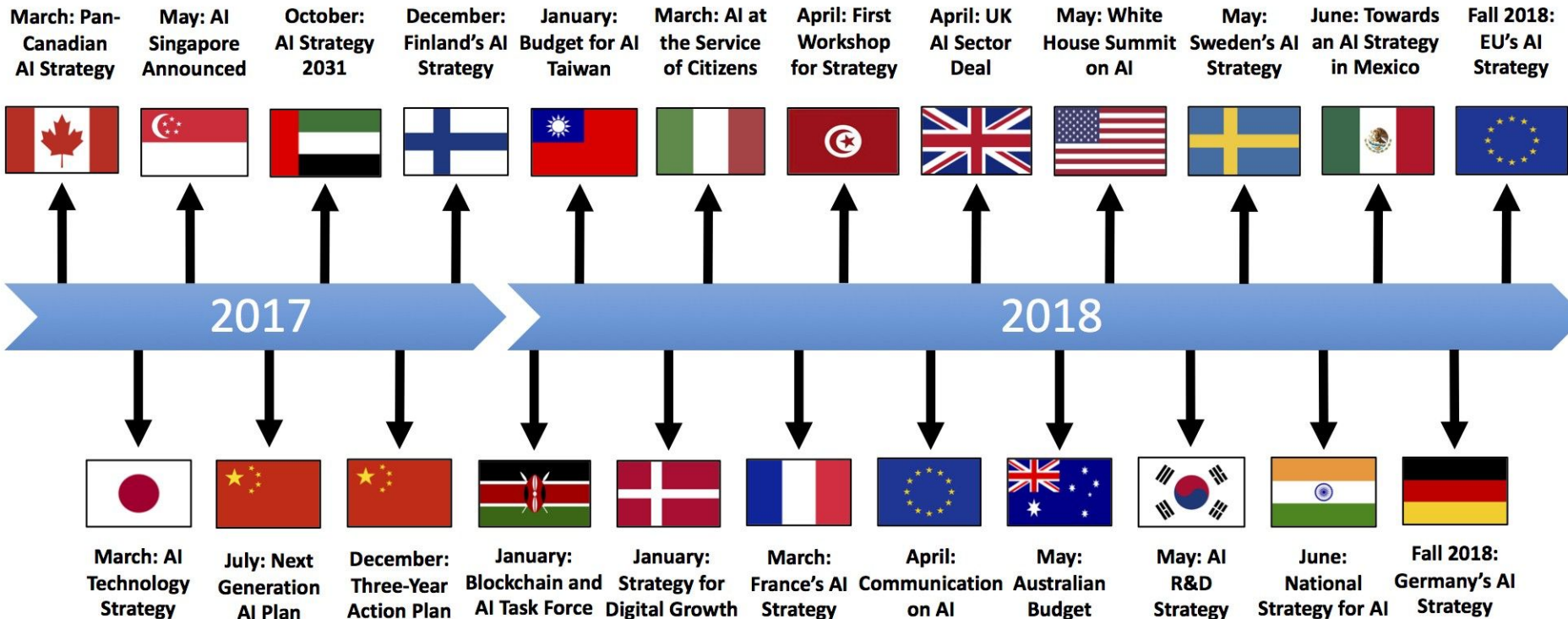


An aerial view of the Amazon Spheres in Seattle, showing three large glass domes with a complex geometric pattern. The spheres are surrounded by a city street with cars and several tall skyscrapers in the background. Construction cranes are visible, indicating ongoing development. A black banner with the text "amazon AI Revolution" is overlaid at the bottom.

amazon AI Revolution

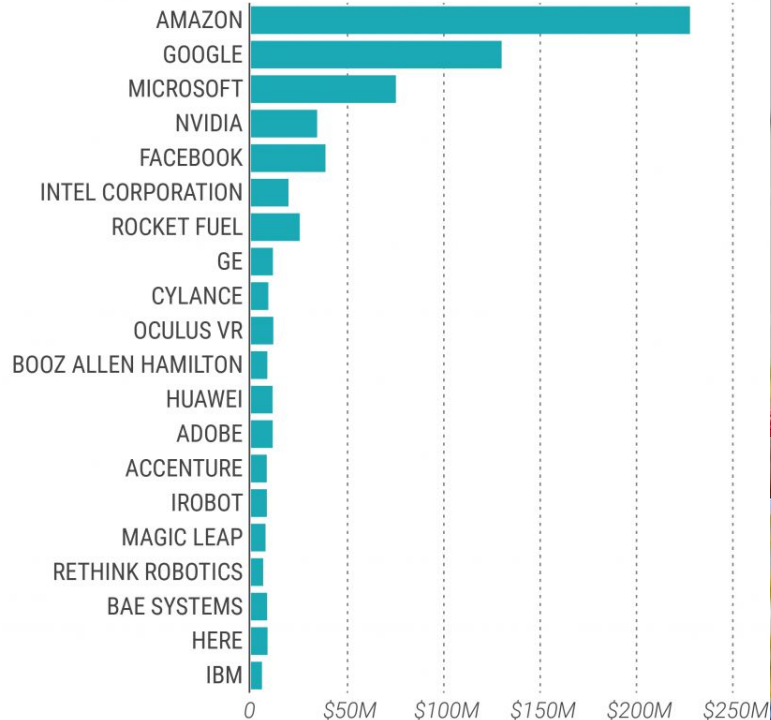
The Future of our Economy
Depends on our Success in
Artificial Intelligence

Artificial Intelligence Strategies



Top 20 Companies Investing in AI Talent

No other company comes close to matching the \$227.8 million that hiring and salary firm Paysa estimates Amazon will spend hiring artificial intelligence talent.



