Oracle Storage Cloud Service: Benefits of Integrated Stack Begin to Pay Off

Head to Head with Amazon, Oracle Shows Its Intent to Compete on All Fronts, Including Pricing

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October 21, 2015

Produced exclusively for Constellation Research clients
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Executive Summary

With almost four decades of serving enterprises with software and hardware offerings, Oracle plays a significant role in helping organizations with solutions ranging from on-premises to cloud-based. Unlike its competitors, Oracle’s unique strategy always provides customers with a choice of having one integrated stack, from the silicon of hardware to the clicks in enterprise software and the option to select Oracle as a best-of-breed component. Oracle believes that an integrated stack from the bottom up delivers unique value to customers by reducing the cost of integration between different layers of the technologies that are required to operate an enterprise. Moreover, Oracle sees benefits on the scaling side of the offering. When all is engineered to work together, enterprises will see better performance for every dollar spent on Oracle software compared to its key competitors.

Traditionally, Oracle has been a quiet participant in the storage market, owning assets from the Sun Microsystems acquisition such as tape storage. As Oracle has invested in Software-as-a-Service (SaaS) software and its customers have asked Oracle to operate this SaaS software for them (in the Oracle Cloud), Oracle has gone back to the drawing board and introduced a brand new cloud-based storage offering for customers and for itself. Remarkably, the overall offering is priced competitively with market leaders in the space, with Oracle Storage Archive Cloud Service leading the way, undercutting costs of the market leaders by one or close to one order of magnitude.

This report focuses on Oracle Storage Cloud Service, a key area in Infrastructure-as-a-Service (IaaS). The coverage of storage technology is part of two of Constellation’s business research themes, Data-to-Decisions and Technology Optimization and Innovation.

Key Differentiators

Oracle Storage Cloud Service has several qualities that distinguish it from other vendors in the storage market and deliver a unique market value proposition. For example, when compared to:

- **Storage Vendors** – For a long time, established storage vendors have captured a substantial part of the enterprise IT spend. With the advent of the cloud, though,
these vendors are facing headwinds as capital spending shifts from enterprises to vendors and providers. Oracle needs the move to cloud not only as a stated company direction, but as a requirement not for just the storage aspect of its business, but for all other products it offers (e.g. PaaS, SaaS). Oracle can leverage substantial synergies from the shift to the cloud. For existing and prospective customers, this means that they can benefit from synergies and economies of scale as Oracle moves to the cloud; moving more than the storage category to the cloud creates volume opportunities for customers.

- **Converged System Vendors** – Vendors selling converged systems have shown that collapsing the tech stack can create an attractive value proposition to enterprises. Oracle differentiates itself from the traditional converged system vendors by combining more layers of the technology stack that powers enterprises - for example, IaaS and SaaS are incorporated into the overall Oracle technology offering. At the same time, Oracle operates a worldwide network of data centers that allows for global deployment of storage cloud solutions. Prospects and customers benefit from the worldwide network, both from compliance and performance perspectives.

- **Cloud-Based Storage Vendors** – As with all offerings of Oracle, customers can decide how they want to deploy software, on-premises or in the Oracle cloud. Vendors who only focus on cloud-based storage cannot offer the same choice, which ultimately matters to customers that have on-premises hardware resources. Moreover, data locality has a strong influence on both data sovereignty and performance. This differentiator matters for prospects and customers as it provides the flexibility to deploy storage resources across cloud and on-premises and to leverage the existing (and potentially not written off) on-premises IT resources.

**Organizational Overview**

**Management Team**

Recently, Oracle founder Larry Ellison stepped down as CEO and became Oracle’s CTO while also holding the position of Executive Chairman of the Board. The new CEO leadership now comes from Safra Catz and Mark Hurd. The direct product responsibility for Oracle Storage Cloud Service lies with President of Product Development Thomas Kurian, who has spent almost 20 years with Oracle. Kurian oversees not only the storage cloud services, but all of software development at Oracle, where he leads the transition of that portfolio to the Oracle cloud. Being in charge of the complete software side of the Oracle technology stack allows Kurian to exploit synergies up and down the stack and enable efficiencies that cannot be tapped into by other vendors who do not have the same/similar technology stack or organizational setup.

