

Schroders

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Inside Architas

Beyond the numbers

October 25

Data Science at Schroders

Ben Wicks, Head of Data Insights and
Research Innovation

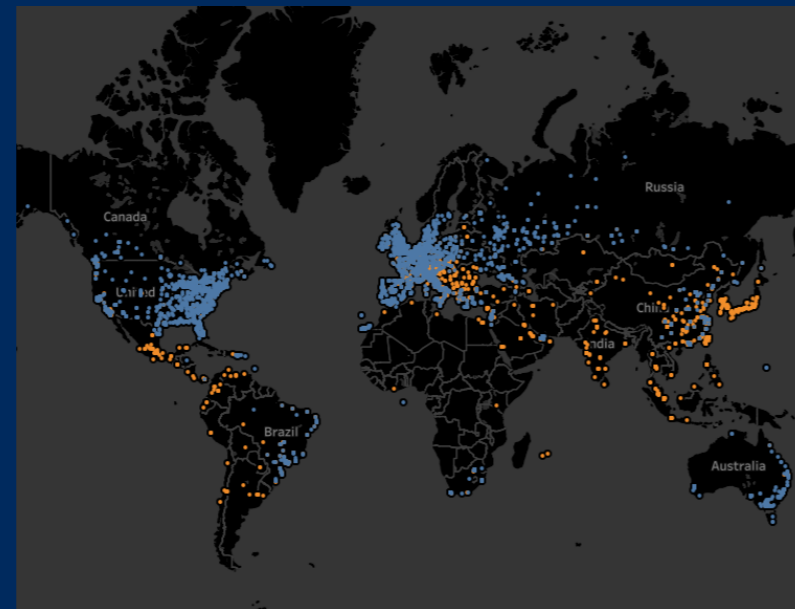
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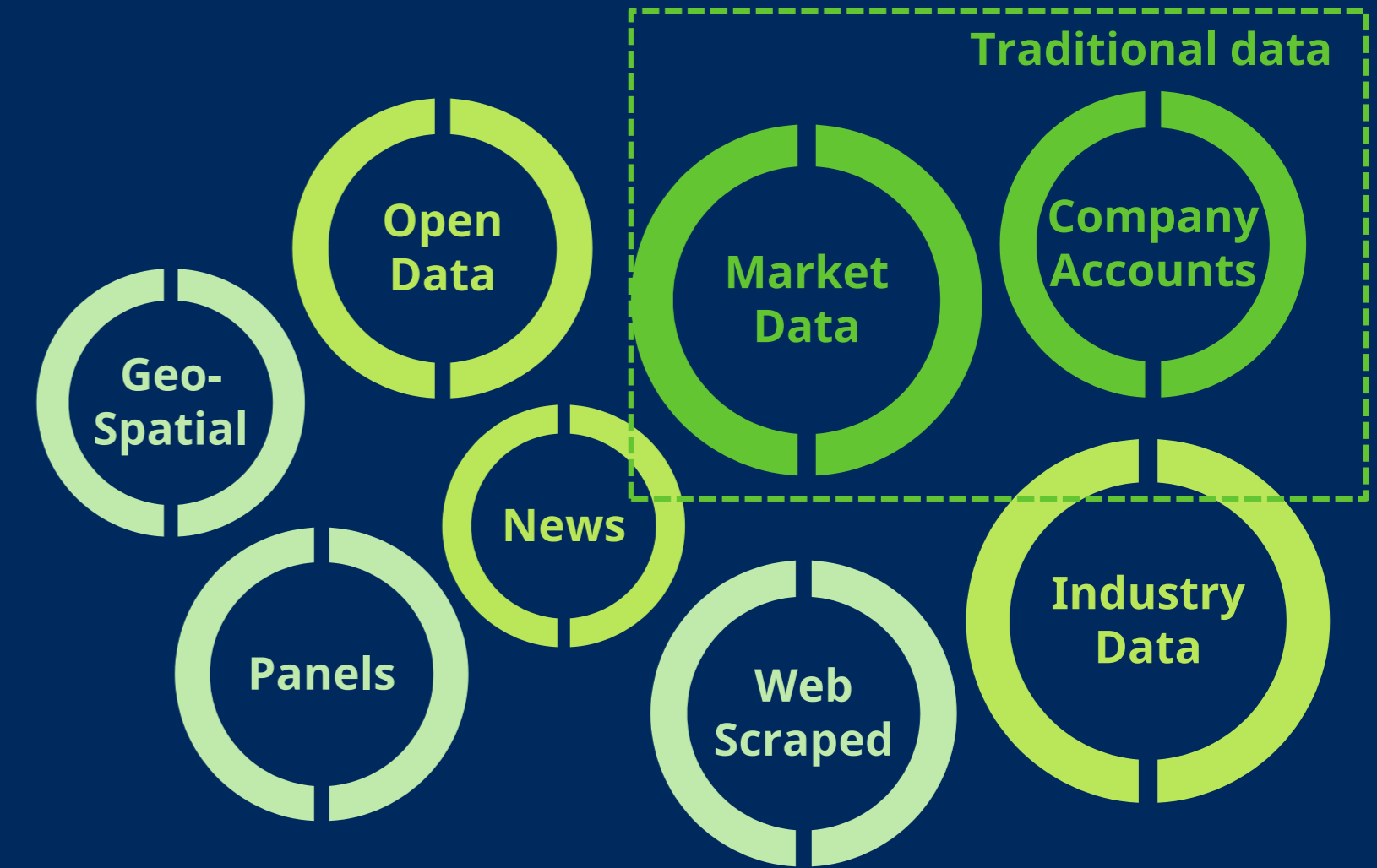
Schroders Data Insights Unit