Start with the end first

Amazon Alexa

Alexa, Add Carrots to my order

Alexa, Order LeBron James's shoes

Alexa, Play classical music

Alexa, Announce it's Dinner time



amazon { Path to Customer-Serving Innovation }

KEY ACQUISITIONS IN BILLIONS

● CASH ● STOCK U UNDISCLOSED



At \$13.7B in cash, Whole Foods is Amazon's boldest acquisition yet. The move signals Amazon's ambition, which is to become a transcendent brand that touches many aspects of daily life.



Kiva Systems became Amazon Robotics, a subsidiary that manufactures mobile robotic fulfillment systems for Amazon's array of warehouses.

NASH HOLDINGS LLC

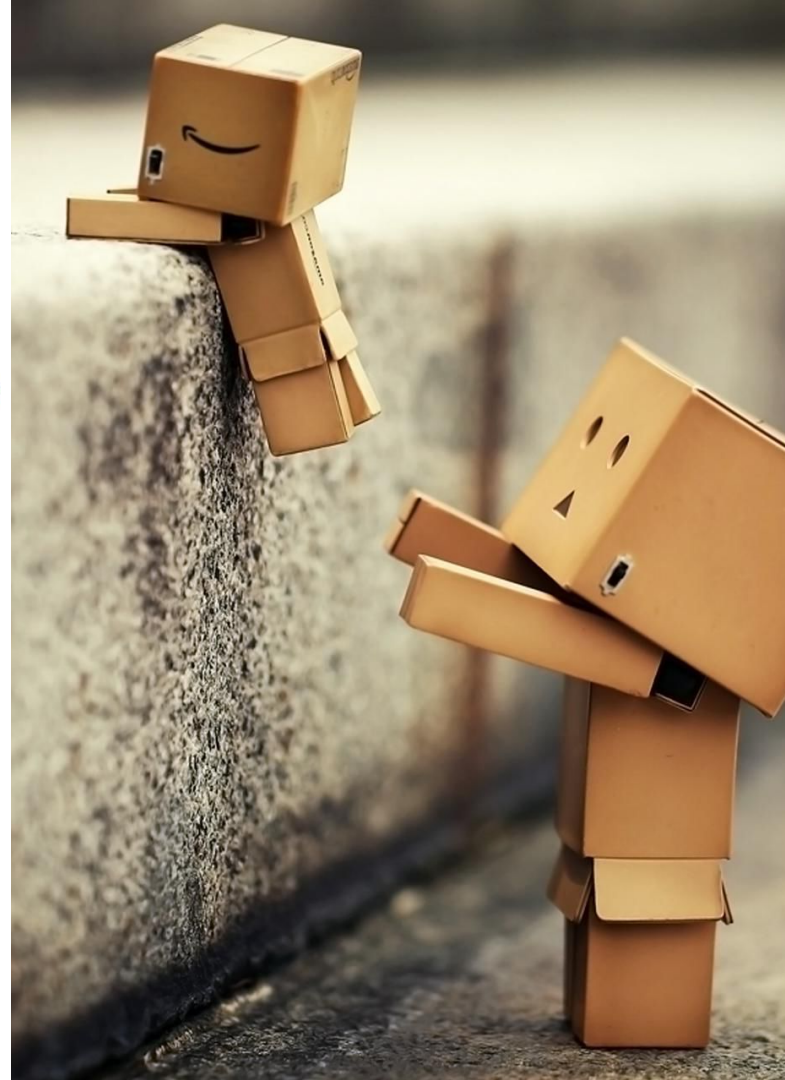
KEY ACQUISITIONS IN BILLIONS

Washington Post

\$0.25

The Washington Post

In 2013, Bezos locked up one of the world's most trusted publishers for \$250 million, and has big plans to redefine the company through the use of technology.





amazonrobotics

AIM301

Build intelligent applications quickly with AWS AI services

Randall Hunt
Senior Technical Evangelist
Amazon Web Services

Nick Walsh
Technical Evangelist
Amazon Web Services

10,000+ Customers

More machine learning happens on
AWS than anywhere else.

intuit

Capital One

SIEMENS

FICO™

KIA

Formula 1™

pwc

tinder

yelp

NFL

NETFLIX

Pinterest

81%

of deep learning projects
in the cloud run on AWS

aws

re:Invent 2018 Products Solutions Pricing Documentation Learn Partner Network AWS Marketplace Explore More

Contact Sales Support English My Account

Create an AWS Account

Machine Learning on AWS

Overview ML Application Services ML Platform Services Deep Learning on AWS ML Topics ML Blog Partners

Recommendations

Personalize experiences for your customers with the same recommendation technology used at Amazon.com.

[AMAZON PERSONALIZE »](#)

Forecasting

Build accurate forecasting models based on the same machine learning forecasting technology used by Amazon.com.

[AMAZON FORECAST »](#)

Image and Video Analysis

Add image and video analysis to your applications to catalog assets, automate media workflows, and extract meaning.

[AMAZON REKOGNITION »](#)

Advanced Text Analytics

Use natural language processing to extract insights and relationships from unstructured text.

[AMAZON COMPREHEND »](#)

Document Analysis

Automatically extract text and data from millions of documents in just hours, reducing manual efforts.

[AMAZON TEXTTRACT »](#)

Voice

Turn text into lifelike speech to give voice to your applications.

