*AWS Recognized as the*

# 2021

## Company of the Year

Global Cloud-based Data Solutions
for Financial Services Industry
*Excellence in Best Practices*

FROST & SULLIVAN

## Strategic Imperatives

Frost & Sullivan identifies three key strategic imperatives that impact the fintech industry: industry convergence, new business models, and disruptive technologies. Every company that is competing in the fintech space is obligated to address these imperatives proactively; failing to do so will almost certainly lead to stagnation or decline. Successful companies overcome the challenges posed by these imperatives and leverage them to drive innovation and growth. Frost & Sullivan's recognition of Amazon Web Services is a reflection of how well it is performing against the backdrop of these imperatives.
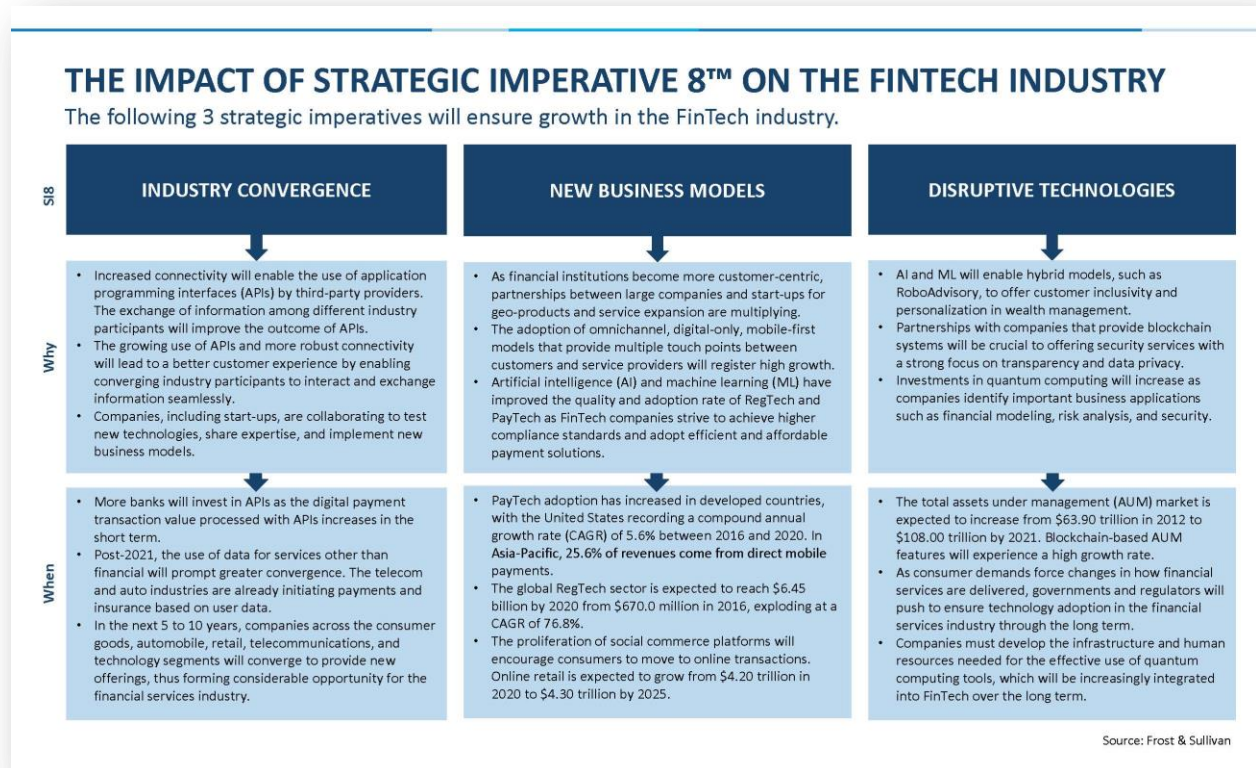


## Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. Amazon Web Services excels in many of the criteria in cloud-based data solutions for the financial services industry.

## AWARD CRITERIA

| Visionary Innovation & Performance | Customer Impact |
|---|---|
| Addressing Unmet Needs | Price/Performance Value |
| Visionary Scenarios Through Mega Trends | Customer Purchase Experience |
| Implementation of Best Practices | Customer Ownership Experience |
| Leadership Focus | Customer Service Experience |
| Financial Performance | Brand Equity |

### Company Background

Founded by Amazon.com Inc. (Amazon) in 2006, Amazon Web Services (AWS) is the world's most comprehensive and broadly adopted cloud provider. Offering more than 200 full-featured services to millions of global clients, the company addresses customers' unmet needs through various use case scenarios. In 2019, AWS launched AWS Data Exchange to simplify the underlying data distribution and procurement processes. Functioning as the middle infrastructure layer between data subscribers and providers, ADX offers numerous user-friendly features that allow both customer persona types (subscribers and providers) to engage and ultimately achieve their data goals more efficiently.

