data – Cloud Data Platform and AI Engineering, Cloud Foundation Services, Cloud Infra Structure Services are some examples. The offerings include –

- Inspection, Consulting, Advisory, Architecture Design, Solution Prototype building
- Cloud Application, Data and Analytics Delivery and Maintenance
- Hybrid and Multi Cloud Design to Deployments and Maintenance
- Design, Development and Maintenance of Unified Data Lake
- Data Estate Modernization
- Data Science, Artificial Intelligence & Machine Learning Solutions with support from Capgemini's AI ML Research Lab, Accelerators and Assets/IPs
- Cloud Reference Architecture and Migration frameworks, Methodologies and Accelerators curated for various industries and business sectors.

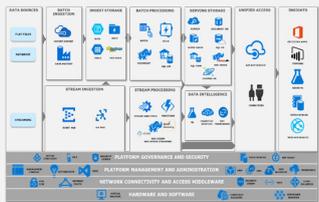
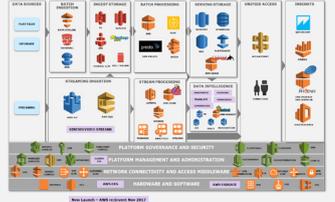
Key Components of the Next Generation Enterprise Data Platform



Capgemini's Technology Capabilities on AWS Cloud Services



Capgemini also has strategic alliance with selected vendors on cloud platform. Informatica, Databricks, Snowflake, Talend, SAS, and many more.

<p>Reference Architecture</p> 	<p>Solution Offerings</p> <ul style="list-style-type: none"> Advisory Data Estate Modernization (including Migration factory) Unified Data Layer for Hybrid Multi-Cloud Context Migration to SharePoint Online GDPR and Data Privacy Smart Analytics on Azure AI Solution Labs 	<p>Reference Architecture</p> 
<p>Key Enablers</p> <ul style="list-style-type: none"> Talent Transformation Dedicated Azure and AWS labs Partners & Alliances Global team including CTO for each partner 	<p>Assets & Accelerators</p> <ul style="list-style-type: none"> REAP (Replatforming Analytics Engine on Azure) Great BI (Estimation) GDPR Framework Smart Procurement Analytics Management Smart Asset Management <p>Enabling savings through assets & accelerators</p>	<p>Center of Excellence</p> <ul style="list-style-type: none"> 1800+ Microsoft, AWS and GCP Practitioners, 200+ clients Strategic Alliances With Selected Vendors on Cloud Platforms (Informatica, SAS, Databricks, Snowflake) Proven delivery methodologies, accelerators; 300+ projects in 2018
<p>Strategic Alliances & Partners</p> 		

Data Analytics Accelerators, Assets and IPs

Capgemini’s assets on cloud solutions includes REAP, mRapid Accelerated Data Estate Modernization Offerings such as LEGACY TO NEW AGE DATA FOUNDATION (LEAP), Intelligence Integration Services (IIS), Data As A Service

frameworks, BI Innovation (REAP), ETL to Spark migration (JumpSpark), TeraData to Spark (TeraSpark), Schema & Script Migration (Papillon) Testing Framework (Virtu), Migration Data Reconciliation, Meta Data Driven ETL Accelerator (MELT)