What's driving the data deluge?



Alternative data



Increasing digitalisation and transparency

QB House, Shibuya District



Real time data: Number of customers in any QB House shop in Japan



Magnet by Shibuya Marukyu
MAGNET by SHIBUYA 109 shop
Number of waiters: 0 people / number of active seats: 2 seats

Signals · Number of waiters · Number of active seats may differ from the actual store situation, so please be forewarned.

Street address	1-23-10 Jinnan, Shibuya-ku , Tokyo 150-0041 Tokyo MAGNET by SHIBUYA 109 B2F
Nearest station	Shibuya Station
access	Shibuya station underground ticket gate (Hachiko ticket gate) Next MAGNET by SHIBUYA basement 2 floor.
business hours	Weekdays: 10: 00-20: 00 (reception end 20: 00) Saturday: 10: 00-20: 00 (reception end 20: 00) Sundays and public holidays: 10: 00-20: 00 (reception end 20: 00)
Parking Lot	None

Source: Schroders Data Insights Unit. Securities shown are for illustrative purposes only and should not be viewed as a recommendation to buy or sell.

The Data Insights Unit

Driving data for fundamental insights



Going beyond what is currently available



Making sense of data so our investors can act



Working in partnership with investment teams

An aerial night view of a city, likely Dubai, featuring a complex network of highways and skyscrapers. A large, semi-transparent circular graphic is centered over the image, containing a stylized 'D' shape. The background is dark blue with a network of glowing white lines and nodes, suggesting a data or communication network. The text 'Data in action' is written in a clean, white, sans-serif font on the left side of the image.