[AMAZON POLLY »](#)

Conversational Agents

Easily build conversational agents to improve customer service and increase contact center efficiency.

Translation

Expand your reach through efficient and cost-effective translation to reach audiences in multiple languages.

Transcription

Easily add high-quality speech-to-text capabilities to your applications and workflows.



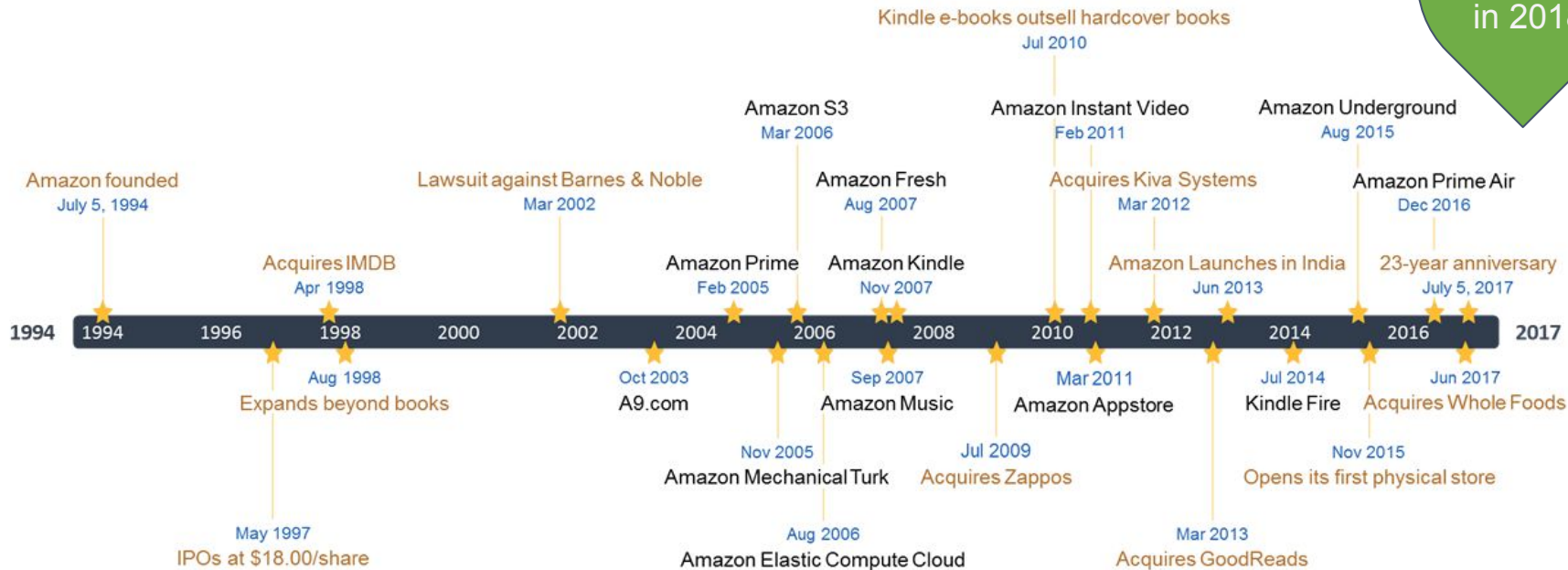
All ▾

{ Path to Customer-Serving Tech }



\$23 B
R&D
in 2018

★ Company milestones ★ Product launches



Office **TIMELINE**

How?



Innovation Model



Jeff Bezo's Big Mandate

((according to Steve Yegge))

1) All teams will henceforth expose their data and functionality through service interfaces.



Jeff Bezo's Big Mandate

((according to Steve Yegge))

2) Teams must communicate with each other through these interfaces.



Jeff Bezo's Big Mandate

((according to Steve Yegge))

3) There will be no other form of interprocess communication allowed: no direct linking, no direct reads of another team's data store, no shared-memory model, no back-doors whatsoever. The only communication allowed is via service interface calls over the network.



Jeff Bezo's Big Mandate

((according to Steve Yegge))

4) It doesn't matter what technology they use. HTTP, Corba, Pubsub, custom protocols -- doesn't matter. Bezos doesn't care.



Jeff Bezo's Big Mandate

((according to Steve Yegge))

5) All service interfaces, without exception, must be designed from the ground up to be externalizable. That is to say, the team must plan and design to be able to expose the interface to developers in the outside world. No exceptions.



Jeff Bezo's Big Mandate

((according to Steve Yegge))

6) Anyone who doesn't do this will be fired.



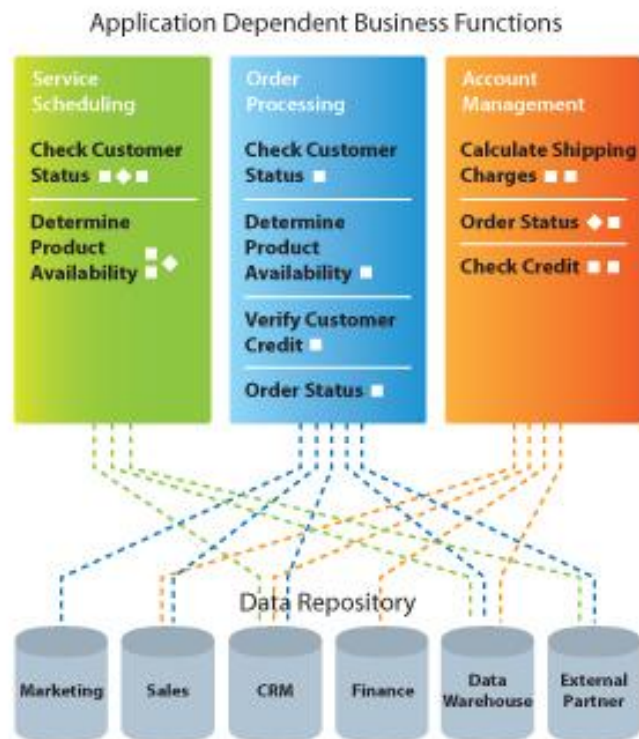
Jeff Bezo's Big Mandate

((according to Steve Yegge))

7) Thank you; have a nice day!

