AWS re:Invent

NOV. 29 – DEC. 3, 2021 | LAS VEGAS, NV

AIM204

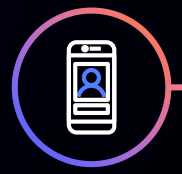
Build standout user experiences using ML with Amazon Personalize

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General Manager, AWS AI Services
AWS

Haris Husain (he/him)
VP, Content Discovery
Discovery Inc.

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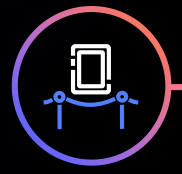
Agenda



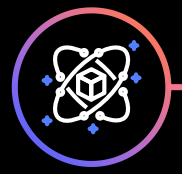
The case for personalization



Challenges and key learnings



Sneak peek into Amazon Personalize



New feature launches



Discovery's personalization story



Discovery+ and Amazon Personalize

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Every touchpoint is personal

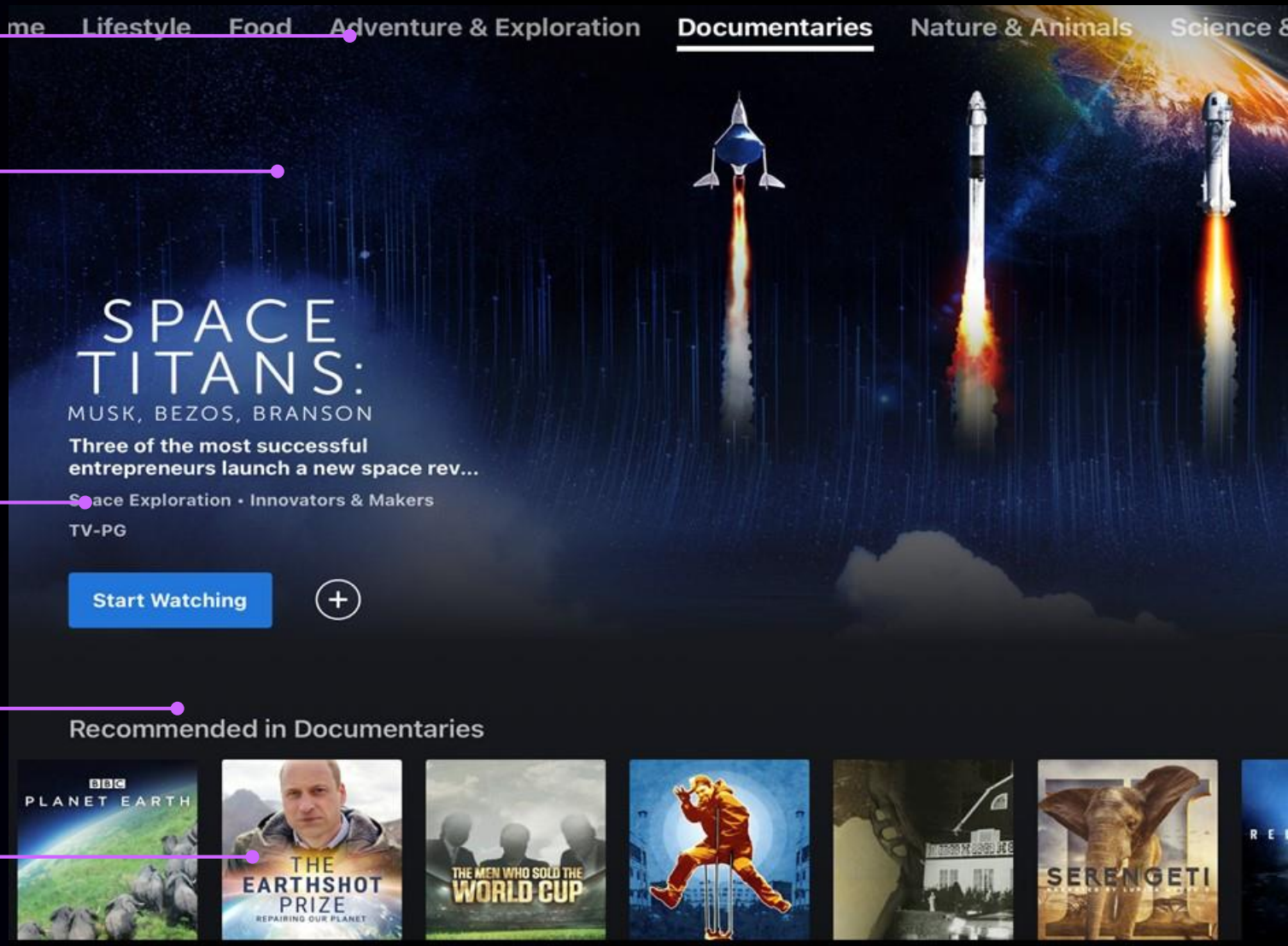
Categories

Artwork

Promotions

Order of rails

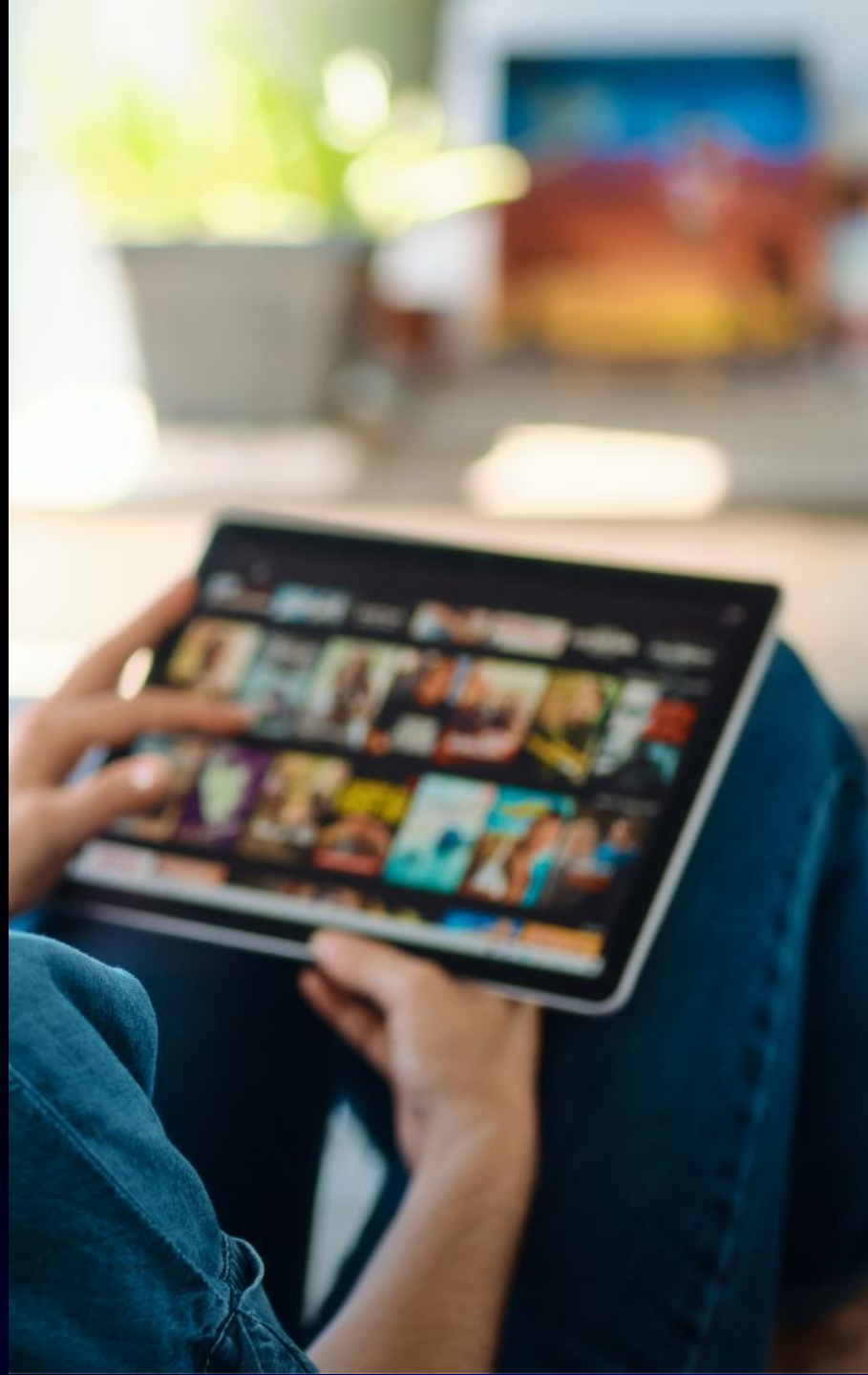
Order of content



Consumers expect personalized user experiences

63%

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



https://www.business2community.com/marketing/30-amazing-personalization-statistics-02289044

Pioneering personalization at Amazon

The evolution of 20+ years

Then

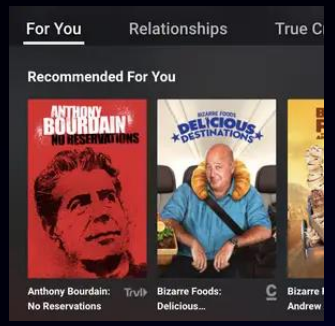
First feature launched for recommendations in 1998



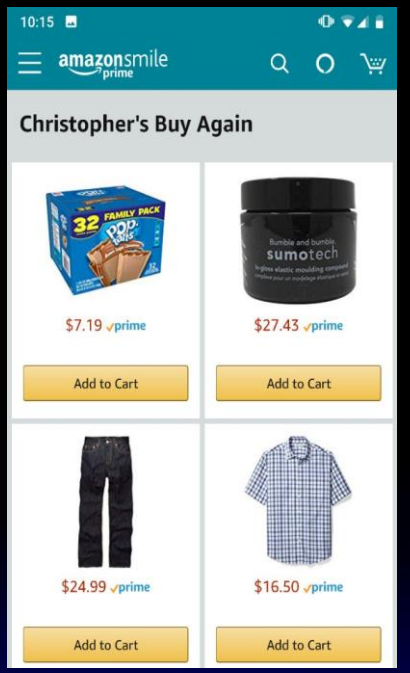
Now