Data in action

Geospatial data

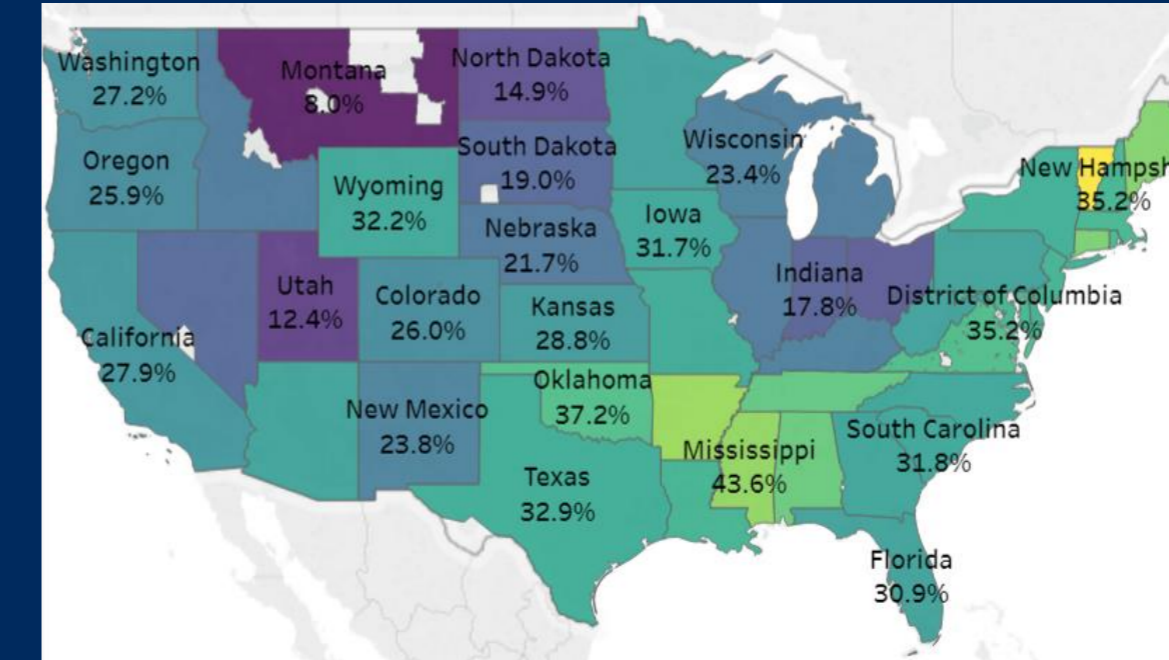


Mapping out the potential

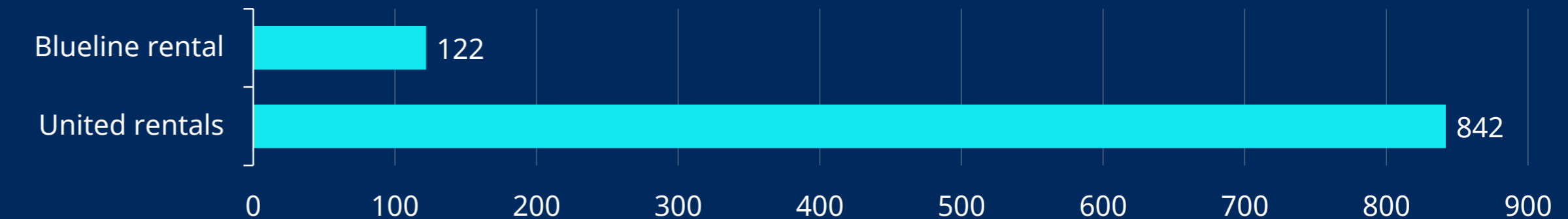
BlueLine: an attractive proposition for a merger based on number and location of estates

September 2018: **United Rentals announced the acquisition of BlueLine.** Merger predicted based on analysis of location and number of construction starts

Market share for merger of United Rentals with BlueLine Rental



Store Count



Source: Schroders Data Insights Unit, September 2018. Securities shown are for illustrative purposes only and should not be viewed as a recommendation to buy or sell.