RDBMS to Cloud DBMS	Jumpspark	Virtu	Papillon	Azure Fast-Track	Validation	Polybase Dynamic Load
 Migrate to a new age Cloud DBMS (e.g. Snowflake)	 ETL to Spark Migration	 E2E testing Framework	 Schema & Script Migration	 Azure Fast Track load using ADF	 Reconciliation of Target data	 Meta-data driven Dynamic Load
<p>Services for:</p> <ul style="list-style-type: none"> Semi-automated conversion of SQL-Based Source (e.g. Teradata, Oracle) to Cloud DBMS Components - namely Python based transformation, Snowflake SQL and Objects 	<p>Kickstart Migration of ETLs to Spark:</p> <ul style="list-style-type: none"> Semi-Automated conversion of source - target mapping to spark code. High degree of reusability and efficiency while significantly reducing effort Templatized Spark transforms 	<p>End-to-end automated testing framework that manages:</p> <ul style="list-style-type: none"> Automated Testing - Objects, Scripts and data Data Reconciliation Data quality elements 	<p>Database specific components to:</p> <ul style="list-style-type: none"> Covert Teradata BTEQ to SQL Convert TD table to Azure SQL Automate the translation of SQL statements from RDBMS (e.g. Oracle) to ANSI tool 	<p>Data Replications to Azure using ADF</p> <ul style="list-style-type: none"> Migration or Replication of data from On-prem to Azure DB/DW/Lake Auto creation of Azure Data Factory Pipelines Flexible, extensible & reusable hybrid architecture 	<p>Dynamic scripts for validation of data</p> <ul style="list-style-type: none"> Automated Operational reconciliation of migrated/ replicated data 	<p>Data Load to Azure SQL DW</p> <ul style="list-style-type: none"> Meta-data driven load of data from Azure data lake to tables created in Azure SQL Datawarehouse <p>Refer Appendix 1.1 for detailed approach</p>

Thought Leadership

Capgemini constantly contributes to Data Analytics Cloud community by presenting architecture patterns, best practices and design methodologies, field experiences about design and implementation, customer success stories, in conferences such as AWS-Reinvent, AWS Summits, Gartner Customer Experience and Technology Summit, Nasscom Annual Technology Conferences, Forrester Data Strategy & Insights Conference, Microsoft Ignite, Google Cloud Next, Informatica World, and many more.

There several white papers publications by Capgemini AI Research published.

Capgemini Research Institute – AI research

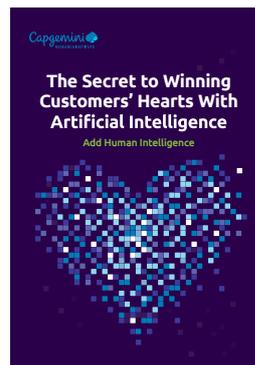
Impact on the workforce/upskilling



Intelligent automation



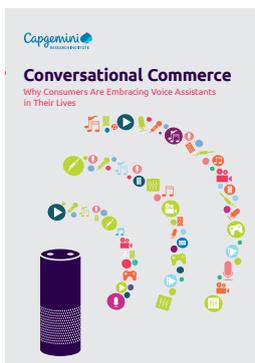
AI in cx



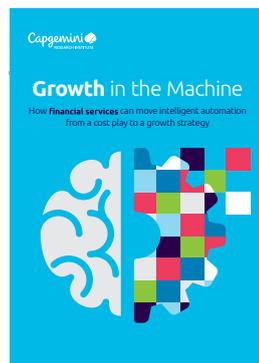
AI leaders



Voice assistants



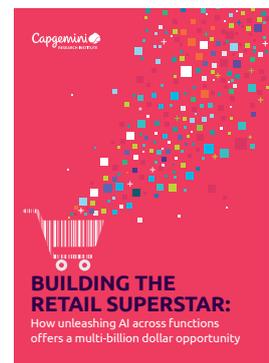
Intelligent automation in FS



AI use cases



AI in retail



Capgemini enterprise architects and engineers has deep level insights about technology fitments curated for individual customers use cases, best practices of design and implementation, accelerators to catalyze and simplify customer cloud adaption journeys.

For more details, please check <https://www.capgemini.com/research/>



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About Capgemini

A global leader in consulting, technology services and digital transformation, Capgemini is at the forefront of innovation to address the entire breadth of clients' opportunities in the evolving world of cloud, digital and platforms. Building on its strong 50-year heritage and deep industry-specific expertise, Capgemini enables organizations to realize their business ambitions through an array of services from strategy to operations. Capgemini is driven by the conviction that the business value of technology comes from and through people. It is a multicultural company of over 200,000 team members in more than 40 countries. The Group reported 2018 global revenues of EUR 13.2 billion.

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