



EQUINIX

U.S. FEDERAL GOVERNMENT

AI DATA MARKETPLACE PLAYBOOK

Enabling trusted, effective data
sharing in a secure environment
to support AI innovation
and meet mission needs



ABOUT THIS PLAYBOOK

PURPOSE

The U.S. Federal Government AI Data Marketplace Playbook outlines how government agency leaders are solving mission challenges using artificial intelligence (AI). By following the playbook steps, data providers and data consumers within and outside of government agencies can utilize the AI Data Marketplace solution at Equinix to securely use and share datasets and algorithms to meet their missions and lay the foundation for the future.

CHALLENGE

Government agencies increasingly depend on data to support and automate decisions and actions. AI-based approaches are being leveraged to predict trends, optimize processes, speed decision-making, enhance accuracy, improve pattern recognition and more. The amount and diversity of data accessible to AI-based algorithms determine their functionality and accuracy. Although agencies want to use and share their data and algorithms effectively, they may be reluctant to do so because they fear losing control of it. However, if agencies are unable to address these data and algorithm sharing challenges, they face the danger of an AI winter—starving algorithms with too little data for accurate and meaningful results.

NEED








To accelerate innovation and meet mission needs in the 21st century, government agencies must tap into the power of AI. Data suppliers and algorithm developers need to be able to explore, select and agree to create, execute and complete data science transactions. Marketplaces allow agencies and their partners to buy, sell and share data and algorithms privately and securely using a neutral, programmable, community-owned infrastructure driven by a consortium established on the basis of a common benefit.

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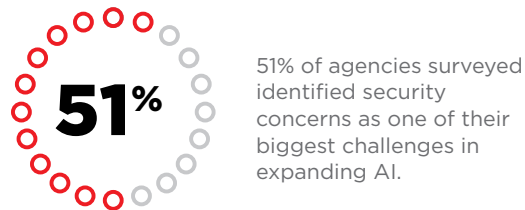
EXECUTIVE SUMMARY

Agencies must utilize neutral, secure data marketplaces to exchange the data and algorithms that make AI-driven innovation possible.

TRENDS AND INSIGHTS		CONSTRAINTS AND CAPABILITIES		PLAYBOOK		
TRENDS	INSIGHTS	CONSTRAINTS	CAPABILITIES	STRATEGY	ROADMAP	PLATFORM
						
AI has the potential to greatly improve agency effectiveness, with the largest impacts on national security, emergency response and urban planning.	The demand for data is increasing exponentially, but agencies remain reluctant to share data and algorithms due primarily to security concerns.	Traditional data marketplaces don't fully address agencies' data sharing challenges, nor do they meet the requirements of data providers and data consumers.	Agencies are leveraging data marketplaces with secure, neutral exchange locations that give them flexibility and control over the sharing and use of their data and algorithms.	The AI Data Marketplace Playbook provides agencies with a practical strategy that will enable them to effectively train AI models critical to achieving their missions.	Utilize the steps outlined in the AI Data Marketplace Playbook to set up a secure data exchange within the AI Data Marketplace solution at Equinix.	To accommodate datasets with differing security requirements, a data marketplace must support three data sharing trust models enabled by Platform Equinix®.

MARKET TRENDS

The reluctance to share data and algorithms is limiting the ability of agency data scientists to train AI models.



Mapping AI to the GEOINT Workforce, MeriTalk and the United States Geospatial Intelligence Foundation, April 2020

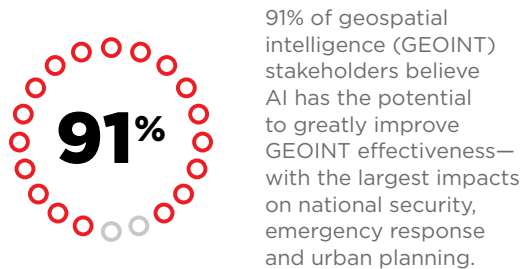
Implications

- Algorithms starved of data reduce accuracy and make results less meaningful.
- Multi-zone architectures with separate security zones are needed to safeguard data and algorithms for all marketplace participants.

Summary

Agencies must enable data providers, data consumers, data scientists, agency partners and public cloud providers to confidently exchange data and algorithms and train AI models that will enable agencies to innovate and meet their missions in the 21st century. They need a secure data marketplace that supports data sharing models and trust archetypes that enable them to bring an algorithm to the data (distributed model), data to an algorithm (centralized model), or exchange both in a neutral exchange location (federated model) where neither party sees the other's information, but both receive the same report.