Carrefour



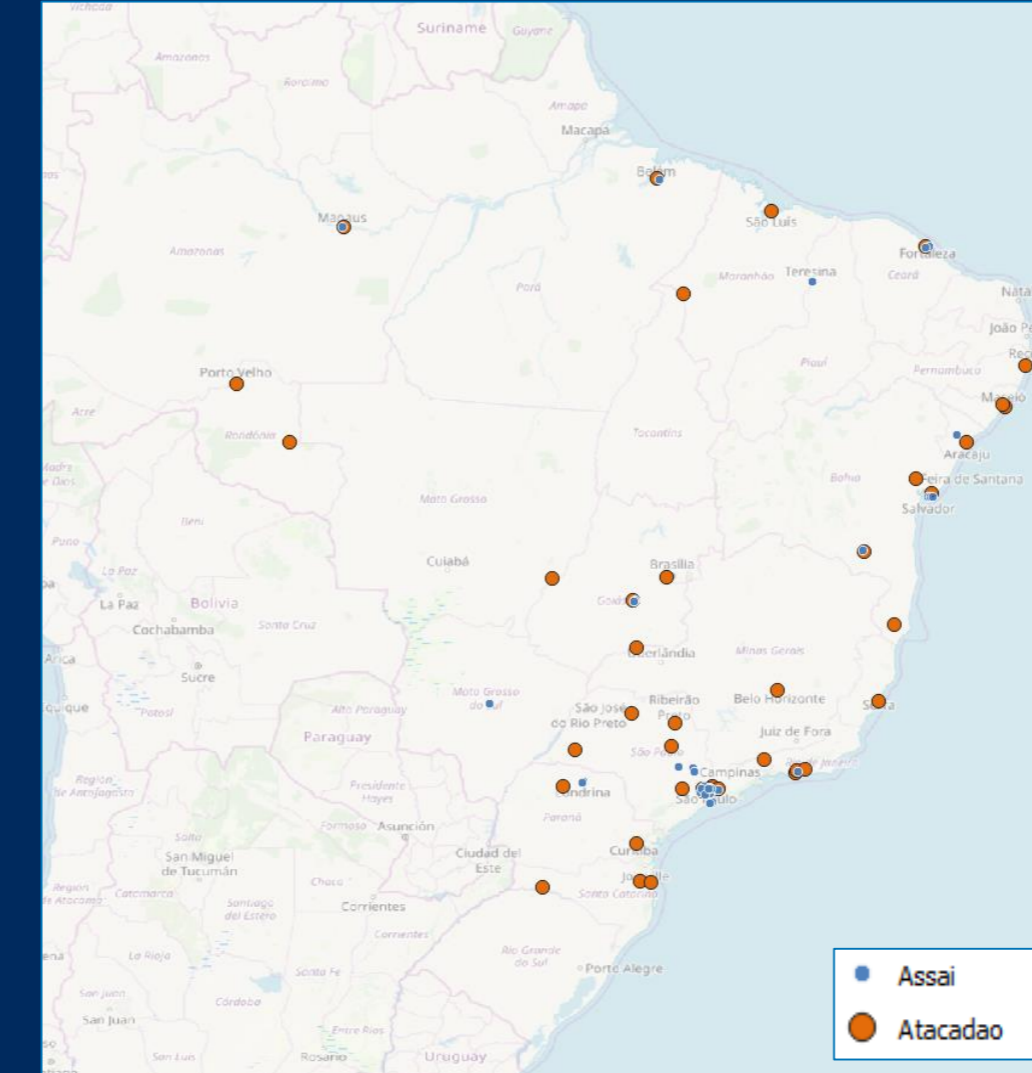
Store overlap vs competitor Assai

Both **Assai** and **Atacadao** (**Carrefour**) have grown their store estates by 34% (36 stores) and 27% (41 stores) respectively between 2017–2019

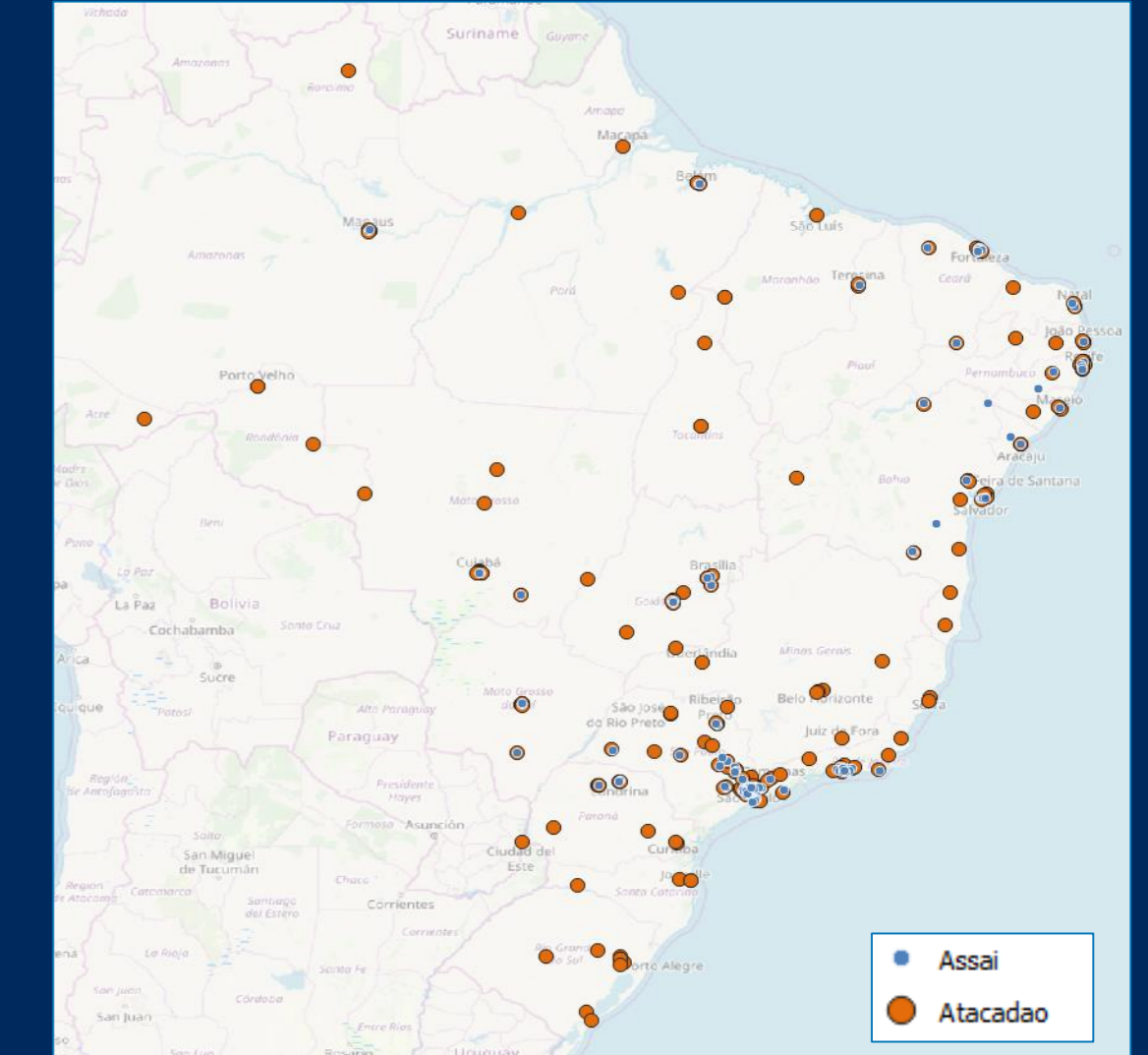
Competition overlap has **increased** as a result of this expansion **by 7%** (40% in 2017 to 47% in 2019)