> *"ADX enables customers to achieve operational efficiency and realize savings through four key functions: storage, entitlement, billing, and delivery (distribution). Subscribers and providers have experienced complications and inefficiencies in each of these areas; AWS aims to remedy that problem with ADX."*
>
> *- Jeffrey Castilla, Research Team Lead Frost & Sullivan*

### Borne Out of Customer Needs

As a standalone service within AWS, ADX allows data providers and subscribers to locate, access, and manage third-party data in the cloud. AWS created the service in direct response to a critical industry challenge: Its customers were having trouble bringing third-party data into their ecosystems.

Across industries, businesses are basing more and more of their decisions on proprietary and third-party data. In the financial services realm, this data includes both traditional market data (e.g., economic data, stock prices, reference data, and earnings transcripts) and nontraditional "alternative" data (real estate, Internet of Things, news sentiment, and location data). The primary industry participants, sectioned into two personas, include subscribers (retail and investment banks, hedge funds, asset managers, custodians, capital markets, and insurers) and providers (e.g., market data aggregators, alternative

market data vendors, rating agencies, index managers, credit bureaus, and stock exchanges).

Each persona (subscribers and providers) has a unique and specific set of challenges, which AWS systematically addresses with ADX. On the subscriber side, businesses often lack the necessary data sets to make their decisions; they also run into barriers when locating, procuring, vetting, and analyzing the data. Conversely, providers have trouble distributing the data. They face challenges with managing the technology and infrastructure and scaling to reach new subscribers.

ADX's primary purpose is to provide undifferentiated infrastructure. It serves as a go-between for subscribers and providers, allowing them to exchange data without building the infrastructure. ADX enables customers to achieve operational efficiency and realize savings through four key functions: storage, entitlement, billing, and delivery (distribution). Subscribers and providers have experienced complications and inefficiencies in each of these areas; AWS aims to remedy that problem with ADX.

### *Addressing Security Issues through Functionality, Efficiency, and Visibility*

ADX's infrastructure is very secure. Fully integrated with AWS's Identity and Access Management service, its policy and permissioning layer allows subscribers to build permissions and providers to publish data, issue offers, and perform due diligence on potential customers. ADX is also General Data Protection Regulation and Health Insurance Portability and Accountability Act-compliant. It encrypts data at rest and in transit.

ADX is particularly useful from a compliance perspective. In the highly regulated financial services space, compliance officers and data procurers sometimes have issues with multiple "hops" through which data must traverse to reach their ecosystems. Each hop is a point of vulnerability for potential leakage. Since ADX hosts all of its data in one location, these customers can obtain the information they need through a single application programming interface (API) call. Rather than having multiple feeds, they have only one, which minimizes their risk exposure. The single API also makes it easy for financial services professionals to track the data as it moves through their ecosystems. To ensure their data is secure, these professionals need to understand how data enters their ecosystems, where it goes, and how it is used; ADX working in concert with the broader suite of AWS monitoring and governance services gives them visibility. As a result, they have a much better understanding of all their data coming in-house.

### *The Subscriber Journey*

Data subscribers face procurement, integration, and management challenges. The infrastructure necessary to perform these operations is incredibly complex, with numerous vendors in different geographies using different delivery mechanisms. These mechanisms can include anything from hard drives to Secure File Transfer Protocol (SFTP) sites. They are highly inefficient, often requiring multiple subscribers' actions such as permissioning, site monitoring, or coding. Data subscribers need write the code to connect to all of the APIs from these different vendors. ADX simplifies this process tremendously, providing the infrastructure component that allows subscribers to pull all of the data they need across vendors, infrastructures, and geographies through a single API in the cloud.

AWS built out these functions to respond directly to its customers' pain points, with features and functionality that substantially simplify their lives. Natively integrated with AWS, ADX is extremely easy

to use. Data subscribers and providers can analyze and catalog data and leverage AWS's tools for storage (Amazon Simple Storage Service, or S3, and Amazon DynamoDB), data warehousing (Amazon Redshift), event-driven coding (AWS Glue), queries (Amazon Athena), and machine learning (Amazon Sagemaker). Data subscribers can use ADX to discover, procure, and automate their data consumption. Through its comprehensive data catalog, they can find relevant data quickly. They can integrate that data into AWS services or third-party ISV solutions built on AWS with which AWS partners (e.g., Tableau Software, Domo, Inc., Databricks, etc.).