**Constellation’s Analysis:** Oracle has an experienced engineering-led management team and will likely achieve a turnover of at least $40 billion this financial year from over 400,000

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customers. Thomas Kurian, who runs the day to day operations in software development, brings abundant experience at building layered software technology stacks. Constellation regards this experience – coupled with the rest of the Oracle offering – as key to delivering substantial differentiation in the marketplace and benefits to Oracle customers.

**Partnerships and Alliances**

- **Key Oracle Storage Partners** - Mythics, Forsythe, Red Stack Tech, Arrow, Centroid, ONX Enterprise Solutions, Groupware, Cintra, CTERA, CloudBerry and Symantec.

- **Systems Integrators** – Accenture, Deloitte, Eclipsys, Scalar Decisions, Computacenter, Inforsacom (Germany), SCC (France), Ericsson (Nordics), Wipro (APAC), and ECS (APAC)

**Constellation’s Analysis:** Oracle is in the midst of certifying existing Oracle Partner Network members for Oracle Storage Cloud Service. Despite the early days, there is already a sizeable partner ecosystem forming. Constellation expects a growing list of partnerships and alliances over the next 12 months.

**Competitive Positioning**

Since 2012, Oracle has progressively unveiled its cloud offerings, leading to an end-to-end cloud strategy and product delivery. This year, Oracle’s cloud offerings came together in one integrated stack. The integrated stack – from “chip to click” (from the silicon chip that processes software to the click of a user being registered in SaaS software) is Oracle’s vision of what to execute to. While the hardware offerings have been proven for quite some time with the Exa-Machine series, the software side has been less developed, mainly on the Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS) sides. Both IaaS and PaaS are being addressed in the course of 2015 through events such as Oracle’s yearly user conference, Oracle OpenWorld.

**Constellation’s Analysis:** Oracle pursues a unique strategy to deliver an integrated technology stack. No other vendor has the same depth of offering. Oracle showed the power of this single integrated stack when it announced plans for a two-socket server in February 2015.\(^2\) When a platform allows a vendor and its customers to create offerings that are outside of the original scope, use case and design of that platform, technology vendors have created something very powerful. In this case, Oracle has been pursuing a high-end server strategy since the acquisition of Sun. But a two-socket server is quite the opposite, so whatever sparked Oracle’s interest getting into the two-socket server market proved to be a validation of the integrated stack strategy. Why? Oracle never planned to provide low-cost servers, but could still deliver them at a lower total cost of ownership than the rest of the industry. Now we see a second validation point of the strategy, with Oracle entering cloud storage services, another use case that Oracle did not pursue originally. Again, the

integrated technology strategy paid off. In fact, the total cost of ownership of Oracle Storage Cloud Service is substantially lower than for other storage competitors. Owning the whole stack allows Oracle to run its Storage Cloud Service at a cost that is often an order of magnitude lower than alternative offerings in the market.

Market Positioning

Oracle targets enterprises of all sizes. A byte is a byte, no matter from what size of enterprise or geography it comes from. Oracle is keen to prove that the data is better and more cheaply stored in Oracle Storage Cloud Service than anywhere else. At the same time, potential customers must be open and ready to put data into the Oracle Cloud, which the vendor sees less and less as a concern.

Constellation’s Analysis: It makes sense for Oracle to offer its storage product aggressively across vertical industries and horizontal use cases. Oracle needs to quickly find large workloads to achieve the vital economies of scale that lower the total cost of ownership for all cloud-based offerings. At the same time, Oracle sees significant growth for Oracle Storage Cloud from internally-generated demand. Enterprises creating next-generation applications on the Oracle PaaS offering will need cloud-based storage for their solutions. Likewise, a user of the many Oracle SaaS applications will use the Oracle Storage Cloud – usually without even knowing that data is stored in Oracle Storage Cloud.

Key Offerings

The Oracle Storage Cloud offering includes Storage, Backup and Archive Services. Oracle’s hardware platforms are used in the Oracle Public Cloud, providing customers with a common environment in the cloud and on premise. This commonality is what’s unique to Oracle, with common management, common security, common architectures and end-to-end visibility. Oracle can provide customers with diagnostics for on-premise databases and applications, the infrastructure platforms they run on, and all the way up to its public cloud. In this way, Oracle can identify any issues with data latency, data corruption, or even worse, data loss, as it has insight into both customer data centers and its public cloud (see Figure 1).