AI could vastly improve agencies' accuracy, effectiveness and decision-making.

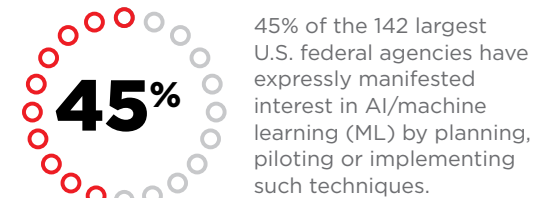


Mapping AI to the GEOINT Workforce, MeriTalk and the United States Geospatial Intelligence Foundation, April 2020

Implications

- Civilian and agency use of AI is expected to increase.
- Agencies will need to utilize a data marketplace whose architecture accommodates data providers, data consumers, data scientists, agency partners and public cloud providers.

A secure data marketplace that meets the standards and requirements of its participants is required.



Government by Algorithm: Artificial Intelligence in Federal Administrative Agencies, February 2020

Implications

- Data providers and data consumers interact and transact based on community rules and individual agreements.
- An architecture with neutral data exchange locations and hubs in major metropolitan areas worldwide enables flexible data exchange models.

MARKETPLACE INSIGHTS

The American AI Initiative is accelerating investment in, and use of, AI by government agencies.

Double

AI research and development

The president's FY21 budget commits to double AI research and development over the next two years.

The White House Office of Science and Technology Policy, February 2020

Opportunity

Collaborate with agencies and non-federal entities to tap into the power of AI to accelerate innovation and achieve missions.

Agencies are working in partnership with academia, industry, nonprofits, the private sector and other entities.

2x
the speed of growth
6x
the volume of traffic

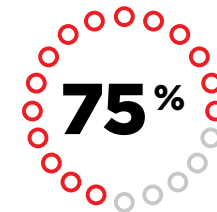
Interconnection bandwidth is forecasted to outpace the internet at 2x the speed of growth and 6x the volume of traffic.

Equinix, The Global Interconnection Index, 2019

Opportunity

Share information and increase interoperability through a highly interconnected digital edge platform that bypasses the public internet, ensures private connectivity, reduces latency and lowers costs.

Investment in AI is driving the demand for a secure, neutral, consortium-governed data marketplace.



75% of enterprise applications use 10 external data sources, on average.

100 Data and Analytics Predictions through 2021, Gartner, 2017

Opportunity

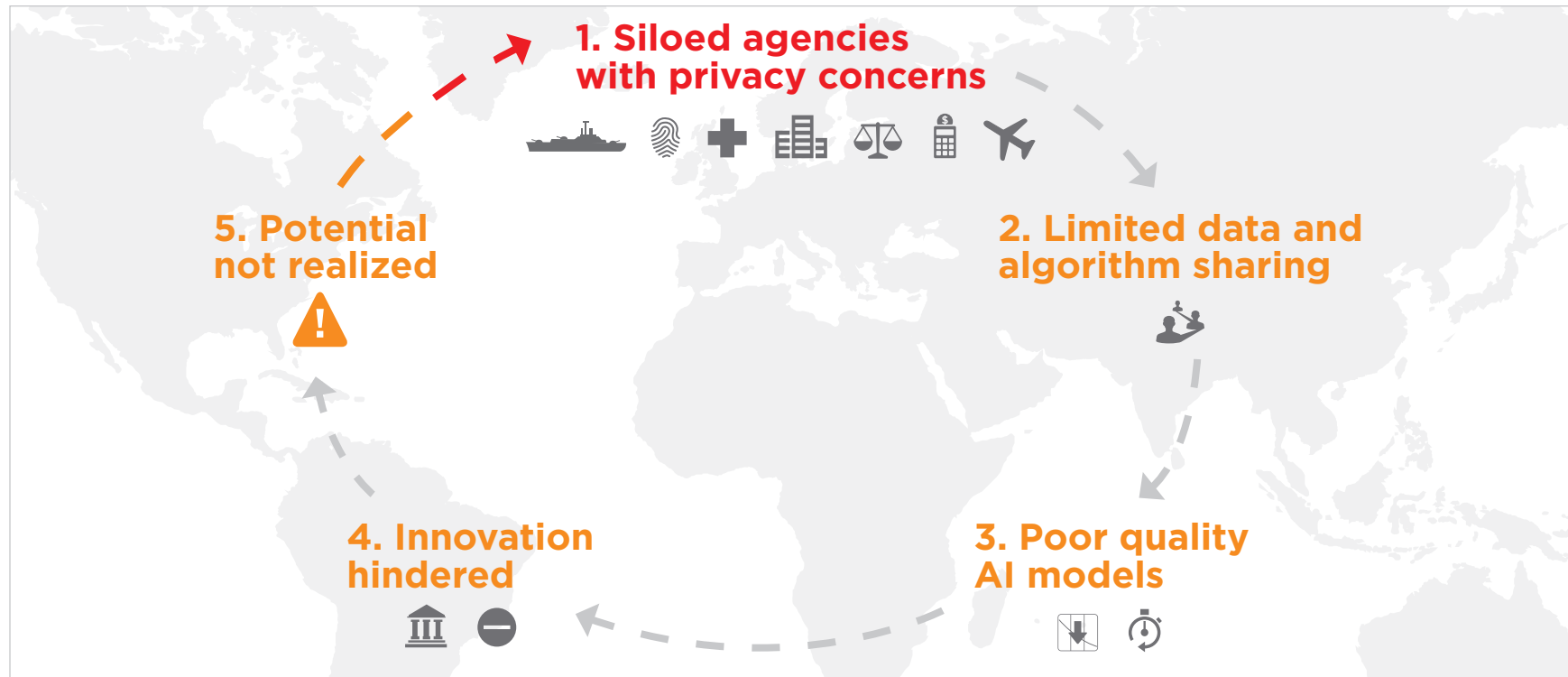
Utilize a data marketplace that supports different trust models for data exchange on a highly interconnected platform at a data connection hub.