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









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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



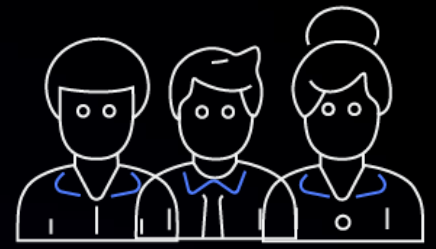
Improving digital marketing efficiencies

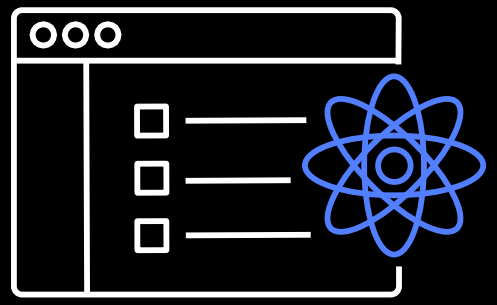
Increasing free trial conversions and customer LTV

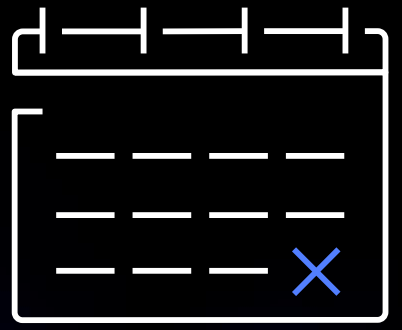
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It can be challenging to build a personalization system from the ground up

- 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







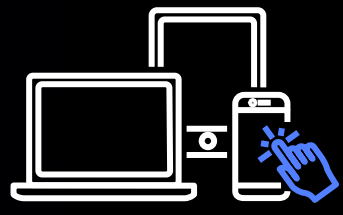
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Amazon Personalize



Delivers personalized user experiences faster



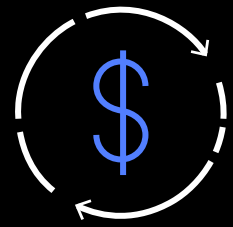
Responds quickly to changing user intent



Easily integrates with existing systems



Encrypted to be private and secure



Pay only for what you use

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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/filers

Optimize for any 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)

Relevance scores

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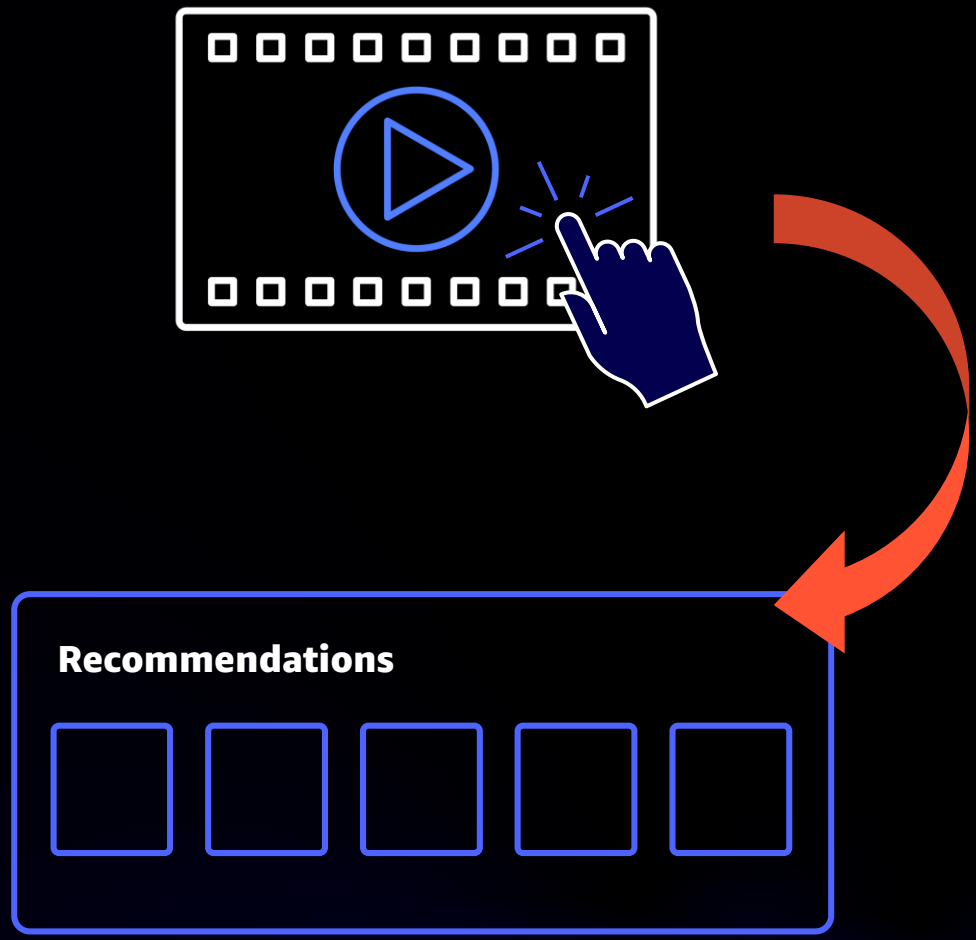
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Real-time recommendations