Constellation’s Analysis - Not only does Oracle have an integrated offering from archival to operating system software and virtual machine, but it also operates a single technology stack with identical architecture, adhering to the same standards on both the private and public Oracle Cloud. Oracle keeps the product identical for both deployment options, which not only allows for data and process compatibility, but also for skills synergies between managing an on-premises and a cloud-based operation. Moreover, by owning the complete stack, Oracle is the single point of accountability for the solution to work – compared to a heterogeneous offering that cannot offer end-to-end visibility due to the number of vendors involved. This benefit cannot be underestimated as enterprises are in search of simplicity. Owning end-to-end accountability of the solution from SLAs to support, management, billing and security is a key value proposition unique to Oracle.
Application Use Cases

Here is the detailed analysis on seven common use cases:

1. **Global Data Centers across Locations**: Oracle operates a global data center infrastructure for its various product offerings. Oracle Storage Cloud services have been rolled out to these data centers, enabling customers to have a global storage cloud with local end points and storage offerings.

   **Constellation’s Analysis**: Despite recent progress made in worldwide data connection speeds, location still matters for cloud-based deployments for two key reasons. The first reason is access speed. When users operate continents apart from the data center, they need to access it quickly for critical services. Remarkably, the speed of light can appear slow, especially when it comes to large data volumes within a storage solution. Performance access matters to customers. The second reason relates to compliance with local data sovereignty legislation. More and more, countries mandate that their citizens’ data remain in local storage. Hence, the more locations a cloud provider can offer, the more likely enterprises can remain compliant and serve a specific geographical market.

2. **Global Namespaces**: Oracle offers a global namespace service, allowing access and use of storage objects across data center deployments.
**Constellation’s Analysis:** Making it easier for enterprises to operate large, multi-data center spanning storage solutions is a good approach. Often, enterprises operate these infrastructures as they have grown over the years across many providers. Over time, enterprises incur technical debt operating these infrastructures, with problems painfully emerging when key personnel are no longer available. Oracle offers key simplification in this area by making namespaces consistent across data centers and regions.

3. **Policy-Based Replication:** Oracle allows enterprises to manage content across multiple locations with replication services, which are not only programmable, but can also be policy-based. For example, certain storage object types required for manufacturing need to be replicated to data center locations where a manufacturing operation needs them. This capability also allows fine-grained data distribution as required by regulatory demands, a key capability in recent years, given the increase in regulatory complexity that enterprises are facing.

**Constellation’s Analysis:** Being able to replicate storage objects is a key capability of a multi-location storage solution. Oracle has done the right thing by making these replication services policy-based. This approach enables scale for enterprises. Enterprises expect to define which content needs to be stored where.

**Figure 2. Oracle’s Policy-Based Replication**

![Oracle’s Policy-Based Replication](source)

**Source:** Oracle

4. **Cloud Tiering:** As enterprises run into limitations with on-premises storage resources, they need to explore cloud-based options to offload storage needs. Oracle Cloud Tiering (via HSM software) enables enterprises to burst to the cloud as needed during peak hours/seasons. Through policy-based replication services, Cloud Tiering can easily be set up. Users can tier data to the cloud, based on type of data, size and usage patterns. Moreover, enterprises have discovered cloud-based storage solutions for disaster recovery needs, which Oracle Cloud Tiering supports. Furthermore, the
Cloud Tiering capability gives enterprises freedom to decide where and when to create the capacity needed for storage – on premises or in the cloud.

**Constellation’s Analysis:** Enterprises expect flexibility in procuring their IT capabilities. The need for next-generation applications creates an inherent uncertainty about which IT resources enterprises need to operate. During this uncertainty, cloud-based offerings can enable the creation, testing and support of these applications. Constellation is pleased to see that Oracle offers Cloud Tiering as a capability for enterprises to achieve flexibility.

5. **Database Backup Services:** Going back to the roots of the vendor’s software products, Oracle offers a backup service for its database. With millions of Oracle databases running on-premises and keeping vital enterprise information, backup is vital. Moving these backup needs from on-premises tools and processes to the cloud is an obvious solution for Oracle database customers.

