Adobe Cloud Platform

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Today's digital landscape is teeming with people interacting across many devices — mobile phones, tablets, Internet televisions, car dashboards and countless other touch points. And, consumers have higher expectations of their content than ever before — they want personalized and relevant experiences, delivered to them in real time. These digital changes are exciting. But they also present enormous challenges for businesses, that need to reach the right people with the right content at the right time, faster than they ever have before. Massive amounts of data, the explosion of different devices and screens, and skyrocketing customer expectations are forcing businesses to completely rethink their approach to how they interact with their customer.

At the center of this challenge is the need to create a customer profile that represents everything you know about your customer including behavioral data, CRM data, product usage, and commerce data. We call this the Experience System of Record. The Experience System of Record is enriched with insights derived from past interactions and is available in real time to drive relevant and personalized experience across any channel.

There are four key factors that are preventing enterprises from building an Experience System of Record:

1. Existing enterprise systems were not designed to handle high-volume, high-velocity data required to provide the necessary customer insights.

2. Companies struggle to normalize data across these disparate systems. This crucial step is required before data from different sources can be analyzed to provide a complete and unified customer profile.

3. Many enterprises lack the skills and capabilities to apply advanced analysis techniques such as machine learning and artificial intelligence to enrich customer profiles with actionable insights.

4. Experiences happen in real time. An Experience System of Record needs to be able to roundtrip data and insights within milliseconds to personalize customer experiences in the moment.

Adobe Cloud Platform

T he Adobe Cloud Platform (ACP) is the Experience System of Record that centralizes and standardizes customer data from disparate sources to derive new insights and make them available to experience-delivery systems in real time. ACP is an open, extensible, multi-tenant, cloud platform built around the following pillars: data, governance, machine learning and profile management.
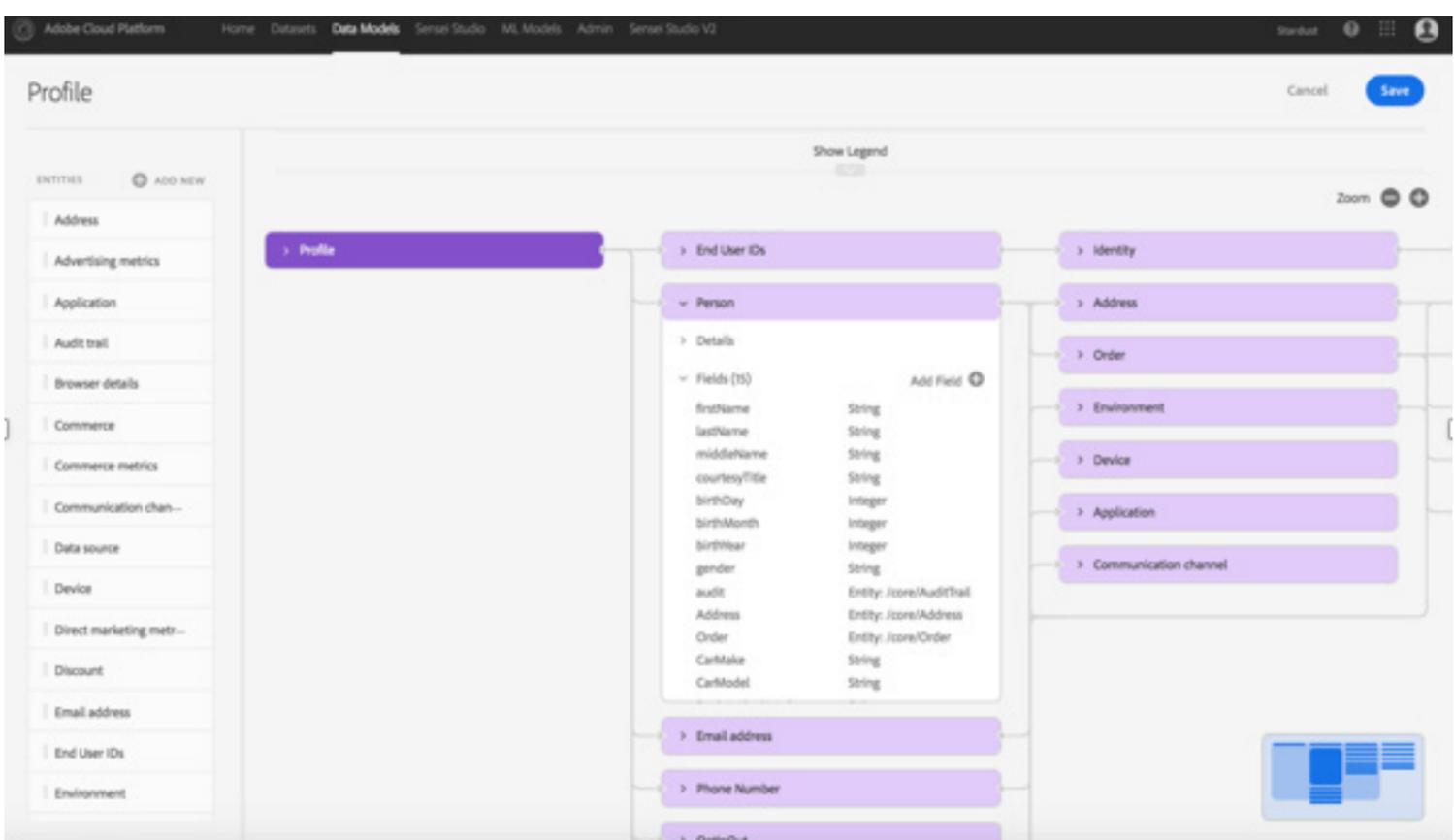
Data

