aws

Enhancing customer experiences using Amazon Personalize

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What are we going to cover today?

- The case for personalization

- Overview of Amazon Personalize

- What's new

    ▪ Recommenders optimized for video on demand and retail use cases

    ▪ User segmentation

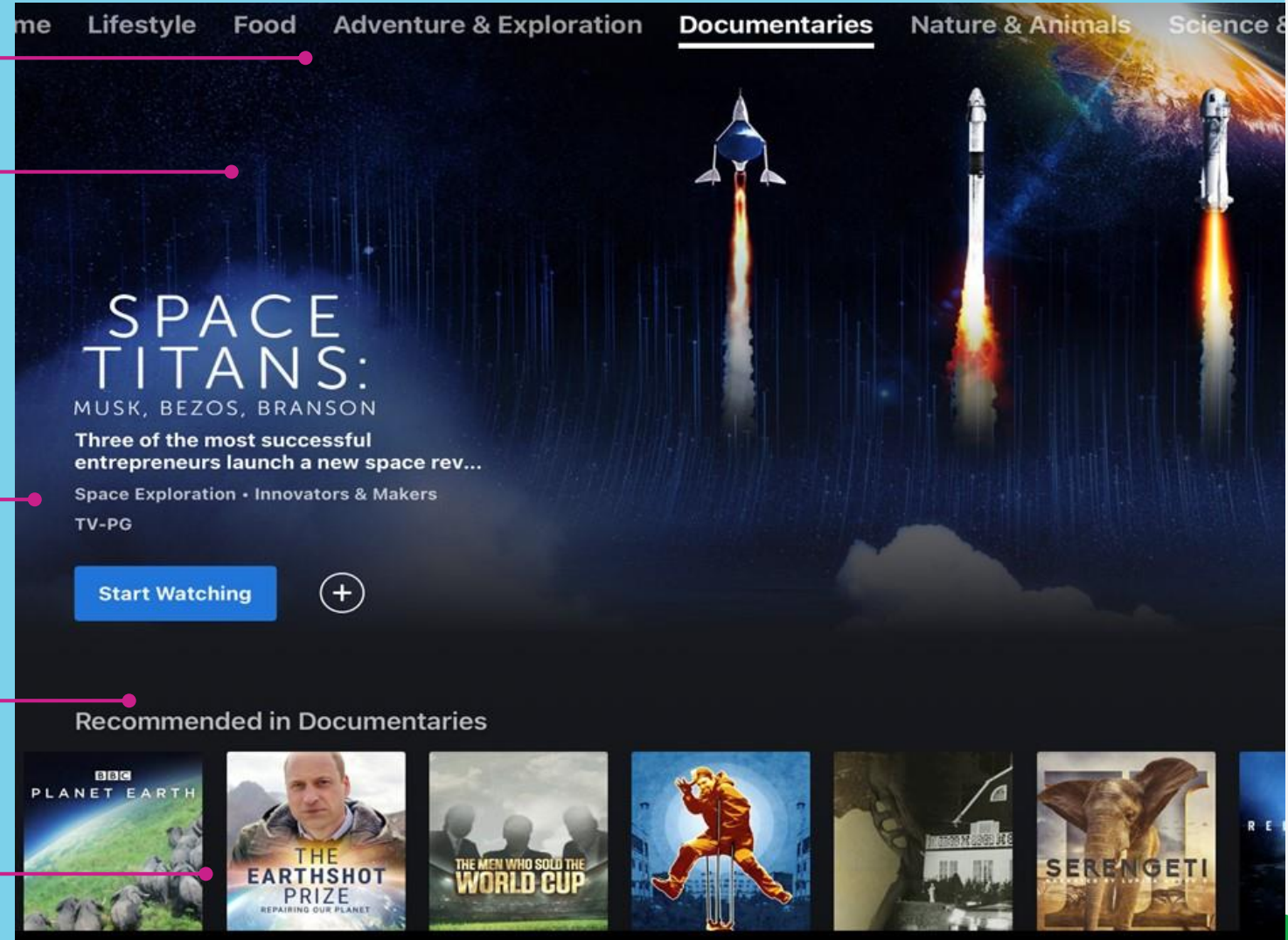- Demo and reference architecture

Every touchpoint is personal

Categories

Artwork
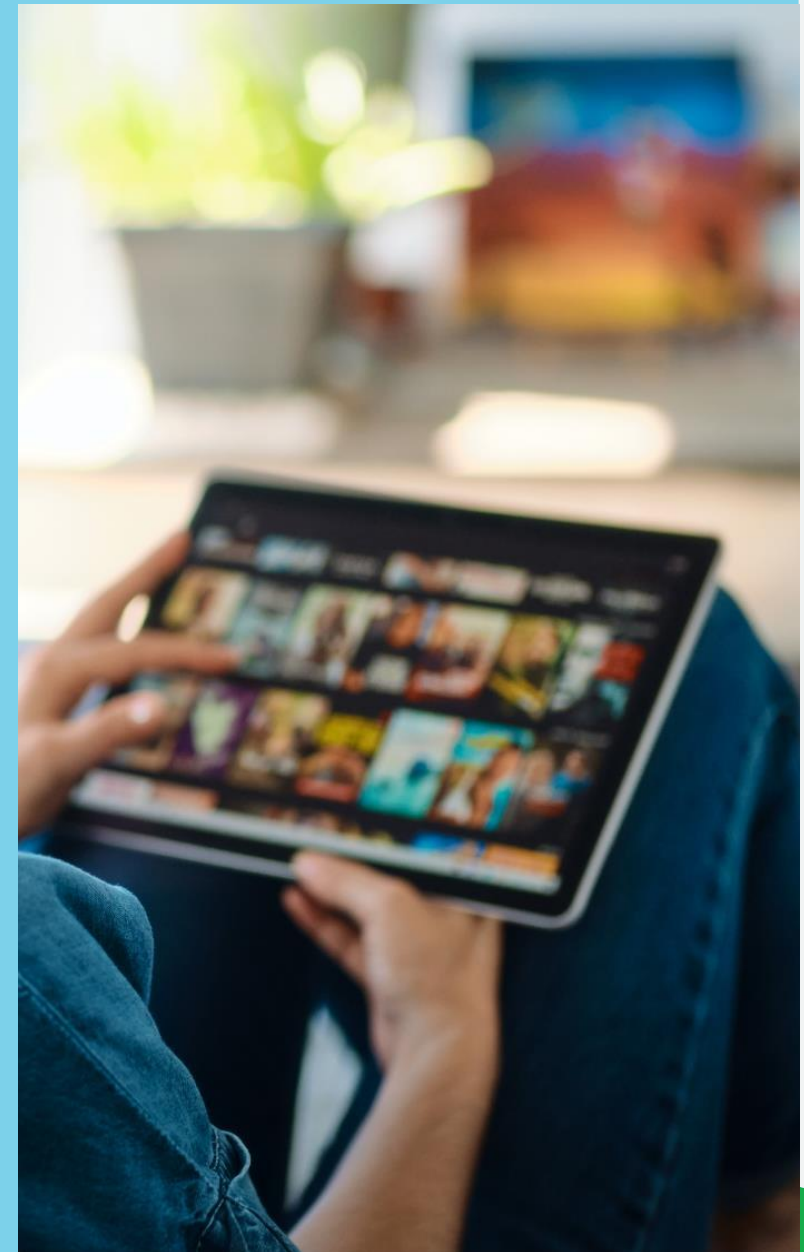
Promotions

Order of rails

Order of content

Customers expect personalized customers experiences

63%

of consumers see **personalization as the standard level of service**

Improving business outcomes

Acquisition and retention

Attracting new customers

Retaining customers in a crowded digital environment

Engagement

Understanding, measuring, and improving user experiences across digital channels

Increasing time spent engaging with products and content

Discoverability

Helping customers discover relevant products and content

Highlighting new products, content, and promotion offerings

Efficiencies and revenue

Improving digital marketing efficiencies

Increasing free trial conversions and customer LTV

Pioneering personalization at Amazon

The evolution of 20+ years

Then

First feature launched for recommendations in 1998
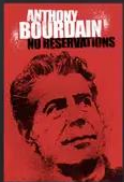