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



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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**

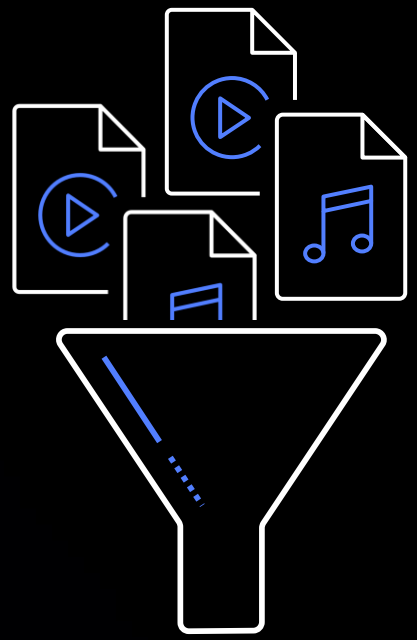
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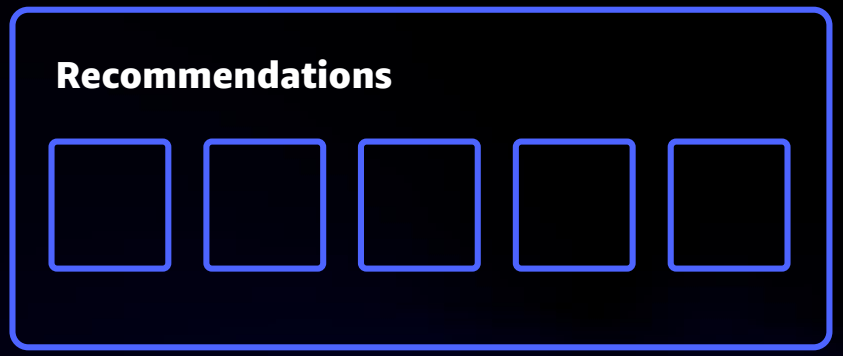
Business rules

You need extra control over your recommendations without extra overhead



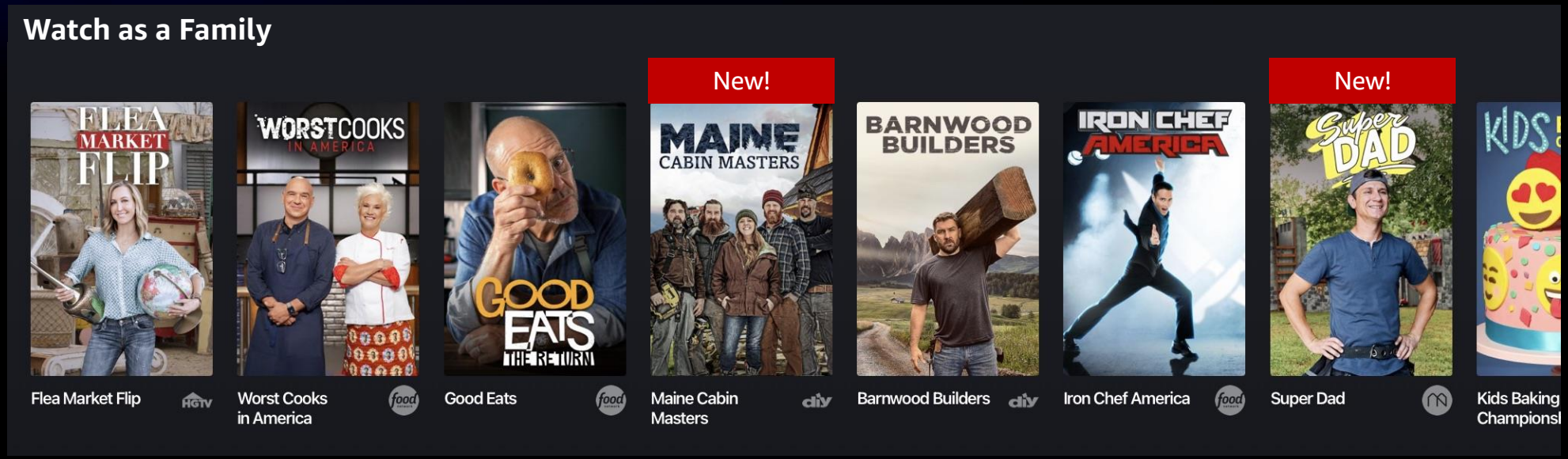
Amazon Personalize enables you to specify business rules to automatically augment the recommendations generated by ML models





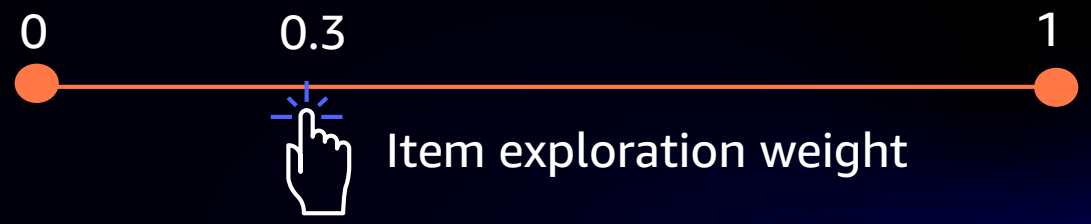
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New items in fast-changing catalogs (cold start)



New items have no interaction history, which makes personalization challenging

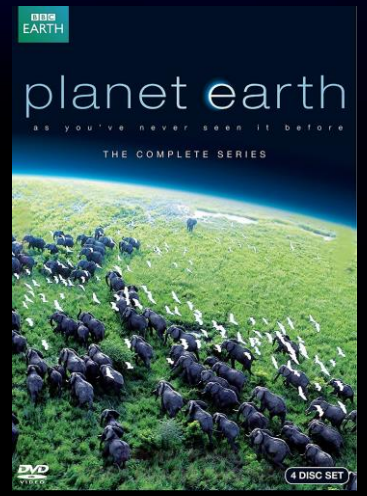
Amazon Personalize enables you to create a balance between recommendations for new and old items in your catalog



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New in 2021

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

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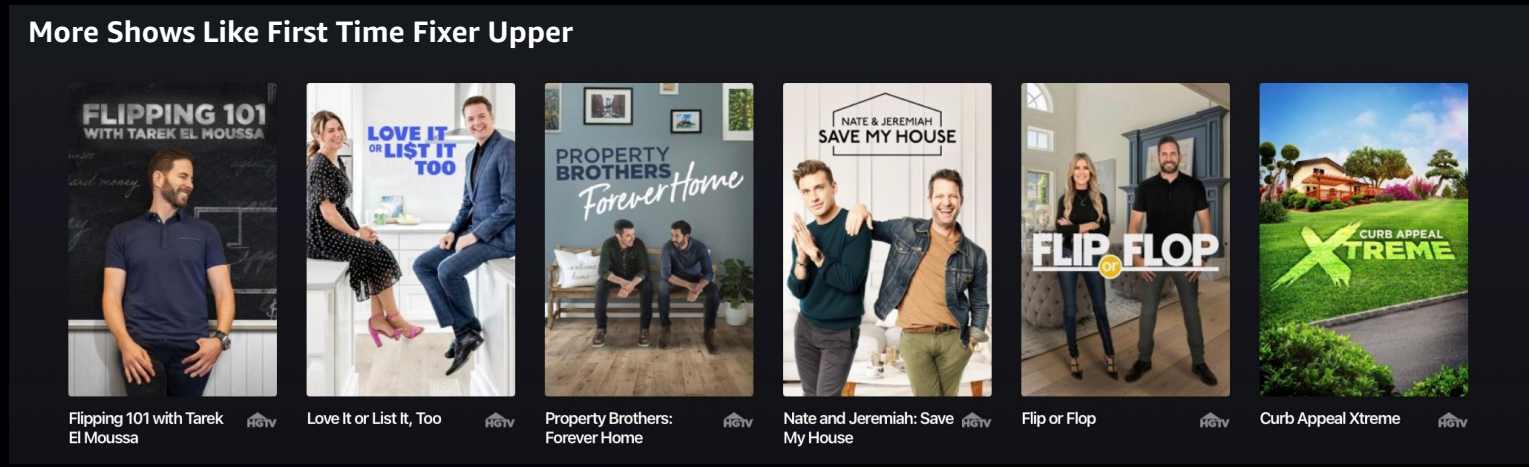
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New in 2021