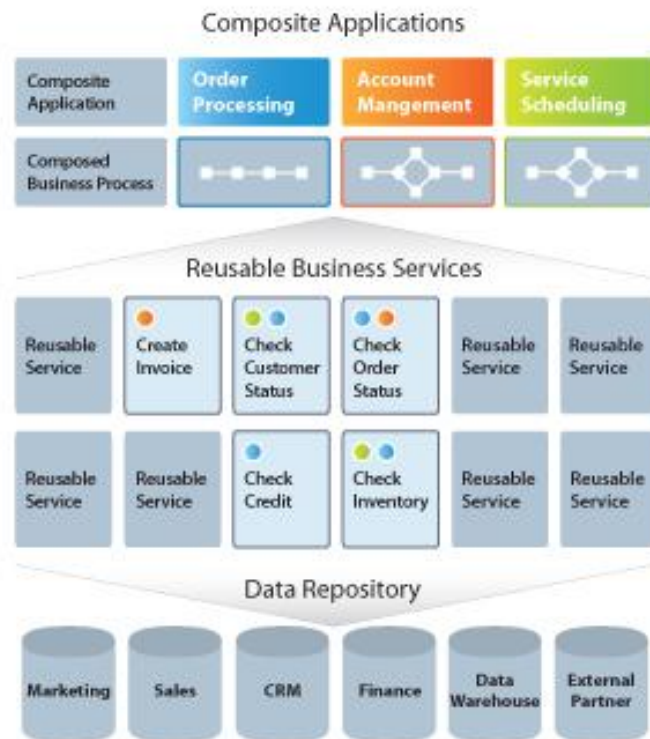
Before SOA

Closed - Monolithic - Brittle



After SOA

Shared services - Collaborative - Interoperable - Integrated





Business Model

Step 1 Change the Business Model

Artificial Intelligence

Blockchain

Big Data

Search

Recommendation

Security

Advertising



Step 1 Change the Business Model

Artificial Intelligence as a Service

Blockchain as a Service

Big Data as a Service

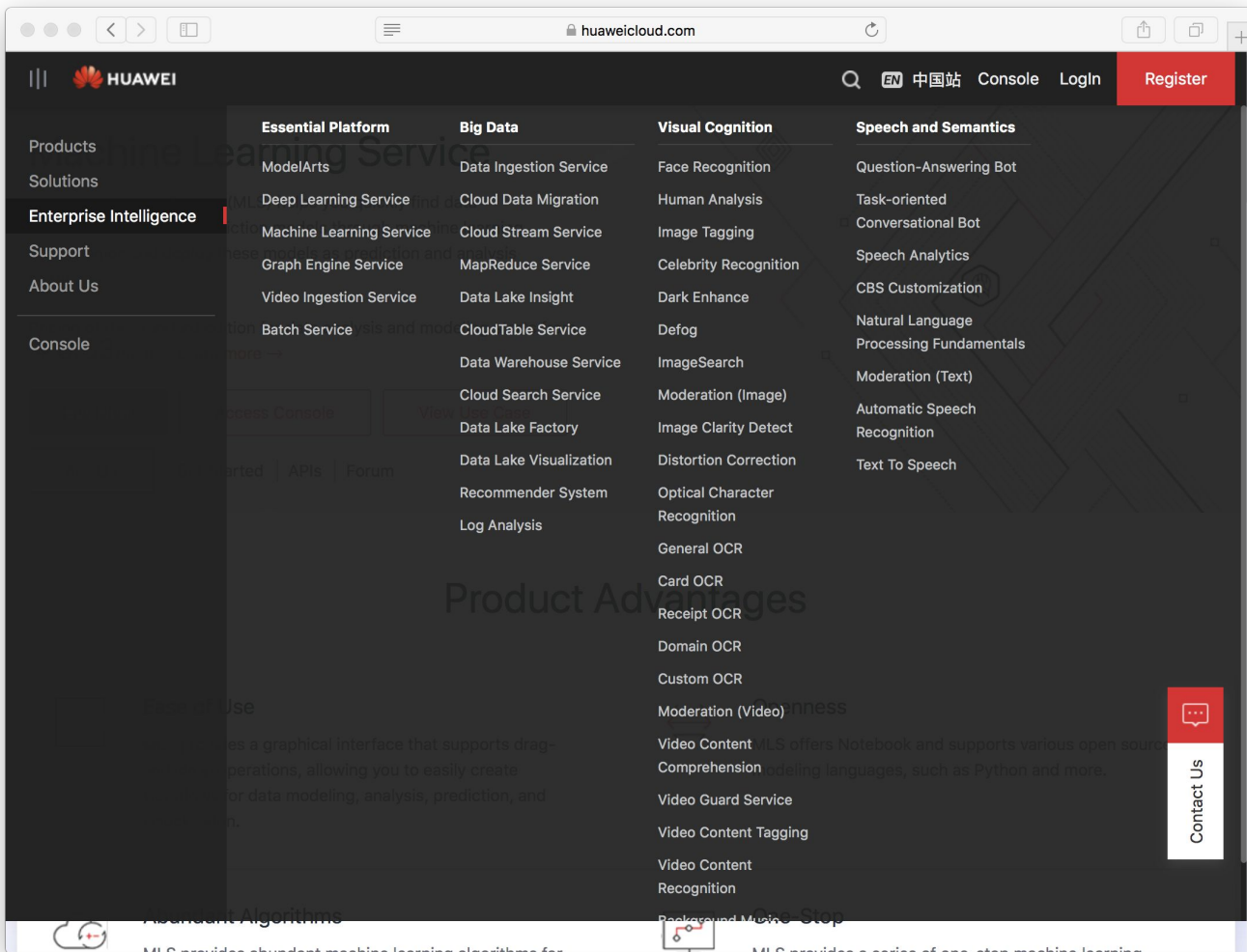
Search as a Service

Recommendation as a Service

Security as a Service

Advertising as a Service





The
Economist

The battle for Baghdad
Are the Gandhis finished?
Don't raise interest rates
China's Berkshire Hathaway
Dope is the new pizza

JUNE 21ST-27TH 2014

Economist.com

How far will Amazon go?



amazon { Path to Customer-Serving Innovation }

“ Never before has a company been worth so much for so long while **making so little money**: 92% of its value is due to **profits expected after 2020**.

Amazon has an **unusual approach to time** (resolute focus on distant horizon) and the sheer **breadth** of its activities. ”



Patents and University Engagement



MAX-PLANCK-GESELLSCHAFT