Source: Schroders Data Insights Unit, February 2019. Securities shown are for illustrative purposes only and should not be viewed as a recommendation to buy or sell.

Assai & Atacadao: Store Network Distribution 2017 -2019 Openings



Assai & Atacadao: Store Network Distribution



Weather data

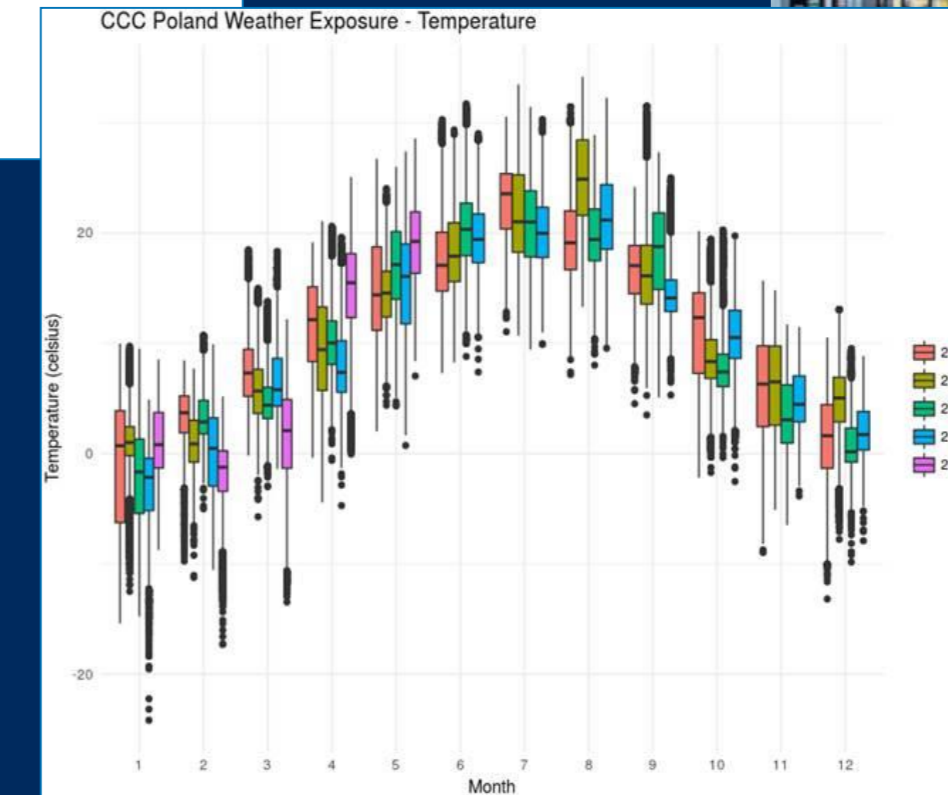
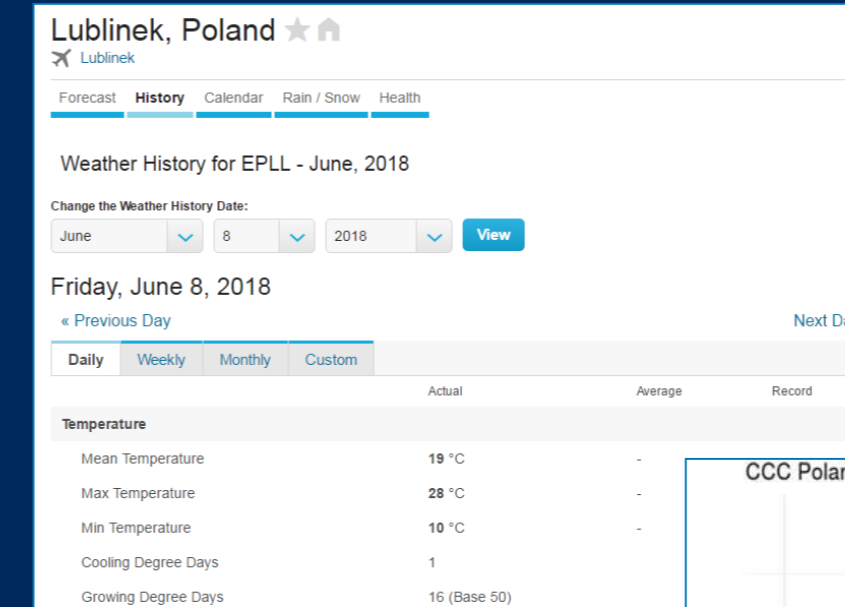


Using weather data to
analysis affect on footfall
for retail locations

Source: Schroders, www.imagesretailme.com,
www.wunderground.com.