New similar items recipe

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

New deep learning-based recipe supports thematic similarity in addition to co-interactions-based similarity



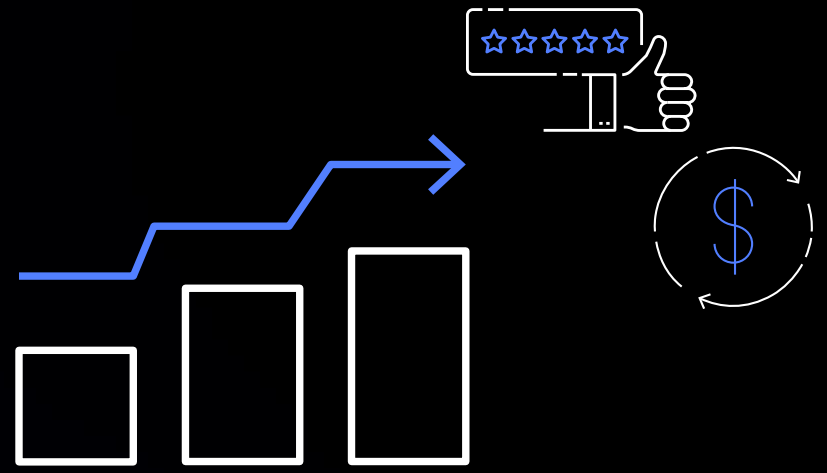
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New in 2021

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

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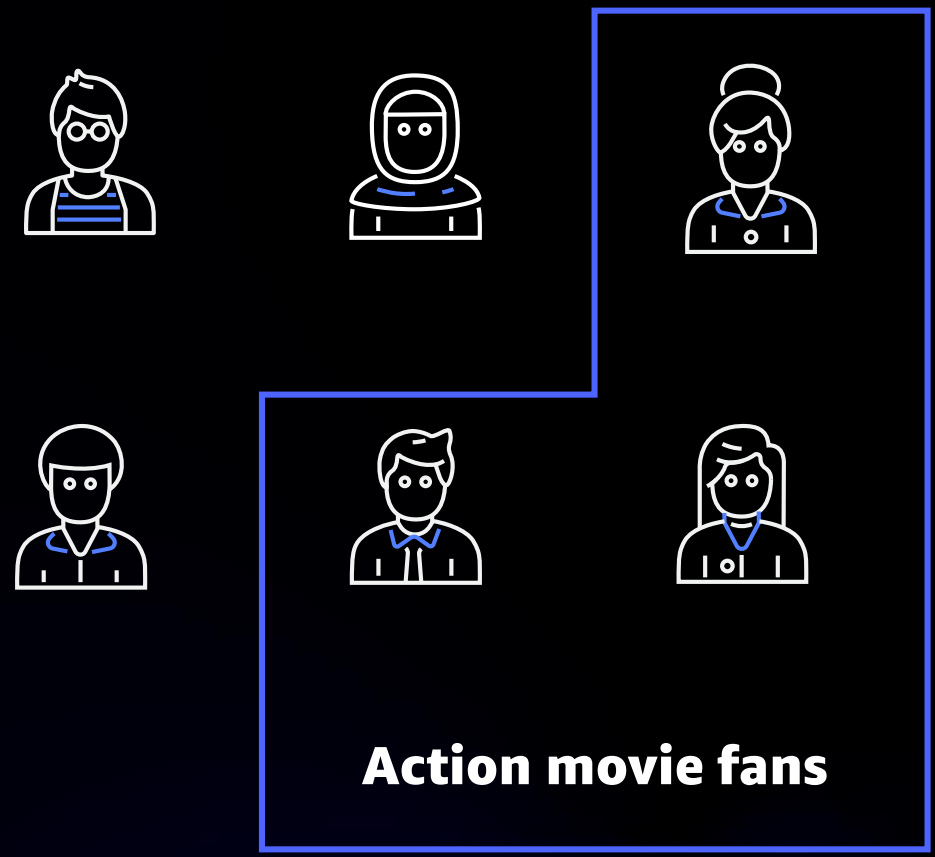
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New launches

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



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New launches

Use-case-optimized recommenders for media & entertainment

- Top picks for you
- Because you watched X
- More like Y
- Hot picks

Top picks for you



Hot Picks



Because you watched Forrest Gump

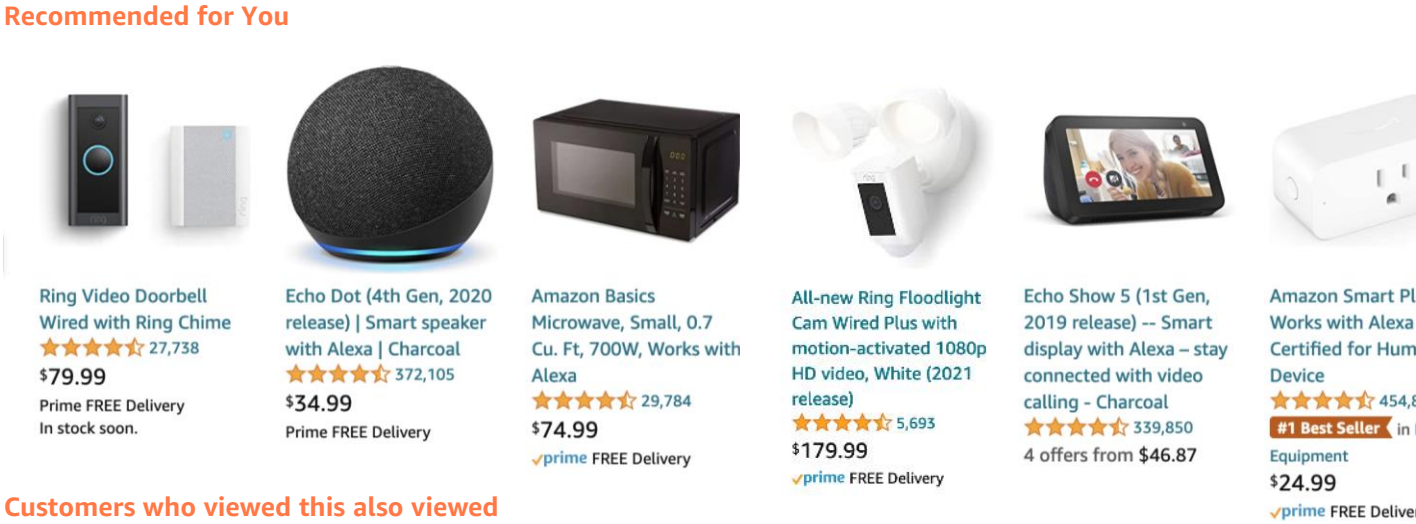


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New launches

Use-case-optimized recommenders for retail

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







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Amazon Personalize



Thousands of businesses use Amazon Personalize to create personal user experiences