Invest: \$1.5 million, 2017, Cyber Valley
Project: AI, Robotics, Machine learning, and Computer Vision projects
100 high-skilled jobs in machine learning at Tuebingen's Max Planck
Society campus

amazon research awards

(ARA) program offers awards of up to \$80,000 to faculty members on PhD students or post docs

Areas :

- **Computer vision, Fairness in AI**
- **Knowledge management and data quality**
- **ML algorithms and theory**
- **Natural language processing, Online advertising**
- **Operations Research and optimization**
- **Personalization, Robotics**
- **Search and information retrieval**
- **Security, privacy and abuse prevention**

In 2018-2020, Amazon will dedicate (500,000 \$) of (ARA) annually, to the Max Planck Society

amazon research awards



Arash Ajoudani

**Effective, Ergonomic, and
Lean Logistics
through Reconfigurable
and
Mobile Collaborative
Robots**



Gholamreza Haffari

**Effective Multi-Task
Learning
for Neural Machine
Translation**



Amin Karbasi

**Leveraging
Combinatorial
Structures for
Scalable Learning**



Amin Saberi

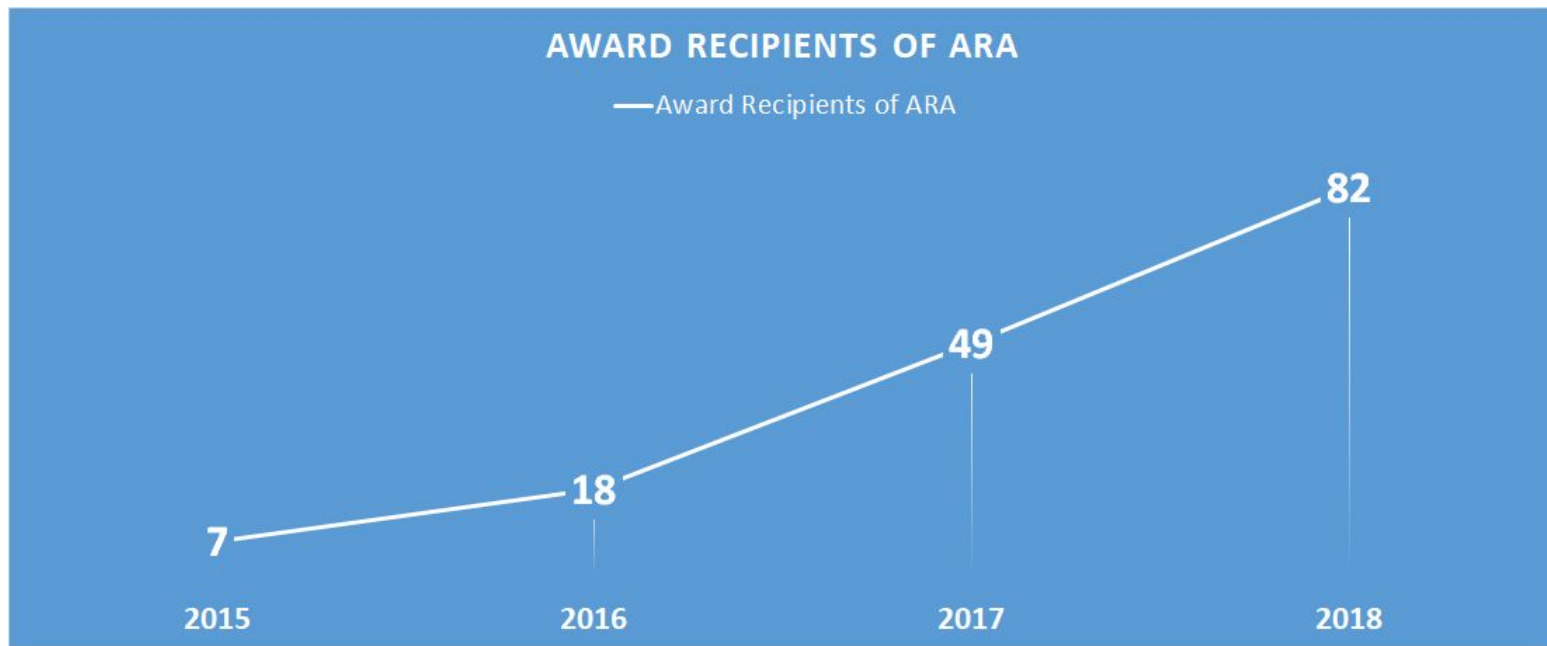
**Advertising on Amazon,
an algorithmic
perspective**