**Constellation’s Analysis:** From all the use cases supported by Oracle storage services, this use case is closest to home. There are key advantages to moving backup services from on-premises to the cloud, starting with greater cost efficiencies to more reliable disaster recovery when using physically distant enough locations.

6. **Disaster Recovery across Locations:** With rules-based replication and consistent propagation of products across a global data center infrastructure, Oracle offers disaster recovery services across different geographical locations of its network of data centers via geo-replication. As enterprises become more and more reliant on mission-critical software, disaster preparedness and recovery feature more prominently.

**Constellation’s Analysis:** Oracle is doing a good job leveraging assets built for the earlier use cases and combining them for a disaster recovery solution that is enabled by geo-replication across multiple geographies. For example, once an enterprise chooses the Oracle Database Backup Service, a logical next step would be to provide disaster recovery for the same database.

7. **Hybrid Database-as-a-Service:** Oracle offers the capability to create separate database copies for development and test purposes in the cloud. As enterprises often don’t have the on-premises capacity to provide the development and test environment they need to build next-generation applications, being able to offload these functions efficiently to a cloud infrastructure is a key capability.

**Constellation’s Analysis:** Anyone involved in a database-centered development project knows about the challenges of provisioning sufficient development and test environments to developers and business users. Since development is often project-based and not continuous, enterprises usually don’t have the necessary server capacity to accommodate these environments. The cloud-based provisioning of these instances is not only an elegant way out, but it often turns out to be more cost efficient than on-premises server deployments due to the “pay as you use” monetization of the cloud.
Customer References

Oracle has no shortage of reference customers, despite the early stage in the Storage Cloud Service’s product lifecycle. Already, a majority of Fortune 100 companies are using Oracle’s Storage. Here are some references:

- Nine of the Top Ten Global Telecommunication Companies
- Five of the Top Five Semiconductor Companies
- Seven of the Top Ten Banks
- Three of the Top Five Media & Entertainment Companies
- A $100 billion-a-year chip manufacturer chose Oracle Storage for its Tier 1 chip design systems, creating seven times better performance at one-third the cost of the existing solution. The company now has 80 Oracle Storage systems installed.
- A digital effects company selected Oracle Storage for four to five times better performance at half the price of its incumbent solution. Oracle Storage Cloud is supporting the company’s 6,000+ node rendering server farm.
- Oracle Storage beat the storage market leader at a $250 billion-a-year financial services company, delivering seven times faster backup/restore performance and 600 percent throughput improvement.
- A €4 billion-a-year European high voltage energy transmission operator consolidated Tier 1 applications with Oracle FS1, achieving four times better performance improvement and 2X cost reduction in a competitive bid.
- A $5 billion-a-year French transport group scales its IT infrastructure and doubles performance with Oracle FS1; beats market leader.

Constellation’s Analysis: Despite the relative newness of Oracle Storage Cloud Service, Oracle is gaining traction in the market. Most customers choose Oracle for a combination of better TCO and/or better performance, both providing proof that the Oracle integrated technology vision is delivering results and creating benefits for customers.

Pricing

Oracle provides detailed metered and non-metered pricing. Non-metered services are storage services. Metered services include per month pricing by storage capacity, archive storage capacity, archive data retrieval, archive early deletion, archive small reads and writes, data transfer, and requests (see Figures 3 and 4).
Figure 3. Oracle Provides Volume Discounts on Core Metered Services (as of October 2015)

<table>
<thead>
<tr>
<th>STORAGE CAPACITY</th>
<th>PRICE</th>
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<th>MINIMUM</th>
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<th>ARCHIVE STORAGE CAPACITY</th>
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<th>MINIMUM</th>
</tr>
</thead>
<tbody>
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<td>$0.001</td>
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<table>
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<th>MINIMUM</th>
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<th>DATA TRANSFERS</th>
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<th>MINIMUM</th>
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</thead>
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<tr>
<td>First GB/month</td>
<td>FREE</td>
<td>GB/Month</td>
<td>None</td>
</tr>
</tbody>
</table>
## Figure 4. Oracle Provides Competitive Pricing on Its Storage Service

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>PRICE</th>
<th>FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Cloud Service</td>
<td>$30 /TB/ Month</td>
<td>• Store an unlimited number of objects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Restrict read and write access to containers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Stored data is automatically replicated to separate machines for increased durability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Stored data does not leave targeted data region</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Store and access data through a simple REST API or an easy to use Java library</td>
</tr>
</tbody>
</table>

**Constellation’s Analysis:** Customers and prospects may find it highly surprising that Oracle’s published “list” pricing is 20 percent cheaper than Amazon S3 U.S. Standard pricing (as of October 2015). Oracle also matches Amazon on the pricing for requests and data transfers out. Oracle shows how the benefits of scale in an integrated stack can be passed on to customers as price savings.