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Discovery

Global leader in real-life entertainment



Haris Husain
VP Content Discovery

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About Discovery+

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Discovery
HGTV
food network
TLC
ID
animal planet
MAGNOLIA NETWORK
OWN
Travel Channel
SCI
MOTORTREND
COOKING CHANNEL
diy network
the dodo
NOW THIS
AHC
AMERICAN HEROES CHANNEL
GREAT AMERICAN COUNTRY
Discovery Family
DESTINATION AMERICA
Discovery Life
Discovery EN ESPAÑOL
familia Discovery
tvn
EUROSPORT
food kitchen
PGA TOUR
GOLFTV
Golf Digest
Seeker
DSPORT
thrillist
POPSUGAR.
PlaySPORTS NETWORK
GCN GLOBAL CYCLING NETWORK
EUROSPORT 1
EUROSPORT 2
discovery+
hogar HGTV
Discovery Civilization
home&health Discovery
THEATER DiscoveryHD
discovery kids
DKISS
Discovery Shed.
Discovery HISTORY
QUEST
QUEST عربية
QUEST RED
REALLY
joyn
FINE LIVING
9
4
5
6
N TVNORGE
FEM
MAX
VOX
5
9
5
6
FRII
FRISBEE
Giallo
K2
NOVE
Real Time
Discovery world
world DiscoveryHD
Discovery HISTORIA
METRO
Discovery turbo
Discovery turbo XTRA
DMAX
afn asian food network
Discovery Asia
eve
SETANTA SPORTS
fatafeat
Takhayal Entertainment
living. CHANNEL
ChoiceTV
Food.

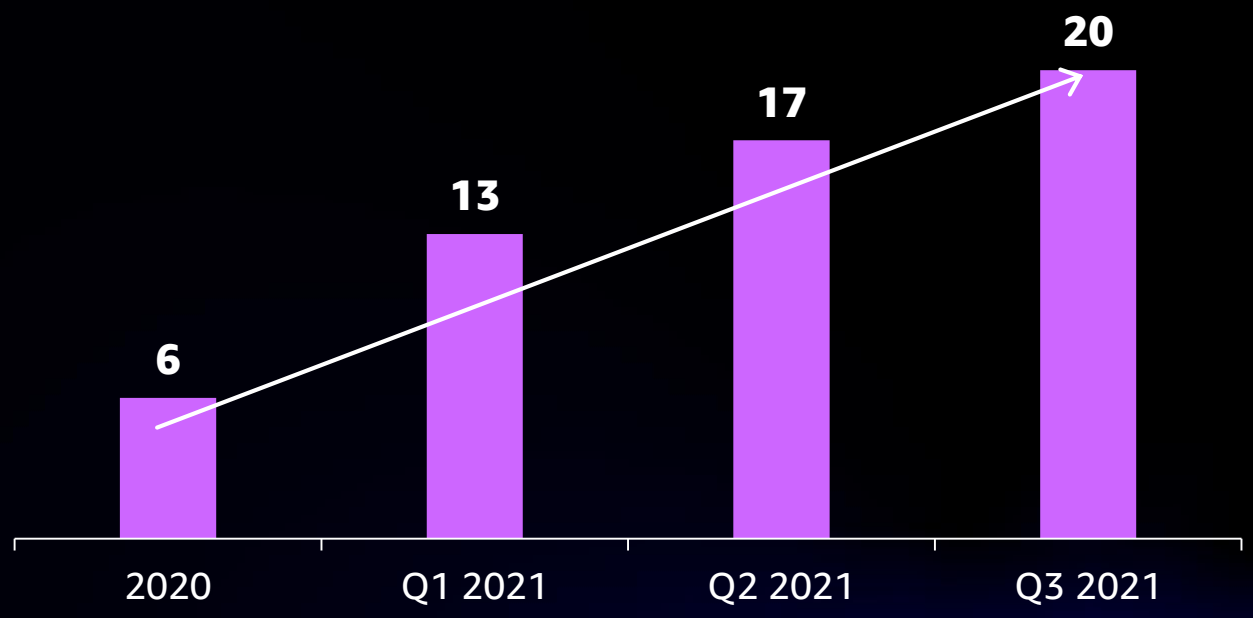
Global direct-to-consumer subscriber base

20M

subscribers as of September 2021

14%

Compound monthly growth rate



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Why personalization?

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Help consumers find delightful content to watch every time they visit

… so they stay with us for a long time

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Why is this a challenge?





Keep consumers engaged with our service

Help them find shows they will like

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Can humans handle this alone?

20M+
global subscribers

220+
countries and territories

50+
languages

- Experience automated for management at scale
- Personalized to drive individual engagement
- Editors curate for special events like Shark Week, Thanksgiving

Utilize the power of humans & machines

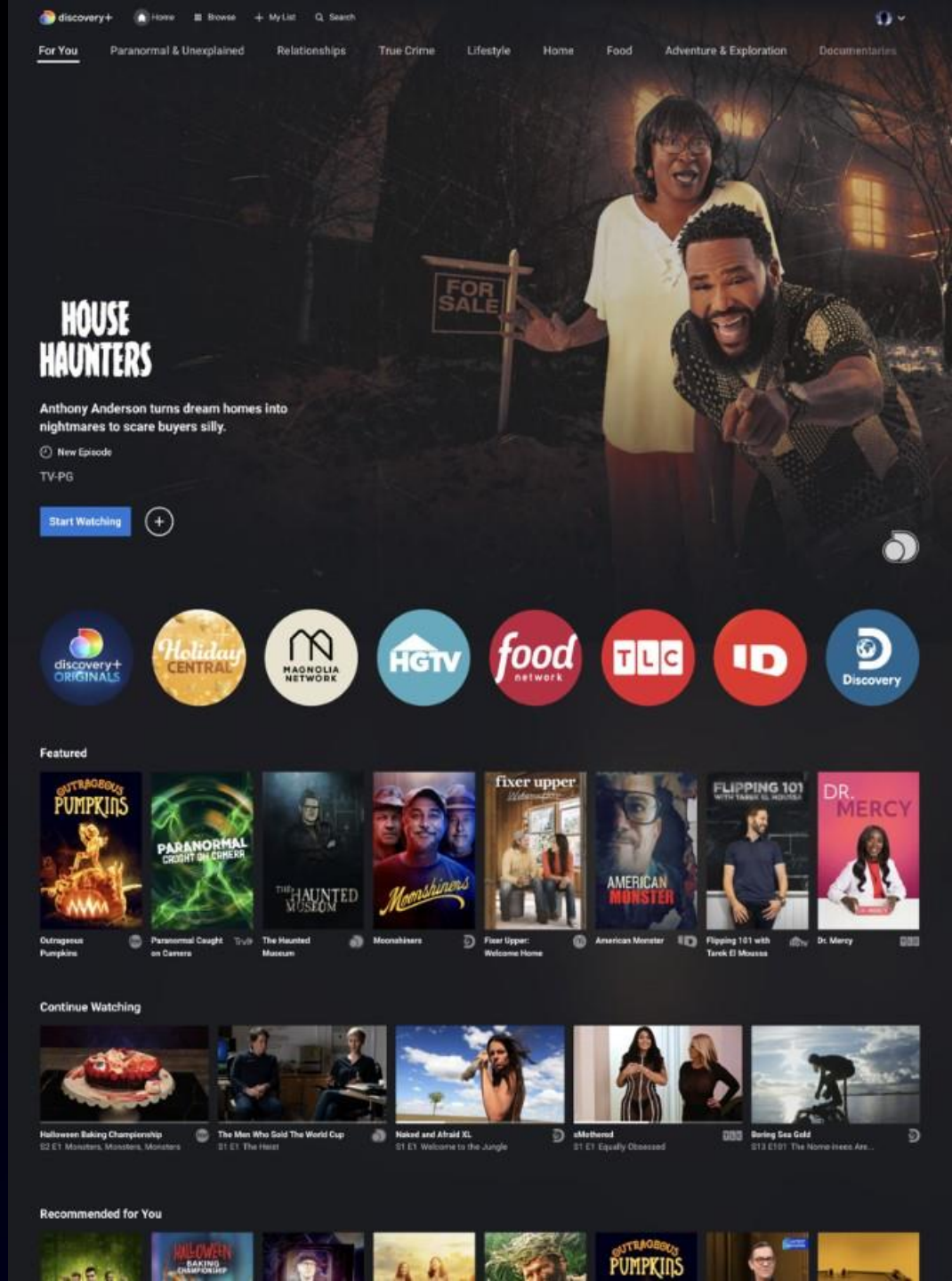
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What do we personalize?