Summary

The American Artificial Intelligence Initiative calls for government agencies to unleash AI resources, embrace trustworthy AI and remove barriers to AI innovation. To do so effectively, they must collaborate with each other and with non-federal entities to share the data and algorithms that feed robust AI models and drive innovation. A secure, neutral data marketplace on a highly interconnected platform that enables inferencing at the edge in exchange hubs worldwide is called for.

CURRENT-STATE CONSTRAINTS

Data exchange between government agencies is limited by security concerns and data marketplaces that do not meet the requirements of data providers and data consumers, thus impeding agencies' use of AI in achieving their missions.



Summary

Agencies must utilize external datasets to build the robust AI models that accelerate innovation. Today, most data marketplaces are architected around limited or simplistic trust archetypes that do not provide the flexibility agencies need to share different types of datasets with each other, their partners and public cloud providers.

FUTURE-STATE CAPABILITIES

A flexible, secure data marketplace that offers several ways to share datasets with different security requirements gives government agencies the ability to unlock the power of AI.



Summary

By utilizing a data marketplace that supports multiple data sharing and trust archetypes, and that uses an architecture with separate security zones (domains), agencies gain support for experimental and production analytics, heterogeneous AI/ML frameworks, federated analytics, blockchain-based lineage tracking and data exchange at agency/partner/cloud interconnection hubs worldwide.

STRATEGY

A data marketplace that empowers government agencies with AI capabilities requires a flexible, secure architecture.

Summary

Agencies must interconnect with other agencies, non-federal partners and service providers in their ecosystem via a modern IT platform that can handle the scale, security and performance demands necessary for data and algorithm exchange and AI modeling.

Once interconnected, those who will exchange data and algorithms must form a rule-setting governance consortium for a data marketplace that offers a range of data science processing archetypes to accommodate datasets with different data sharing and trust requirements.

With mutually agreed governance and contracts in place, agencies and their partners can share data and algorithms confidently, enabling them to utilize AI to achieve their missions.

1 Interconnect agencies, partners and service providers*

Establish a presence on a highly interconnected IT platform with neutral hubs in strategic locations

- Shorten the distance between ecosystem participants
- Enable secure information exchange between parties
- Reduce the attack surface

2 Exchange data and algorithms, and train AI models

Share/use data and algorithms to achieve agency missions

- Enable data scientists to upload workflows and experiment
- Train models in an agreed-upon exchange location
- Ensure control of data and algorithms with a multi-zone security architecture