Dorsa Sadigh

**Active Learning of
Teleoperation
Maps**

amazon research awards



amazon research awards

amazon research awards

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amazon research awards

Deadline,

Submission Requirements : Maximum of 4 pages (single column, minimum 10 pt font), references, CV, CV of the leading faculty member, A proposed budget not exceeding \$80,000 in cash and \$20,000 in AWS Promotional Credits, Motivation for a specific research task.

Thank you for your interest in Amazon Research Awards. The application form will become available on **September 10**, with the submission deadline of **October 4, 2019**.



Patent

Funded 1995 – IPOs at \$18/share, valuing the company at \$438M with 80K users 1997	
2018 Patent Grants	2035
2018 Rank	12
Patents at IPO	4 High Impact

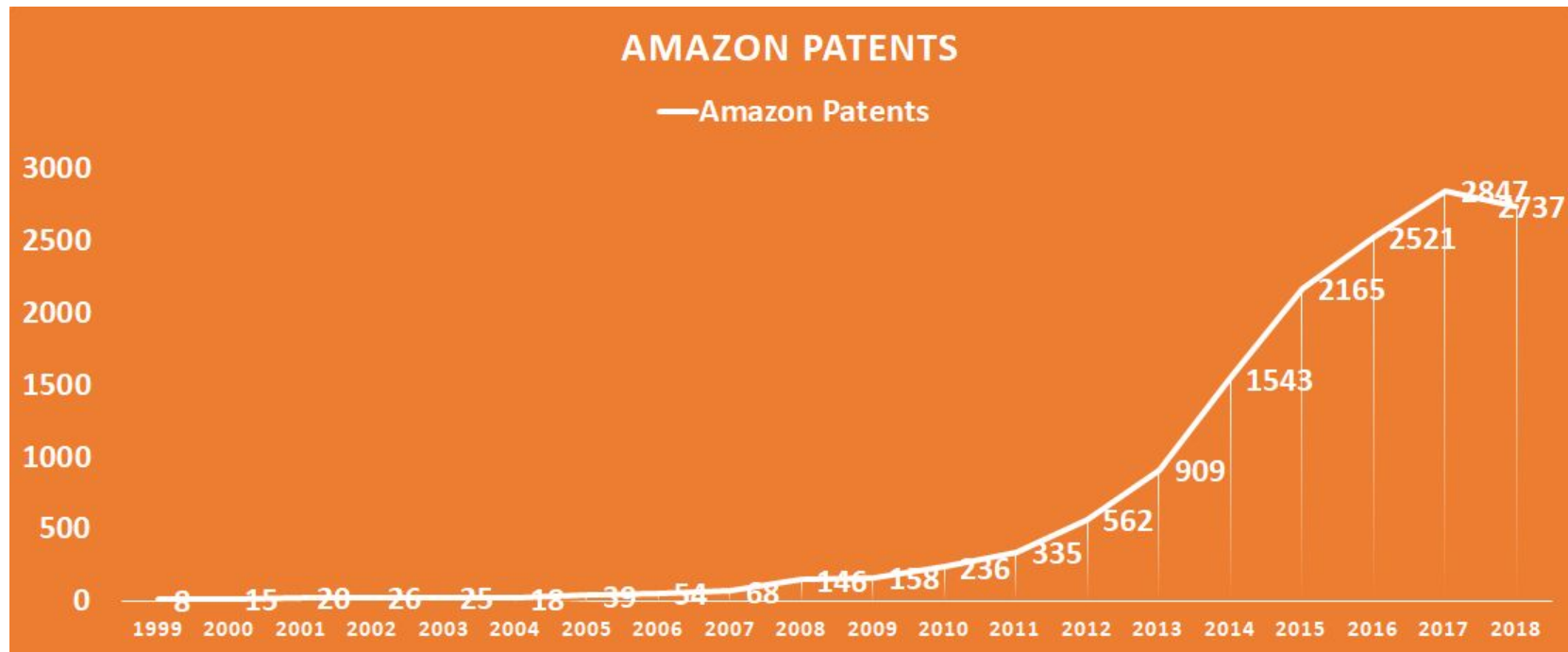


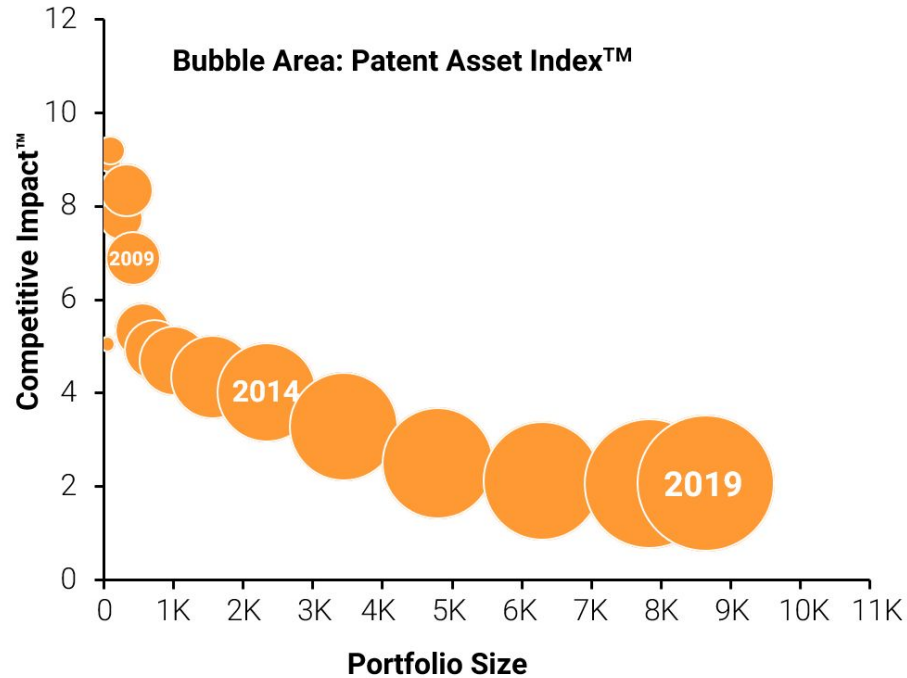
Patent

Subject of Patents at IPO	Inventor	Date
SECURE METHOD AND SYSTEM FOR COMMUNICATING A LIST OF CREDIT CARD NUMBERS OVER A NON-SECURE NETWORK	BEZOS JEFFREY	1996-12-05
ALIVE FISH TRANSPORTATION SYSTEM	Applicant: AMAZON MARINE KK	1994-03-22
FILTER MATERIAL FOR WATER PURIFYING APPARATUS	AMAZON MARINE KK	1994-01-25
CONTAINER FOR TRANSPORTING ALIVE FISH OR THE LIKE	AMAZON MARINE KK	1993-07-20

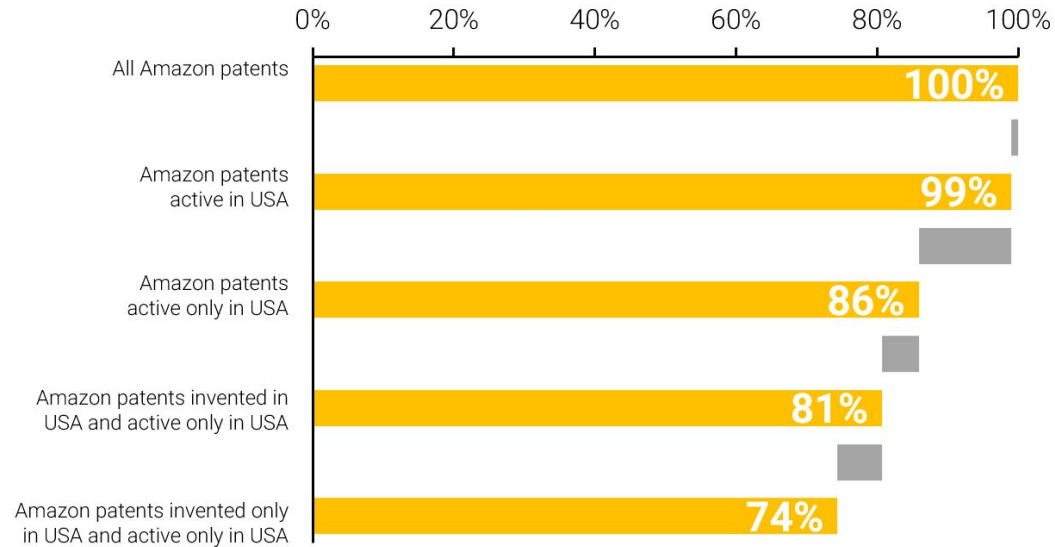


Patent



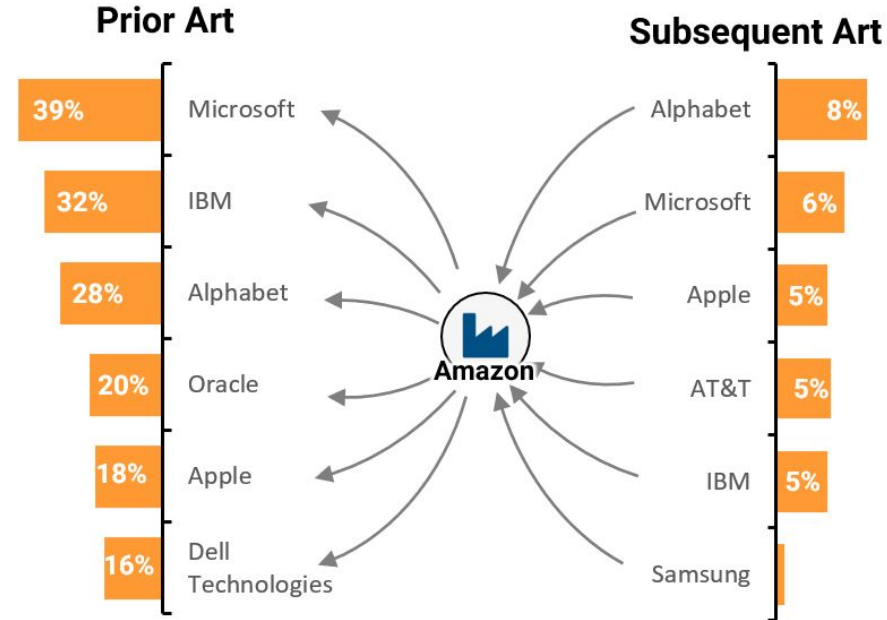


Development of the active Amazon patent portfolio. Data as on 4th July 2019.
Source: PatentSight Business Intelligence Platform www.patentsight.com