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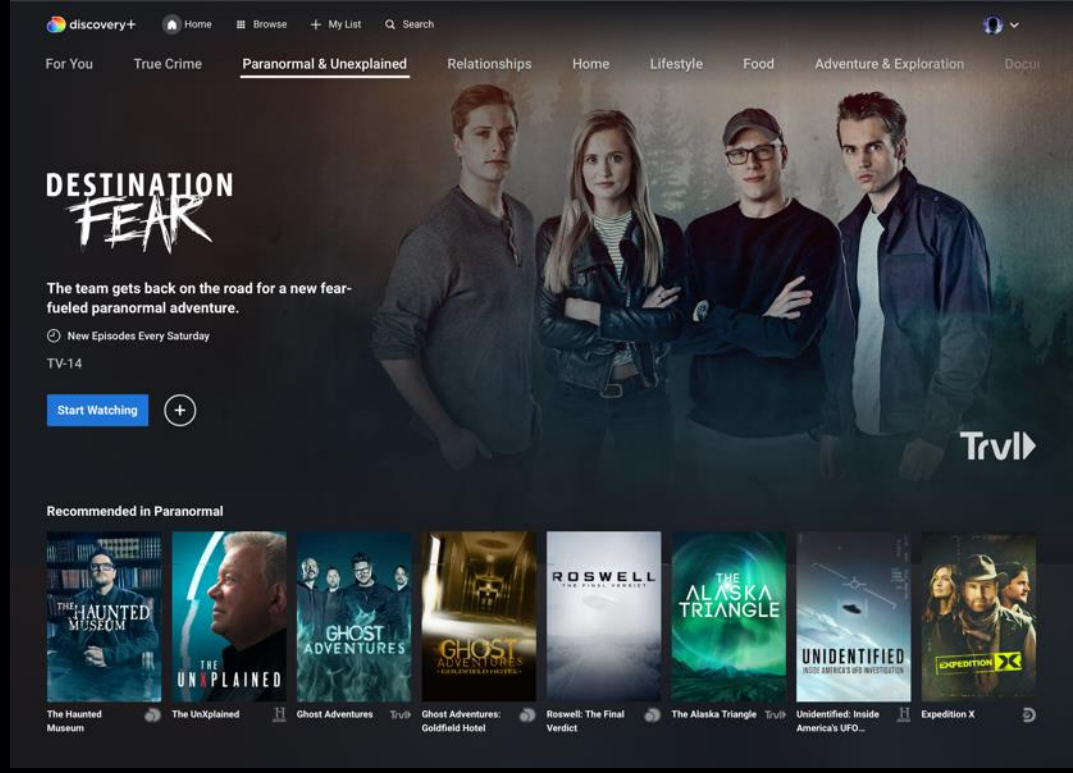
For you

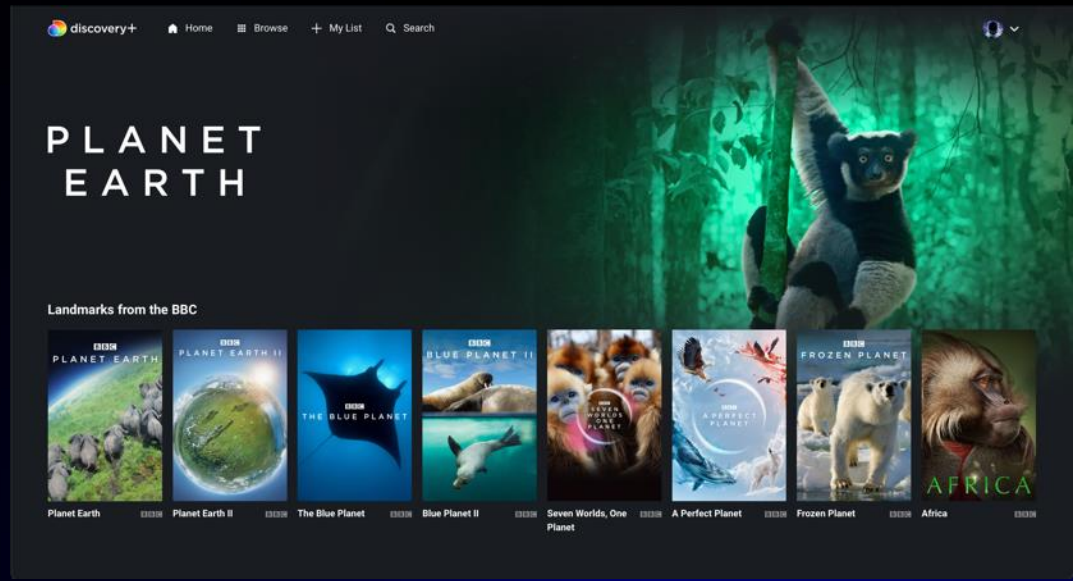
Help everyone quickly find something they would like to watch