Now

Delivering sophisticated and unique experiences to consumers across channels and devices using machine learning

It can be challenging to build a personalization system from the ground up

→ Hard to hire talent with the right skill set and ML experience

→ Development & data science teams may be bandwidth constrained

→ Development time is too long

→ Total cost of ownership is too high
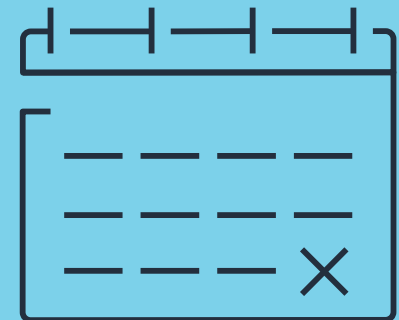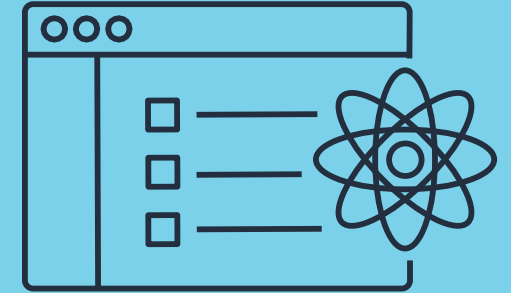
Amazon Personalize

Delivers personalized
user experiences faster
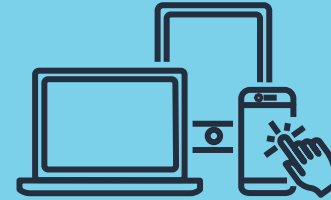
Responds quickly to
changing user intent

Easily integrates
with existing systems

Encrypted to be
private and secure

Pay only for
what you use

How it works

1

Add your data

User interactions
(views, sign-ups, conversions, etc.)

Item metadata
(details of articles, products, videos, etc.)

User metadata
(age, location, etc.)

2

Create a solution

User-level recommendations

Item-item similarity

Personalized ranking

3

Tune recommendations

New item bias

Business rules/filters

Optimize for business metric
(e.g., profit, revenue, watch time)

4

Access recommendations

Real-time recommendations API

Download batch recommendations

Contextualize recommendations
(e.g., device type, location)

Real-time recommendations

User intent can change quickly; you need recommendations that can keep up in real time

Amazon Personalize senses changes in user intent in real time based on their session activity to keep recommendations fresh and relevant
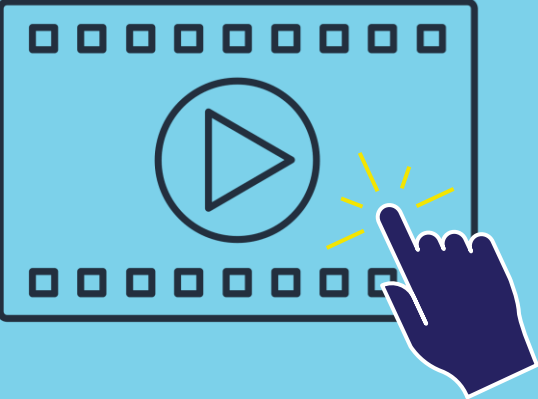
Recommendations

Contextual recommendations

Providing relevant recommendations requires that you consider the context in which they are being viewed

Amazon Personalize considers the context while generating recommendations

Examples
- **Device type**
- **Location**
- **Time of day/seasonality**

Business rules

You need extra control over your recommendations without extra overhead

Amazon Personalize enables you to specify business rules to automatically augment the recommendations generated by ML models
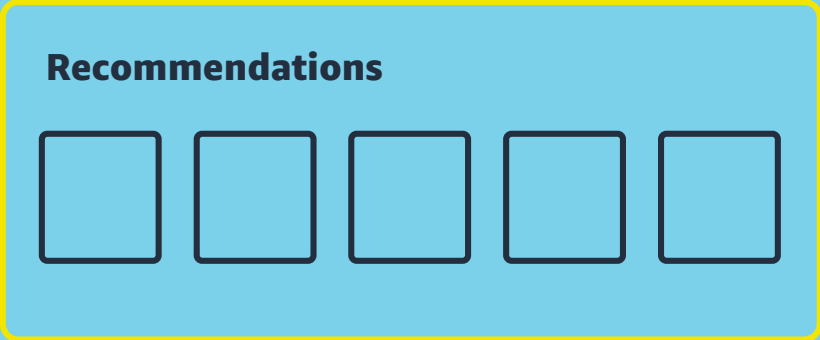
Recommendations