3 Join or establish a data marketplace

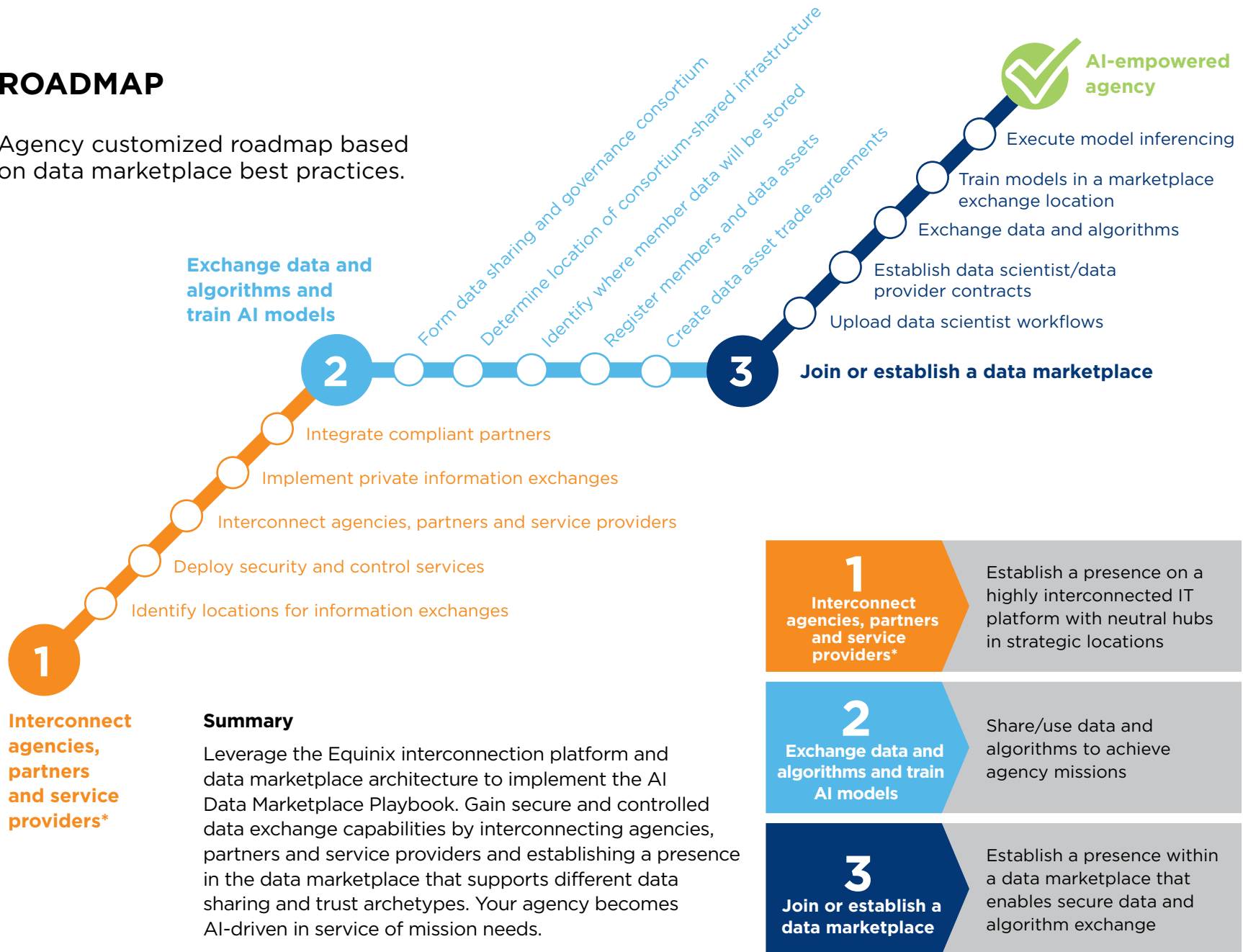
Establish a presence within a data marketplace that enables secure data and algorithm exchange

- Control membership in the data marketplace
- Specify the location of shared infrastructures
- Govern visibility and availability of assets with mutually agreed contracts

* Service providers may include cloud service providers, network service providers, financial service providers, supply chain providers and others.