Genre and brand

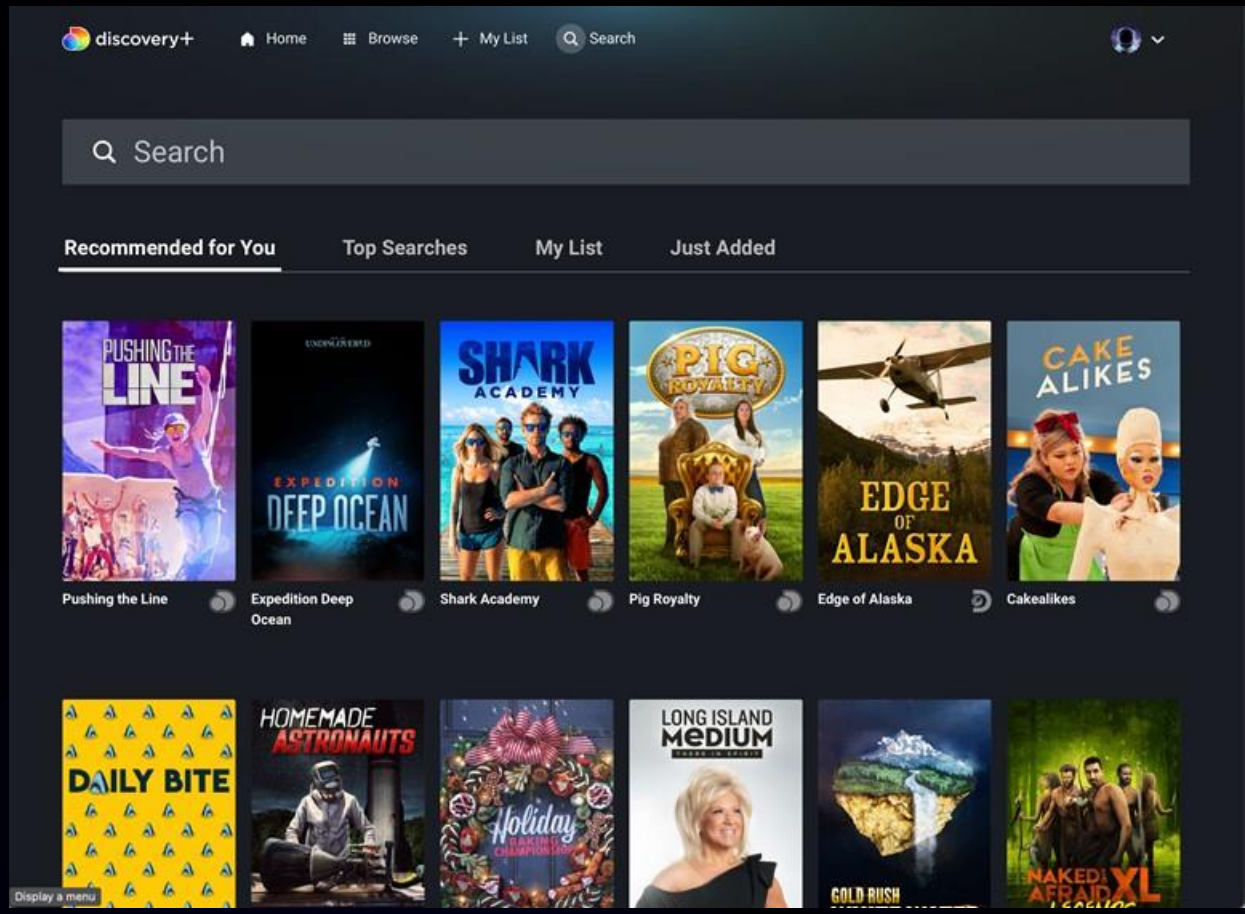
Help those browsing our selection find something they like





Search

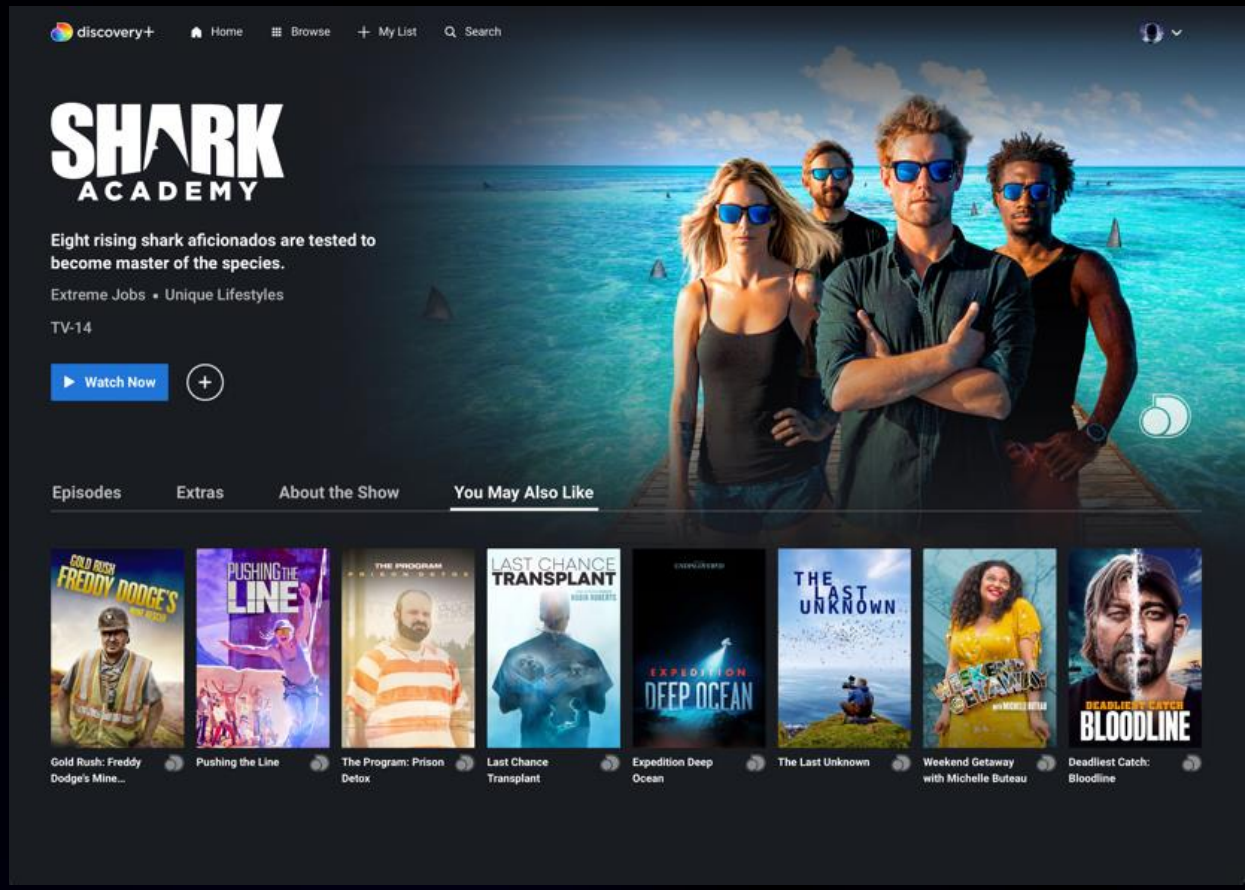
Help explorers find something they would like, sometimes even without typing anything!



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Show

Help consumers find the next interesting show easily



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more to go...

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Why Amazon Personalize?

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Starting small with big aspirations

- "Few" months to launch our flagship product
- Build the team and the product simultaneously
- Be fast; lots to catch up on vs. the marketplace

CONCLUSION

Work with AWS for time to market

- Experience in personalization space
- State-of-the-art offerings
- Track record of durability
- Stellar customer support