New items in fast-changing catalogs (cold start)
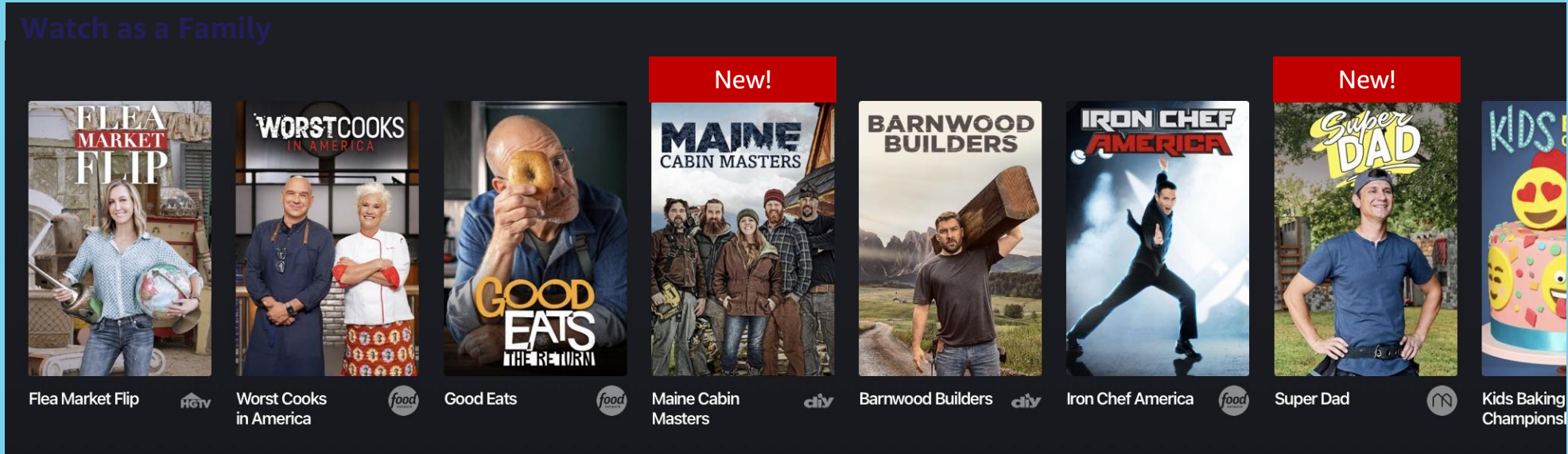
New items have no interaction history, which makes personalization challenging

→
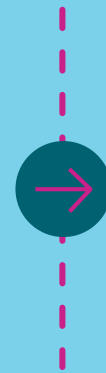
Amazon Personalize enables you to create a balance between recommendations for new and old items in your catalog

0   0.3   1

Item exploration weight

Unlock information in unstructured text

Description:
David Attenborough narrates this highly-acclaimed series exploring the natural world of the planet. Each episode explores a different habitat, focusing on how living creatures deal with the challenges posed by each environment.