Data is at the core of the Adobe Cloud Platform. Data that is collected through the Adobe solutions, including Analytics Cloud, Experience Cloud, and Advertising Cloud flows into the Platform. Launch, by Adobe, is the next-generation tag management system and client-side platform that makes it easy to integrate Adobe and partner tools into your experiences to capture data. ACP also provides a set of built-in connectors, steaming and batch APIs, and a rich ecosystem of Data Integration tools like Informatica, SnapLogic, Unifi, to ingest additional customer data from CRM, commerce, loyalty, voice of customer, offline purchases and data sources across the enterprise to provide a complete view of your customer.

Experience System of Record
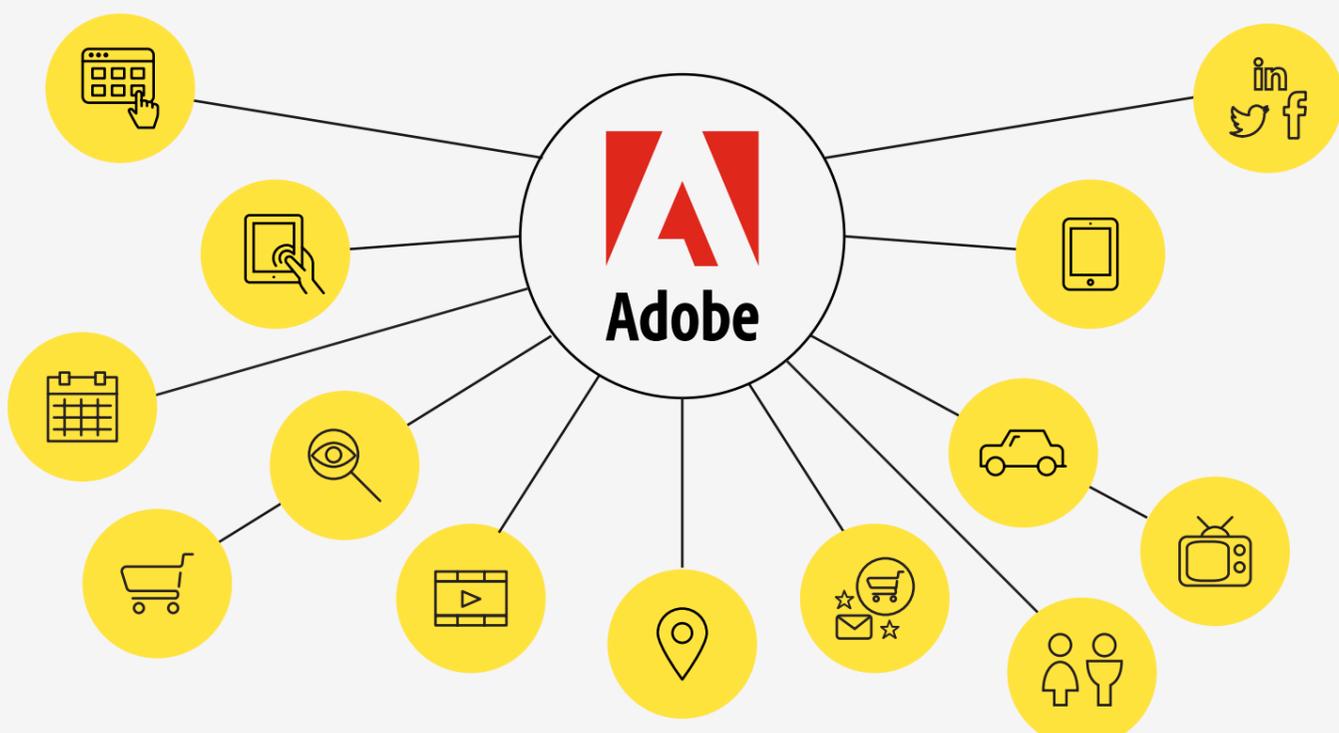
Governance

Data in ACP organized into a common set of schemas known as Experience Data Model (XDM). XDM provides open, standardized, extensible schemas to represent all experience data, thereby enabling immediate semantic understanding of cross-channel data and fostering an ecosystem of pre-built insights and services. XDM is a formal standard, published in JSON Schema, enabling data interoperability in the Adobe Cloud Platform. A schema registry and schema design tool are provided to manage and extend XDM to fit your needs.

ACP also helps to govern and control how data is used. Data in today's world is subject to government regulations, contractual restrictions and your internal policies that limit data usage, and those often come with penalties or adverse consequences for your non-compliance. The business value you can derive from your data is very much controlled by your ability to know what data you have and where it came from, to catalog and categorize it, and to manage the myriad of regulatory, contractual, and policy limitations on its use.