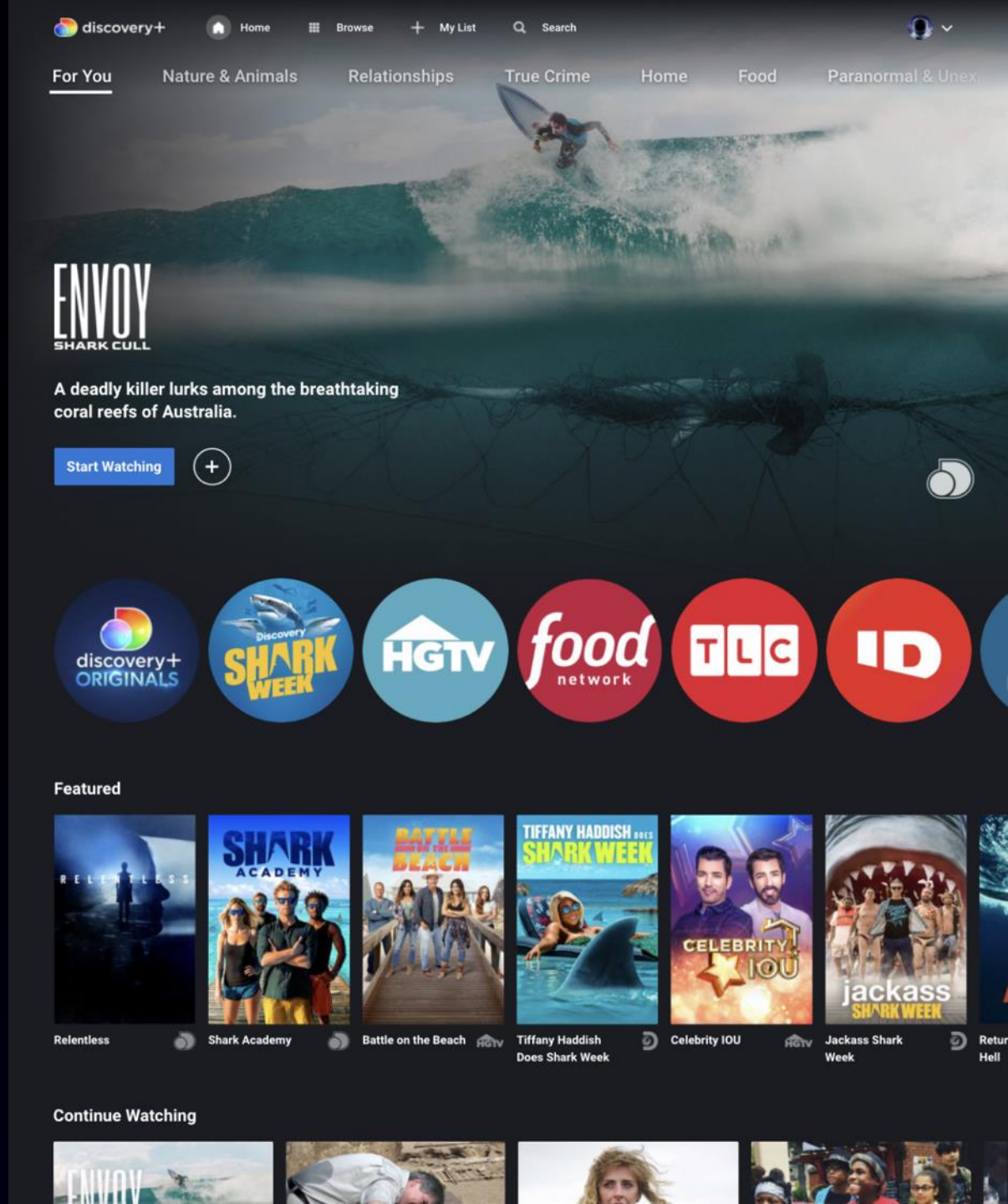
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Outcome

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- Launched recommendations with D+ US
- Near-real-time service
- 3–4x minutes/impression compared to other carousels, driving significant portion of hours watched on app
- Drive engagement with more of the catalog than Trending, Featured, etc.
- Since then, have launched in PH, CA, BR, and more coming!



Productivity

6,000+
engineer hours saved

6 months
time to market

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Journey with AWS



Helped set up initial solutions, data pipelines



Enhancements to recipes to better serve media & entertainment

New recipes that enable new scenarios

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Where next?

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Lots to still solve

Cold start – new users, countries, content, devices

New similar items recipe to identify thematic similarities for new content

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Engagement – new personalized features to help consumers find delightful content

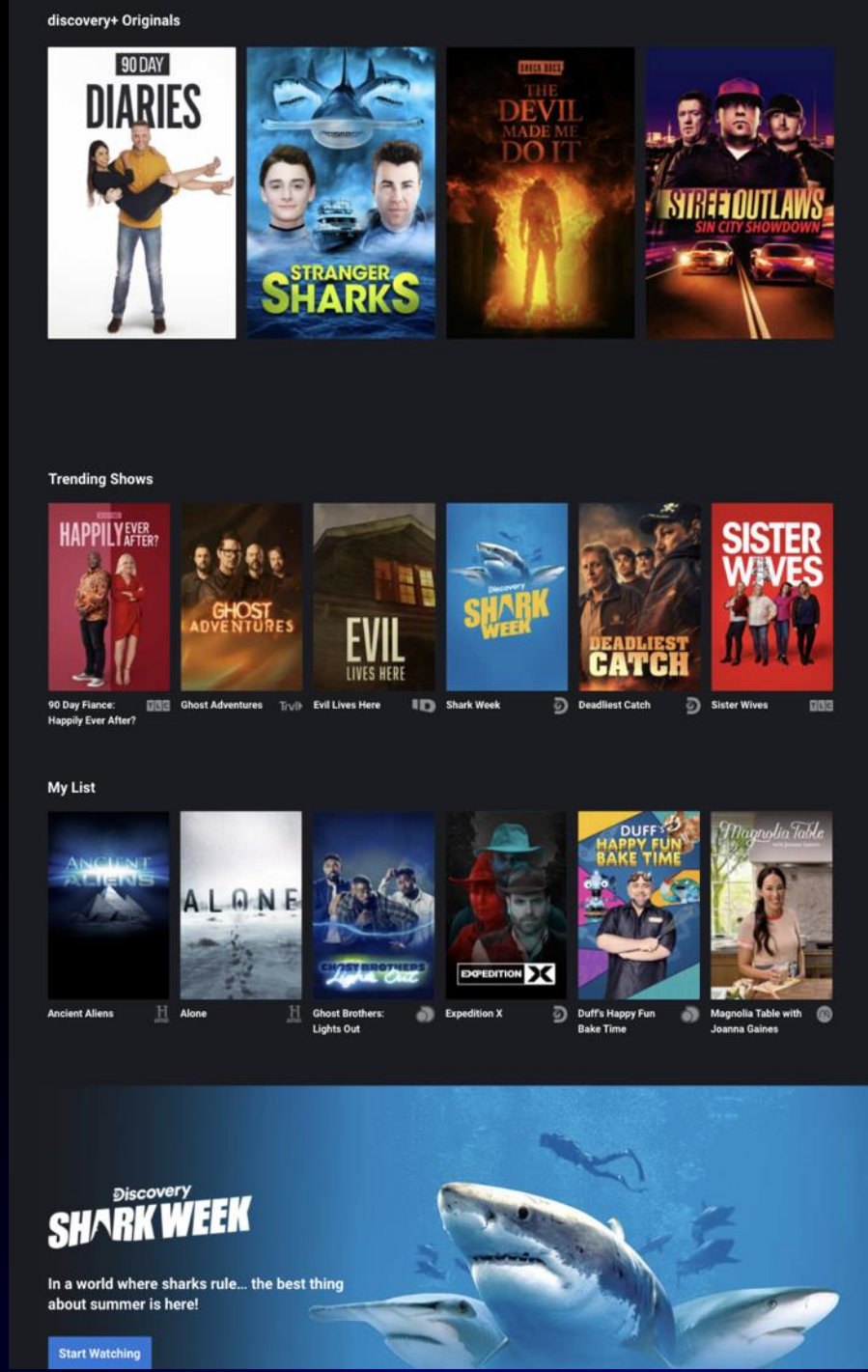
Media & entertainment-**optimized recommenders**

Promos and marketing – improve appeal and reach

User segmentation to tailor messaging and prospect new content

---

Content ROI – have consumers engage with more of our catalog (the tail)



Thank you!

To learn more visit: aws.amazon.com/personalize

Ankur Mehrotra (he/him)
linkedin.com/in/mehrotraankur

Haris Husain (he/him)
linkedin.com/in/harishusain

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