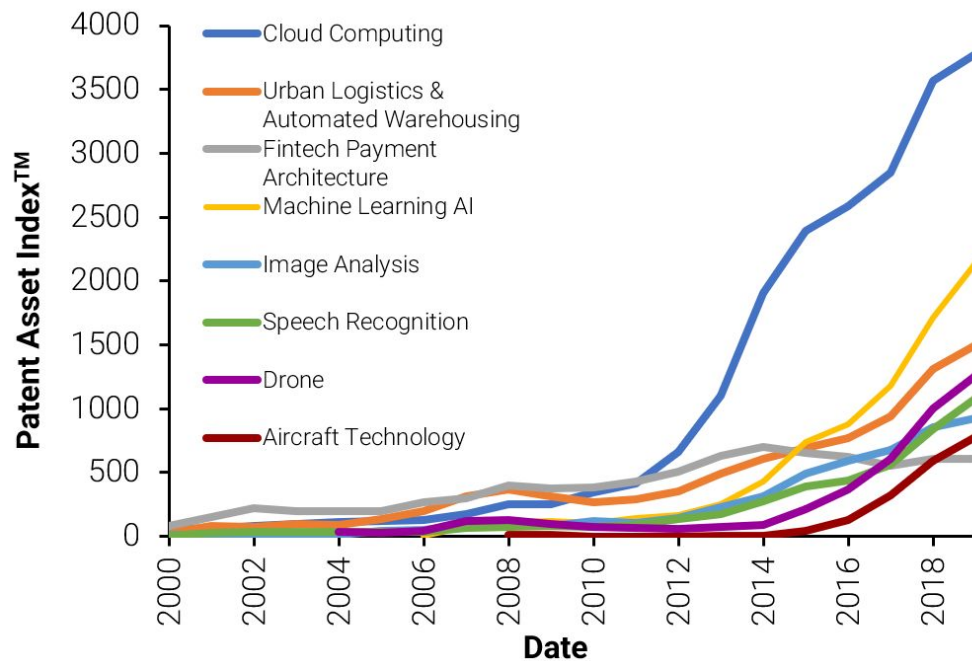


Portfolio Size (%)

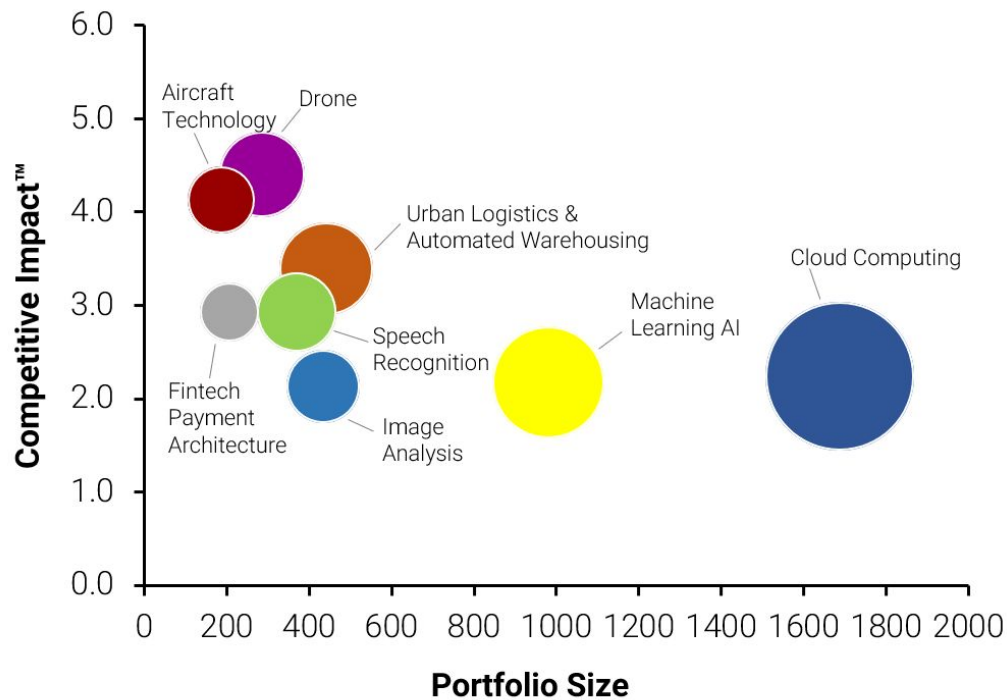
Share of total portfolio size of Amazon by protected and inventor country.
Data as on 4th July 2019. Source: PatentSight Business Intelligence Platform
www.patentsight.com



Share of Amazon's total Patent Asset Index citing competitors, and share of competitors total Patent Asset Index citing Amazon. Data as on 4th July 2019.
Source: PatentSight Business Intelligence Platform www.patentsight.com



Active Portfolio Strength of Amazon in selected technology fields. Data as on 4th July 2019. Source: PatentSight Business Intelligence Platform www.patentsight.com



Active Portfolio of Amazon in selected technology fields. Data as on 4th July 2019.
Source: PatentSight Business Intelligence Platform www.patentsight.com