ROADMAP

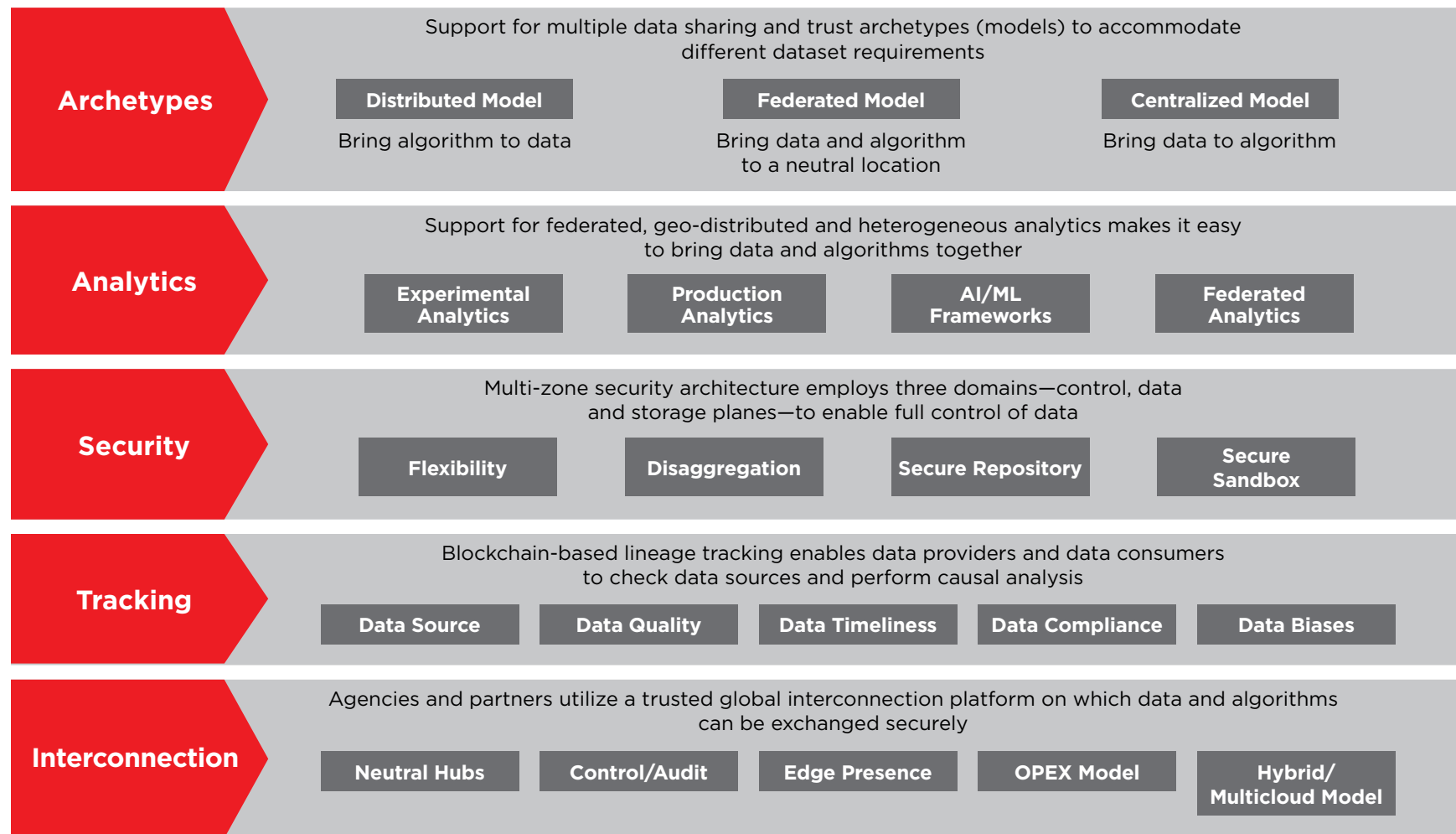
Agency customized roadmap based on data marketplace best practices.



*Service providers may include cloud service providers, network service providers, financial service providers, supply chain providers and others.

AI DATA MARKETPLACE PLATFORM

To achieve the benefits of the strategy and the roadmap steps outlined in this Playbook, your data marketplace architecture requires three layers: a data marketplace and metadata storage layer, an analytics platform layer and an infrastructure layer. This architecture is right for most agency use cases.



GETTING STARTED

Playbook
Companion
Resources

Equinix Government Solutions



See how Equinix enables IT modernization and digital transformation in government.

Equinix.com/Industries/Government

Contact your Equinix Government Solutions account executive at **federalsales@equinix.com**

**Request a more detailed
Digital Edge Strategy Briefing
with our experts.**

eqix.it/DESBfederal

Global Interconnection Index



Interconnection bandwidth growth is shaping digital opportunities for agencies.

eqix.it/3dQ2mLQ

Learn more at

Equinix.com/Industries/Government

White Paper: The AI Data Marketplace Solution at Equinix



Gain a deeper understanding of the data marketplace and how it can inject AI into agency missions.

eqix.it/Algovwhitepaper



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