Adobe Cloud Platform was built with these considerations in mind; that is why it provides robust, powerful data governance framework that you can use to manage compliance with regulations such as GDPR, restrictions, and policies controlling the use of your data. With Adobe Cloud Platform, you can catalog and categorize your data and define policies for how different categories of data can be used.
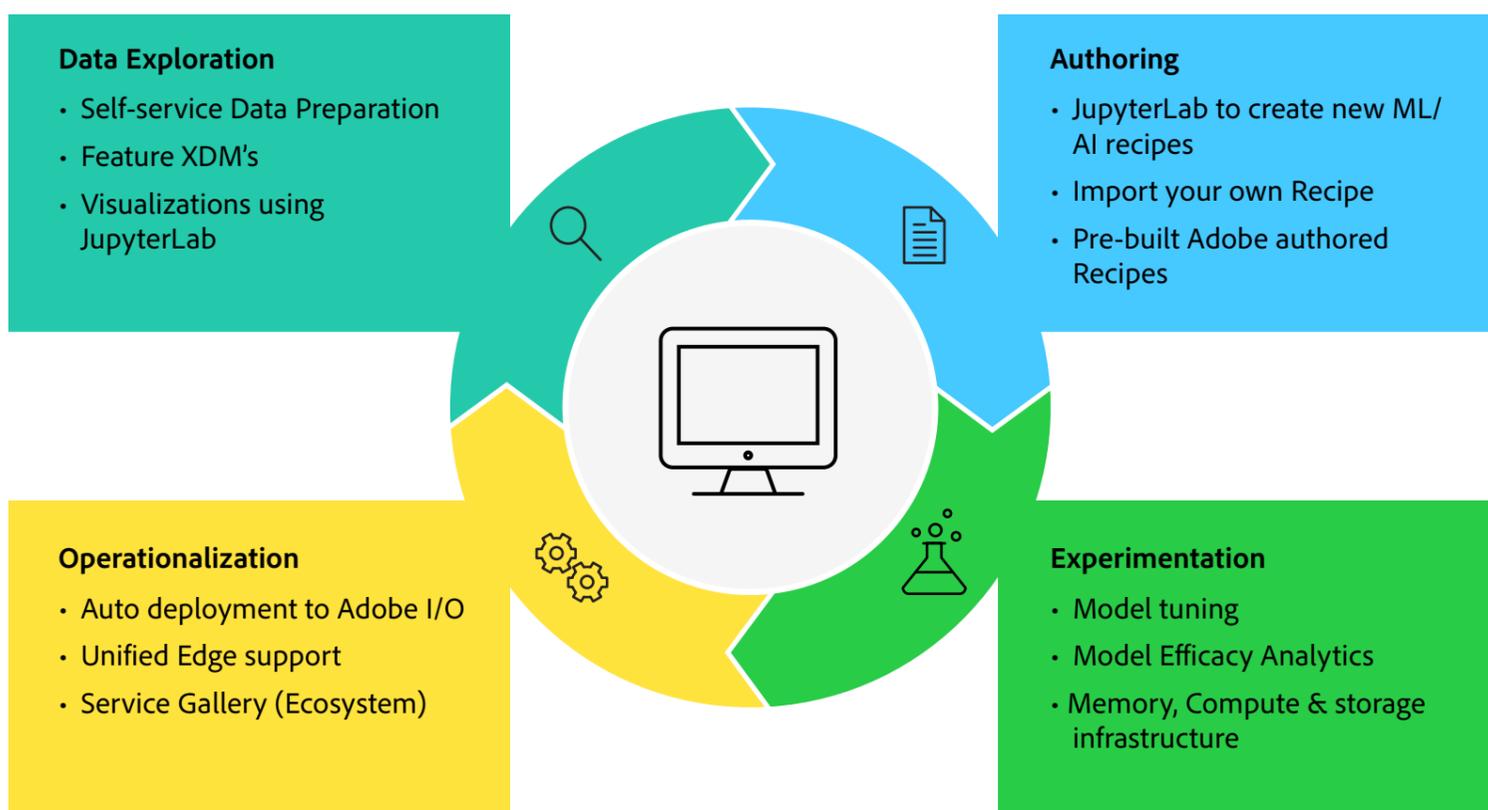
Machine Learning

Adobe Sensei services are pre-built artificial intelligence (AI) and machine learning (ML) models that can run on any of the data within ACP to enrich profile with additional insight to optimize experiences. These services are built upon an integrated ML framework and toolset called Data Science Workspace.

Data Science Workspace also allows enterprises to develop, train and execute their own custom ML models directly on the platform. Data Science Workspace provides the following capabilities:

- Data exploration — use a notebook interface to explore and visualize any data on the platform. Write your own scripts to manipulate the data and create 'feature' data sets that can be used and inputs into pre-built or custom ML models.

- Model authoring — use a notebook interface to author your own custom ML models.

- Experimentation — run experiments with different data sets and model tuning configurations to determine the most effective model instance.

- Operationalization — once you've identified a model instance that is providing the most accurate predictions, deploy your model as a service for either batch or real-time scoring. Share and manage services within the Services Gallery.