Over 10 years of historic
weather data

Data collected hourly across
every 30km globally



Monitoring the digital landscape

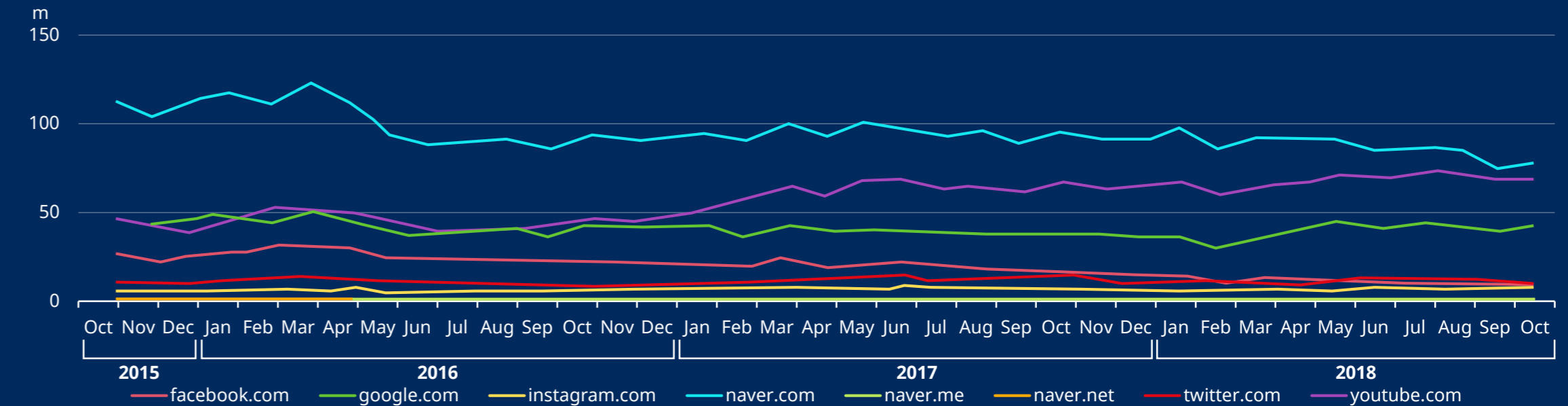


Using web traffic data to compare Naver with competitors

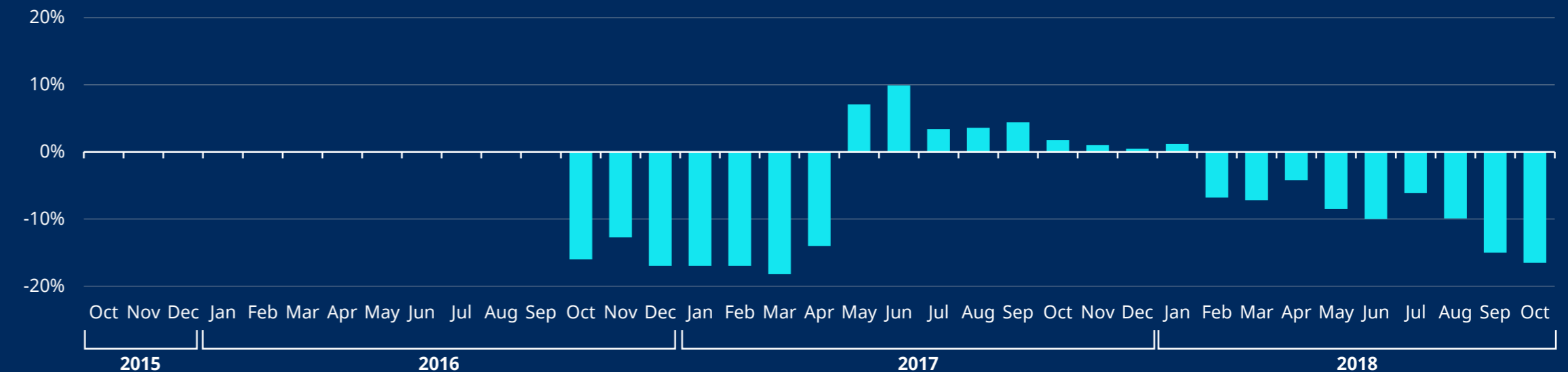
Source: Schroders Data Insights Unit, November 2018. Securities shown are for illustrative purposes only and should not be viewed as a recommendation to buy or sell.