**Recommended Short List Scenarios**

Constellation sees several scenarios where customers and prospects would turn to Oracle Storage Cloud Service. Key business objectives often include:

- **Hardening of infrastructure:** The flawless operation of enterprise systems in a 24x7 operating world is more critical than ever. Many enterprises have not had the
opportunity to create and operate multiple data center locations, creating business continuity risks on both the backup and disaster recovery side. When using Oracle products, a deeper consideration of Oracle Storage Cloud Service to achieve a more reliable infrastructure is something enterprises should look into.

- **Agility for next-generation application projects:** Constellation foresees a doubling of custom development projects being undertaken in enterprises in the next 10 years, compared to the last decade. In most cases, enterprises are not prepared to have the infrastructure available on premises to operate these projects. Using Oracle Storage Cloud Service to operate development and test environments is an attractive strategy, especially for Oracle database-centered projects.

- **Effortless storage services:** Customers already using Oracle database realize many of the above benefits through common RMAN backups. Hence, the synergies of this re-use help enterprises avoid re-learning new cloud provisioning skills, tools and processes. In fact, they only have to learn to administer policy-based replication rules to enable desired hybrid cloud operations.

- **Global compliance and operation:** Business is getting more global, and with that, enterprises need to be compliant with local data sovereignty and storage regulations. With Oracle’s numerous data center locations and the policy-based replication capabilities, enterprises have the opportunity to segment and replicate data to the locations desired and required by local authorities.

### ORACLE STORAGE CLOUD SERVICE’S TYPICAL CUSTOMER PROFILE

- **Revenue:** $100 million+ a year
- **Number of employees:** 500+
- **Geography:** Global
- **Industries:** Not specific focus
- **Roles:** Chief Information Officer, Chief Technology Officer

### Disclosures

Your trust is important to us, and as such, we believe in being open and transparent about our financial relationships. With our clients’ permission, we publish their names on our website.
Analyst Bio: Holger Mueller

Holger Mueller is a Vice President and Principal Analyst for the fundamental enablers of the cloud, IaaS, PaaS, with forays up the tech stack into Big Data and Analytics and sometimes SaaS. Mueller provides strategy and counsel to key Constellation Research Inc. clients, including Chief Information Officers, Chief Technology Officers, Chief Product Officers, investment analysts, venture capitalists, sell side firms and technology buyers.

Prior to joining Constellation Research, Mueller was VP of Products for NorthgateArinso, a KKR company. There, he led the transformation of products to the cloud and laid the foundation for new Business Process as a Service (BPaaS) capabilities. Previously, Mueller was Chief Application Architect with SAP, working on strategic projects and next-generation product capabilities. Mueller was also VP of Products for FICO, creating the foundation for the current Enterprise Decision Management Suite. Before that, he worked for Oracle in various management functions both on the application development (CRM, Fusion) and business development side. Previously he worked for SAP, starting the products suite that is currently SAP CRM and worked in the Office of the Chairman for Hasso Plattner. Mueller started his career with Kiefer & Veittinger, which he helped grow from a startup to Europe’s largest CRM vendor from 1995 onwards. There he helped spearhead offshore development in Bangalore, India, where the previous K&V Lab is now SAP Labs Bangalore. Mueller has presented at numerous trade shows and industry events and writes his blog on enterprise software at enswmu.blogspot.com.

Mueller has a Diplom Kaufmann from University of Mannheim, with a focus on Information Science, Marketing, International Management and Chemical Technology. As a native European, Mueller speaks six languages.