Another struggle that subscribers face relates to experimentation. Before subscribers purchase new data feeds, they need to experiment with the data to see if it suits their needs. In addition, they must go through the provider's licensing terms, pricing structure, and entire procurement workflow. If that data source does not work well for them, they have to try another feed. This process can be expensive, inefficient, and take several months to complete. ADX allows these customers to experiment with data in-house (e.g., through a temporary trial period), bringing the data closer to their data catalogs, data lakes, and analytics to decide if it meets their needs and whether they want to subscribe more quickly.

On the data management side, ADX increases visibility into licenses, which is especially helpful for procurement users or central business information technology (IT) departments that manage how data flows into and within their ecosystems. In the financial services industry, where data licensing has been around for a long time, many customers consume data multiple times in various regions on numerous contracts. ADX provides these customers the visibility to understand how much they spend on data, how much data they consume, and how it is federated. The COVID-19 pandemic, which has caused a massive surge in remote working, has increased the need for this type of visibility. Particularly, in the financial services space, companies are pressed to monitor their employees who work remotely. AWS simplifies the process because it allows data to stream to companies through a single API in the cloud.

### *Empowering Providers to Scale and Distribute Data Efficiently*

Similar to the subscriber side, which must manage multiple vendors, providers have to handle multiple subscribers. On their end, they must build all the technology and APIs to distribute data and maintain all the permissions, workflows, and fairness to send out the same information simultaneously. Also, their other major challenge is scalability. Beyond their already saturated customer bases, they need to reach a wider audience. They need exposure to grow and scale quickly.

Many of the financial services data providers have tried to set up the infrastructure to distribute their content. However, setting up the API service layers and building the infrastructure is complex. Data vendors' distribution systems are often inefficient and difficult to support, hindering scalability. They usually operate on a one-off basis, and it is difficult to maintain permissions and workflows for each customer. They also struggle with fairness issues, in that they must distribute the same data at precisely the same time to everyone who subscribes to it. As a result, many data providers find significant value in AWS's managed services building blocks, which allow them to distribute and maintain data worry-free.

Through ADX's infrastructure, providers can distribute data efficiently to their existing customers as well as potentially reach millions of AWS customers without building the infrastructure. Thus, they can focus on content and improve their data quality. Providers can publish any object on ADX in any Amazon S3-

compatible format (e.g., files, snippets of code, and data sets collections). They can also automate their publications to run more efficiently using AWS's API surface layer and decide whatever frequency makes the most sense for them. In addition to traditional standard licensing models, they can migrate existing subscriptions at no additional charge. Providers can either use standard licensing terms or customize terms per the subscriber.

All the data hosted on ADX is the providers' content. They create it, own it, manage it, and set the terms around its usage. AWS can automate data into its storage service, Amazon S3, through on-demand pre-signed Uniform Resource Locators. The providers can upload, curate, and package data sets from S3 directly. They can leverage Amazon's interactive query service, Athena, its data warehouse, Redshift, and AWS Glue, a tool that allows data engineers to extract, transform, and load the data. Moreover, the company does not require providers to use other AWS services. They can use data in the cloud and leverage ADX's tools (e.g., third-party analytics, warehousing). In sum, AWS's approach simplifies data wherever subscribers choose to use it.

To support compliance or regulatory requirements, providers have the option to enable Subscription Verification on their data products. When enabled, potential subscribers must complete a form about who they are and what they intend to do with the data before they can subscribe. The provider must review and approve each request from prospective subscribers.

### Broad Exposure through AWS Data Exchange and AWS Marketplace

ADX's sheer breadth of offerings is impressive. Its data catalog currently includes more than 3,400 public data products from more than 200 different vendors. These products cover industries ranging from traditional financial services and retail to manufacturing, location, and the life sciences, with financial services comprising over 1,000 of these data products. As an extension of AWS Marketplace, ADX has exposure to more than 300,000 monthly active customers in 1.5 million software subscriptions from 50 different categories. AWS Marketplace also has more than 8,000 listings from over 1,600 independent software vendors and is deployed in 24 regions.