Market share lost to both Google and YouTube, affecting advertising revenue

Desktop visits in Korea for Naver vs. competitors



YoY% change – unbounced desktop visits for naver.com



Brand sentiment to aid research



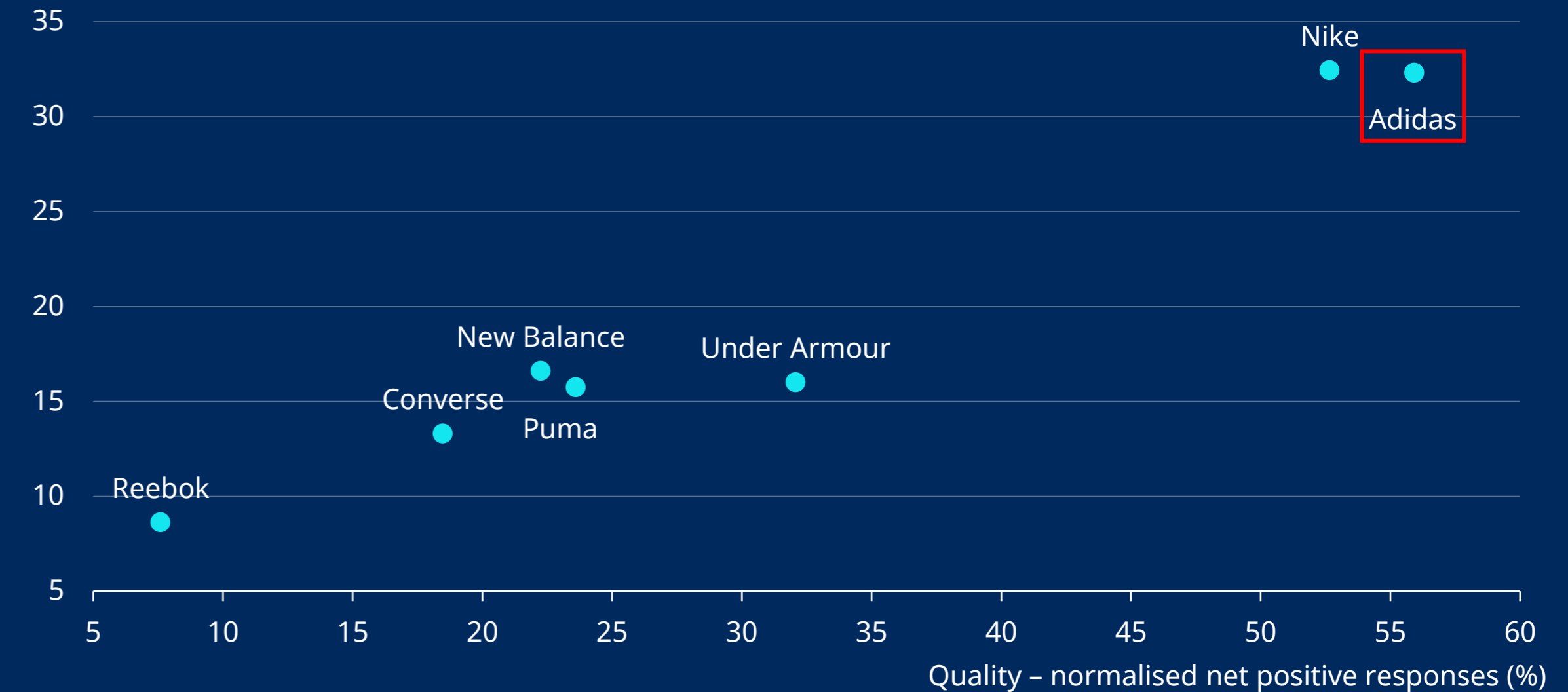
Placing an intangible brand
in a quantifiable peer group

Automated reports of brand
health driven from our **multi-
billion row database**

Source: Schroders Data Insights Unit, January 2019. Securities shown
are for illustrative purposes only and should not be viewed as a
recommendation to buy or sell.

Adidas vs Peers - Sector overview - China

Value - normalised net positive responses (%)



Blind Spot Alerts

Automated idea generation from changes in brand sentiment

Source: Schroders Data Insights Unit, June 2018. Companies shown are for illustrative purposes only and should not be viewed as a recommendation to buy or sell.



This is a new edition of the DIU automated email. Only brand alerts for now, but more data will be added. New feature (sector filters etc.) and recipient requests are encouraged.