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Analyst Bio: R “Ray” Wang

Business Strategist and Disruptive Technologies Expert

R "Ray" Wang is Founder, Chairman, and Principal Analyst of Silicon Valley-based Constellation Research, Inc. and the author of the popular enterprise software blog, "A Software Insider’s Point of View." He previously was a founding partner and research analyst for enterprise strategy at Altimeter Group.

With viewership in the millions of page views a year, his blog provides insight into how disruptive technologies and new business models affect the enterprise. A background in emerging business and technology trends, enterprise apps strategy, technology selection, and contract negotiations enables Ray to provide clients and readers with the bridge between business leadership and technology adoption.


Expertise

Buyers seek Ray’s research in disruptive technologies and their impact on business processes, business models and organizational design. Business topics focus on harnessing innovation, creating next-generation business and IT leadership and applying the new rules of business. Technology topics include Social, Mobile, Cloud, Big Data, Next-Generation ERP and apps, business analytics, business process transformation, Project-Based Solutions, Order Management, Master Data Management and middleware technologies.

For technology sellers, Ray provides strategic guidance in go-to-market strategies, reviews and designs software licensing, pricing, support and maintenance policies, delivers competitive assessments, evaluates software partner ecosystems and researches business processes such as the perfect order and customer experience for the enterprise and SMB markets.

Media Influence

News organizations such as The Wall Street Journal, Bloomberg, Business Week, Fortune, The Associated Press, CIO Magazine, Information Week, ComputerWorld, Financial Times, eWeek, CRM Magazine, IDG News, ZDNet, TechTarget and Tech Crunch frequently seek his point of view. Ray is an energetic and passionate keynote speaker and has also been featured on major TV news outlets such as CNBC.

Industry Recognition

In 2008, 2009 and 2014, Ray was recognized by the prestigious Institute of Industry Analyst Relations (IIAR) as the Analyst of the Year, and in 2009, he was recognized as one of the most important analysts for Enterprise, SMB, and Software. In 2009, A Software Insider’s POV was listed in the top 20 of Jonny Bentwood’s Technobabble 2.0 Top Industry Analyst Blogs. In 2010, Ray was listed as one of the Top 5 Analyst Tweeters in Edelman’s TweetLevel.
Index, recorded as part of the ARInsights Power 100 List Of Industry Analysts, and named one of the top Influential Leaders in the CRM Magazine 2010 Market Awards.

Education

Ray graduated from the Johns Hopkins University with a B.A. in natural sciences and public health. His graduate training includes a master’s degree from the Johns Hopkins University in health policy and management, and health finance and management. He is also certified in SAP FI/CO modules, facilitation techniques and program management office.

Ray currently serves on the Board of Advisors for the University of Toronto’s Rotman School of Management’s Centre for CRM Excellence.

Ray can be reached at R@ConstellationR.com.
About Constellation Research

Constellation Research is an award-winning, Silicon Valley-based research and advisory firm that helps organizations navigate the challenges of digital disruption through business models transformation and the judicious application of disruptive technologies. This renowned group of experienced analysts, led by R “Ray” Wang, focuses on business-themed research, including Digital Marketing Transformation; Future of Work; Next-Generation Customer Experience; Data to Decisions; Matrix Commerce; Safety and Privacy; Technology Optimization and Innovation; and Consumerization of IT and the New C-Suite.

Unlike the legacy analyst firms, Constellation Research is disrupting how research is accessed, what topics are covered and how clients can partner with a research firm to achieve success. Over 350 clients have joined from an ecosystem of buyers, partners, solution providers, C-suite, boards of directors and vendor clients. Our mission is to identify, validate and share insights with our clients. Most of our clients share a common trait - the passion for learning, innovating and delivering impactful results.

Organizational Highlights

- Founded and headquartered in the San Francisco Bay Area in 2010.
- Serving over 350 buy-side and sell-side clients around the globe.
- Experienced research team with an average of 25 years of practitioner, management and industry experience.
- Creators of the Constellation Supernova Awards – the industry’s first and largest recognition of innovators, pioneers and teams who apply emerging and disruptive technology to drive business value.
- Organizers of the Constellation Connected Enterprise – an innovation summit and best practices knowledge-sharing retreat for business leaders.
- Founders of Constellation Executive Network, a membership organization for digital leaders seeking to learn from market leaders and fast followers.

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