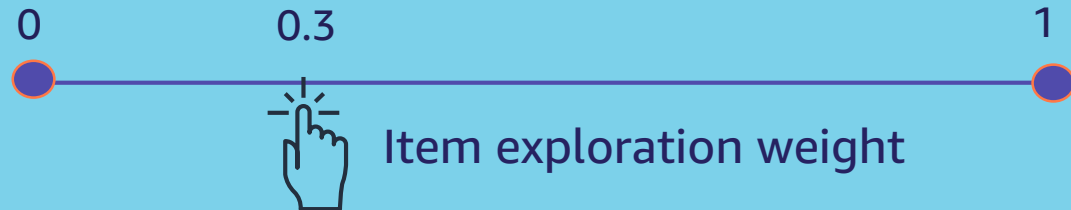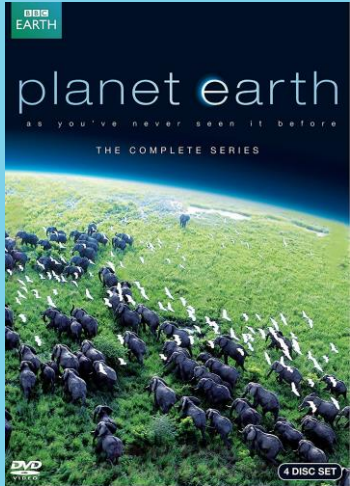Emmy Award-winning, 11 episodes, 5 years in the making, the most expensive nature documentary ever commissioned by the BBC, and the first to be filmed in high definition.

Magnificent. ☆☆☆☆☆
Amazing. Stunning. Magnificent. Planet Earth goes where no show has gone before. It captures beautiful images and animals that no one has before captured on film. I was absolutely blown away.

A True Masterpiece ☆☆☆☆☆
Alastair Fothergill's cinematic docu-series was a phenomenon in 2006 - and the touchstone for an extremely consistent franchise of remarkable and evergreen nature documentaries showing us with unparalleled technical ability the majesty and beauty of our planet.

Astonishing ☆☆☆☆☆
The production value is absolutely amazing and is so informative. You honestly can't believe what your watching because it doesn't seem possible. The shots they do are so creative and is well worth the time. A must watch for everyone.

Valuable signals are often trapped in descriptions, synopses, and reviews

→

Amazon Personalize uses Natural Language Processing (NLP) to automatically extract key information from unstructured text

New similar items recipe
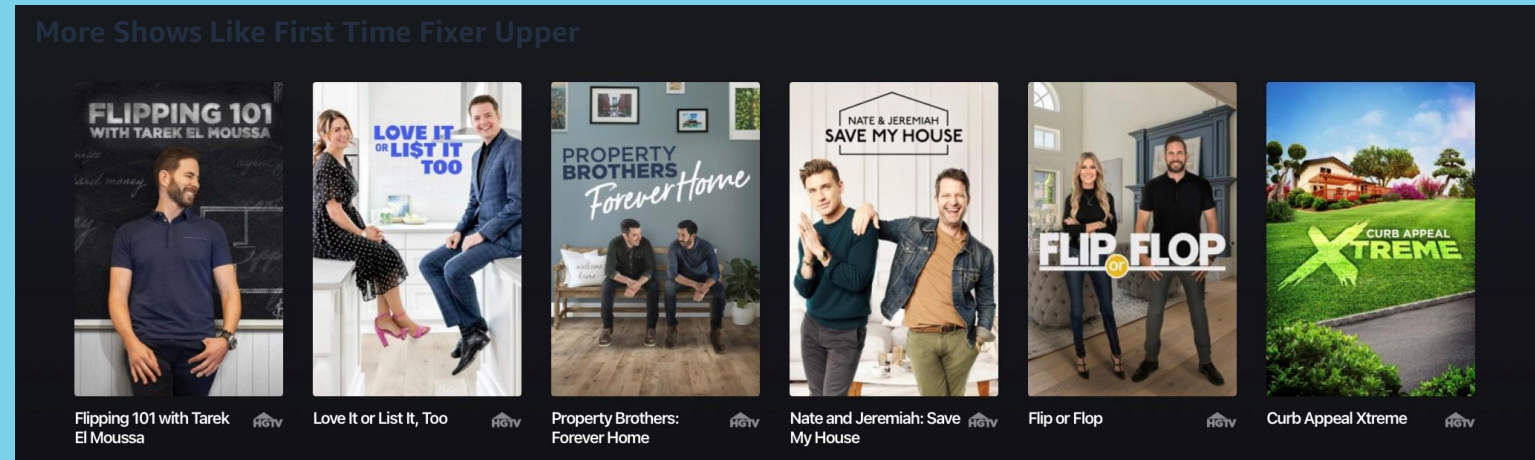
Similarity algorithms that only look at co-interactions between items are not sufficient