Data Science Workspace

Data Exploration
- Self-service Data Preparation
- Feature XDM's
- Visualizations using JupyterLab

Authoring
- JupyterLab to create new ML/AI recipes
- Import your own Recipe
- Pre-built Adobe authored Recipes

Operationalization
- Auto deployment to Adobe I/O
- Unified Edge support
- Service Gallery (Ecosystem)

Experimentation
- Model tuning
- Model Efficacy Analytics
- Memory, Compute & storage infrastructure

Profile Management

T o provide personalized experience, an enterprise needs real-time access to a complete view of the customer. This holistic view is provided by the Profile service. The Profile service can ingest data from various enterprise repositories including first party data as well any third-party data. This data may consist of CRM data, ecommerce transactions, offline transactions, loyalty program data, behavioral data from mobile, web or emails, social interaction data etc.

Data from multiple data sources is stitched together to provide a unified view of the customer. Each data source has its own notion of identity of a customer. These identities are matched against each other. For first party data, this requires de-duplication, data merge and survivorship rules. For online behavioral data, identities are often based on cookies and require cookie-matching techniques. Mobile and IoT have their own notion of identities based on device. The Identity service uses deterministic and probabilistic algorithms to match identities and model these relationships as a graph.

The Profile service enables creation of audience segments for campaign execution as well as real-time profile access based on ID. Fast access to this data is necessary for real-

time activation use cases, such as web personalization, advertising, or mobile marketing. This real-time activation occurs in a large, geographically distributed network of decision-making nodes called the edge. A subset of the Profile is made available on the edge for decisioning and can be accessed directly from Adobe Solutions or any application via the Profile service API.

Adobe I/O Ecosystem

Adobe I/O makes everything Adobe builds accessible to our customers and partners. Think of Adobe I/O's client SDKs, APIs, and tools as the infrastructure you need to build on top on Adobe technology.

Adobe I/O

Developers can learn about, integrate with, and extend applications with our technologies across the Adobe Experience Cloud, Adobe Creative Cloud, and Adobe Document Cloud. Adobe I/O includes unified access to our REST APIs using Adobe I/O API Gateway, real-time integrations using Adobe I/O Events, and the ability to run integration code within our cloud platform using Adobe I/O Runtime. Developers can create, manage, and review all their applications and API usage in Adobe I/O Console — a secure, enterprise-grade service that already handles over 700 million API calls per day.

Adobe I/O Events

Enables event-driven experiences, applications, and custom workflows that leverage or even combine all the APIs from Adobe's cloud offerings. These event-based notifications are pushed to the application in real-time, augmenting RESTful APIs that require applications to periodically poll for meaningful events or data. Adobe I/O Events architecture lets developers build engaging applications that focus not just on available resources, but also activities and changes, providing you near real-time data and lower API overhead.

Adobe I/O Runtime

Is a new serverless platform to let developers run custom code that extends our cloud platform and services. Serverless architecture eliminates the burden of server set-up, monitoring, load-balancing, scaling, and other administrative overhead. Within the Adobe ecosystem, developers can easily and securely run code against content and data already stored in the cloud platform. Adobe I/O Runtime will allow you to create code that responds to Adobe I/O Events. Our roadmap for Adobe I/O Runtime includes direct access to Adobe APIs, services, and variables like IMS and tenant information.

Why Adobe?

For customers and partners, Adobe Cloud Platform offers a path towards a streamlined, seamless experience management process. Our platform starts by solving data and profile management: ingesting from any source, standardizing to a common data model, applying governance rules on different data types, and managing consumer identity and profiles. Sensei services and custom ML models can be used to enrich Profile with actionable insights, and surface it through the applications in Adobe Experience Cloud, Adobe Creative Cloud, and Adobe Document Cloud. Added to this is the platform's seamless integration and open APIs through which developers can build their own solutions and integrations.

Adobe Cloud Platform is the Experience System of Record that helps businesses better serve their customers and deliver amazing experiences.

To learn more about the Adobe Cloud Platform visit:

www.adobe.com/enterprise/cloud-platform-highlights.html