> *"The sheer breadth of ADX's offering is impressive. ADX's data catalog includes more than 3,300 data products from over 200 different vendors."*
>
> *- Jeffrey Castilla, Research Team Leader Frost & Sullivan*

Users (subscribers) can search the data catalog by theme (e.g., Environmental, Social, and Corporate Governance), topic, or vendor. They can then search through these vendors' title cards (the product description page set up by vendors) to view where the data came from, its licensing terms, and its price; this transparency speeds-up time-to-value for vendors and subscribers. The data catalog in AWS Marketplace is publicly visible, meaning users do not have to log in; they can simply search for AWS Marketplace and view data products. They only need to have an AWS account if they wish to subscribe to the data products.

Subscribers can view all of their data subscriptions across vendors, geographies, and themes through ADX's Subscriptions tab. They can also automate where the data lands in their ecosystem, view their agreements, and the frequency at which their data updates (e.g., daily, weekly, and monthly). Whether

having one or thousands of feeds, automation works for subscribers. This feature is particularly beneficial in creating operational efficiency; the more subscribers use the automation, the more efficiency they gain.

## Conclusion

Amazon Web Services (AWS) continues to impress Frost & Sullivan with its versatility and commitment to solving its customer's problems. AWS Data Exchange (ADX) exemplifies these efforts, enabling data subscribers and providers to engage and run their businesses more efficiently than ever before. A single application programming interface provides the infrastructure that facilitates the subscriber's journey while allowing providers to scale and distribute data effectively. Both customer types benefit tremendously from ADX's ease-of-use, broad exposure, visibility, and unmatched security. In the financial services world, ADX's features and functionality allow data providers and subscribers to worry less about the process of exchanging data and focus on their core businesses.

For its strong overall performance, AWS earns Frost & Sullivan's 2021 Global Company of the Year Award in cloud-based data solutions for the financial services industry.

## What You Need to Know about the Company of the Year Recognition

Frost & Sullivan's Company of the Year Award is its top honor and recognizes the market participant that exemplifies visionary innovation, market-leading performance, and unmatched customer care.

### Best Practices Award Analysis

For the Company of the Year Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

### Visionary Innovation & Performance

**Addressing Unmet Needs**: Customers' unmet or under-served needs are unearthed and addressed by a robust solution development process

**Visionary Scenarios Through Mega Trends**: Long-range, macro-level scenarios are incorporated into the innovation strategy through the use of Mega Trends, thereby enabling first to market solutions and new growth opportunities

**Leadership Focus**: Company focuses on building a leadership position in core markets and on creating stiff barriers to entry for new competitors

**Best Practices Implementation**: Best-in-class implementation is characterized by processes, tools, or activities that generate a consistent and repeatable level of success

**Financial Performance**: Strong overall business performance is achieved in terms of revenue, revenue growth, operating margin, and other key financial metrics

### Customer Impact

**Price/Performance Value**: Products or services provide the best value for the price compared to similar market offerings

**Customer Purchase Experience**: Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

**Customer Ownership Experience**: Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

**Customer Service Experience**: Customer service is accessible, fast, stress-free, and high quality

**Brand Equity**: Customers perceive the brand positively and exhibit high brand loyalty

## About Frost & Sullivan

Frost & Sullivan is the Growth Pipeline Company™. We power our clients to a future shaped by growth. Our Growth Pipeline as a Service™ provides the CEO and the CEO's growth team with a continuous and rigorous platform of growth opportunities, ensuring long-term success. To achieve positive outcomes, our team leverages over 60 years of experience, coaching organizations of all types and sizes across 6 continents with our proven best practices. To power your Growth Pipeline future, visit Frost & Sullivan at http://www.frost.com.

### The Growth Pipeline Engine™

Frost & Sullivan's proprietary model to systematically create on-going growth opportunities and strategies for our clients is fuelled by the Innovation Generator™. Learn more.

#### *Key Impacts*:

- **Growth Pipeline:** *Continuous flow of Growth opportunities*
- **Growth Strategies:** *Proven Best Practices*
- **Innovation Culture:** *Optimized Customer Experience*
- **ROI & Margin:** *Implementation Excellence*
- **Transformational Growth:** *Industry Leadership*

### The Innovation Generator™

Our six analytical perspectives are crucial in capturing the broadest range of innovative growth opportunities, most of which occur at the points of these perspectives.

#### *Analytical Perspectives:*

- **Mega Trend (MT)**
- **Business Model (BM)**
- **Technology (TE)**
- **Industries (IN)**
- **Customer (CU)**
- **Geographies (GE)**