More Shows Like First Time Fixer Upper

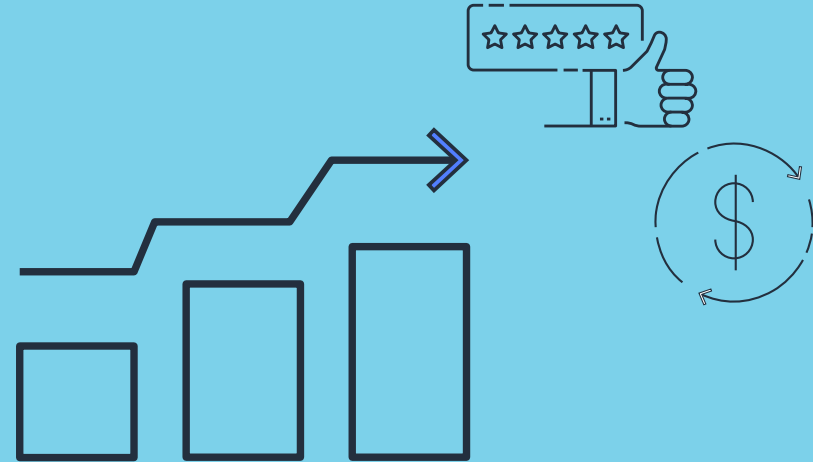**New similarity recipe uses item metadata, in addition to co-interactions, to determine similarity**

Optimize for business metrics

Most recommender systems are designed to only increase user engagement

Optimize recommendations for relevance while improving business metrics

Optimize for revenue, profit margin, video watch time, or any numerical attribute in your catalog

New launches

User segmentation

- Identify users interested in a genre, category, or any other item attribute
- Identify users interested in a given item such as a movie, product, etc.

- More effective campaigns through marketing channels
- Acquire users for new product categories, genres, channels, etc.
- Improve return on investment for your marketing spend

Action movie fans

New launches

Use-case-optimized recommenders for media & entertainment

- Top picks for you
- Because you watched X
- More like Y
- Most popular

Top picks for you

Most Popular

Because you watched Forrest Gump

New launches

Use-case-optimized recommenders for retail

- Recommended for you
- Customers who viewed this also viewed
- Frequently bought together
- Most viewed
- Best sellers

Recommended for You

Customers who viewed this also viewed

Frequently Bought Together

How it works: a closer look

How it works
CUSTOM DATASET GROUP

Analytics solution → **PutEvents**
click, view/watch/listen, purchase → **Interactions dataset**

Catalog management system → **PutItems**
category, price, genre, description → **Items dataset**

User management system → **PutUsers**
age, location, subscription tier → **Users dataset**

Solution

Recipe

Filter

Solution version

Campaign

Batch inference job

Filter

Input   **Output**   **Bulk**

How it works

Analytics solution

PutEvents
click, view/watch/listen, purchase

Interactions dataset

Catalog management system

PutItems
category, price, genre, description

Items dataset

User management system

PutUsers
age, location, subscription tier

Users dataset

Filter

Recommender

Recipe
(VOD/Retail)

How it works

USER SEGMENTATION

Analytics solution → PutEvents — *click, view/watch/listen, purchase* → Interactions dataset

Catalog management system → PutItems — *category, price, genre, description* → Items dataset

User management system → PutUsers — *age, location, subscription tier* → Users dataset

Solution ← Item affinity recipe

Solution version → Batch segment job

Filter → Batch segment job

Input → Batch segment job → Output → Engage

Demo and reference architecture

Enhancing customer experiences with Amazon Personalize

- Build state-of-the-art recommendation systems

- Personalize key customer touchpoints

- Engage customers based on their affinity with your products and content

- No machine learning experience required

- Pay-as-you-go

Resources

- Amazon Personalize product page

  - https://aws.amazon.com/personalize/

- Retail Demo Store reference architecture

  - https://github.com/aws-samples/retail-demo-store

- Sample code and solutions

  - https://github.com/aws-samples/amazon-personalize-samples

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Thank you!