General alerts Brand sentiment

The following alerts indicate shifts in brand perception (quality, value, purchase consideration and/or purchase intent) triggered in the previous two weeks.

Air France-KLM	Air France	France	▼	Sustained trend	Perceived value
American Airlines Inc	American Airlines	France	▲	Sustained trend	Purchase consideration
Canon Inc	Canon	Germany	▼	Short term	Recently purchased

American Airlines purchase consideration – France

Positive responses (%)



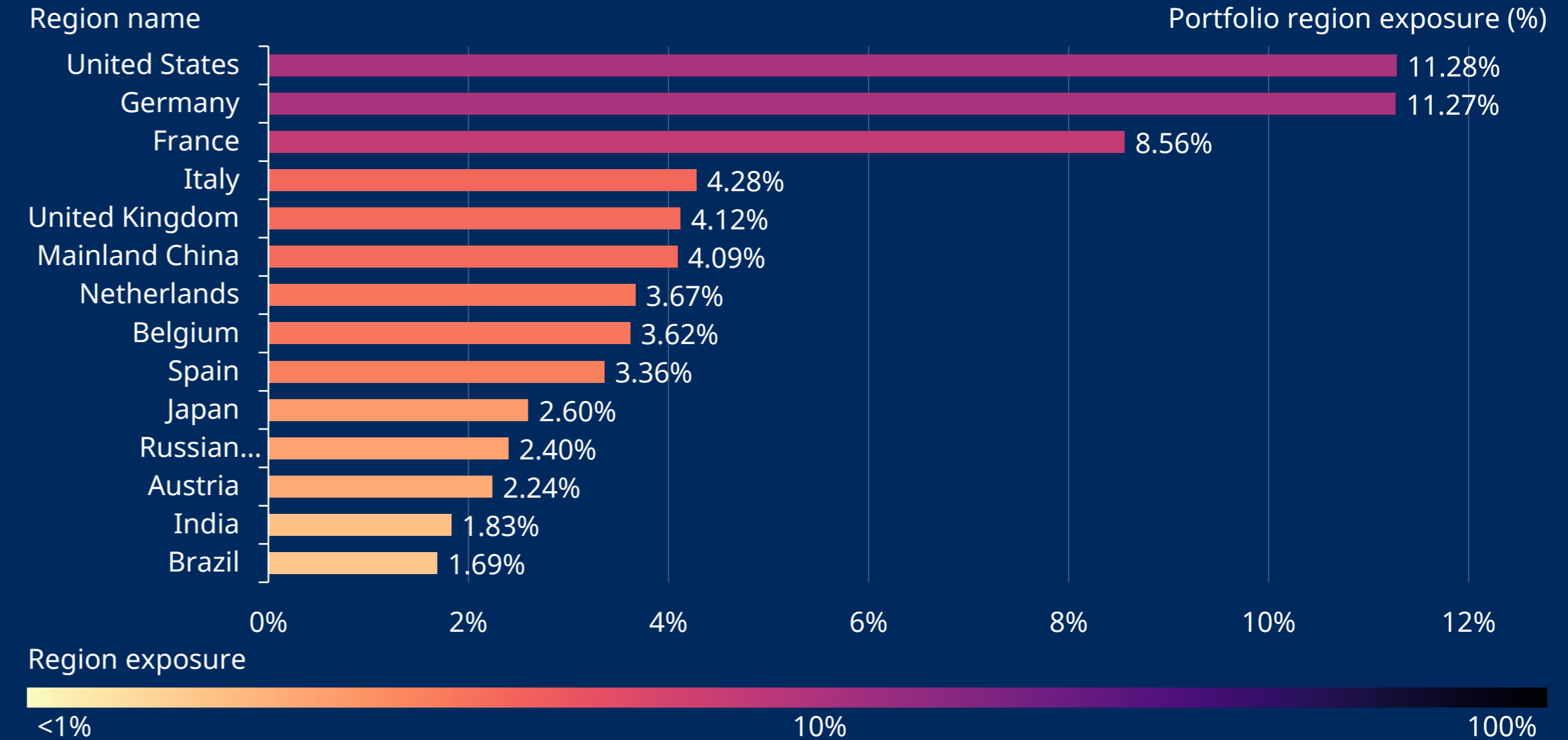


Portfolio analytics

GeoRev tool takes the geographic revenue mix of every stock in a portfolio and aggregates it by position size to show the **profile of the overall portfolio**

Source: Schroders Data Insights Unit, October 2019. Securities shown are for illustrative purposes only and should not be viewed as a recommendation to buy or sell.

Revenue exposure by country for matched securities



Human Capital

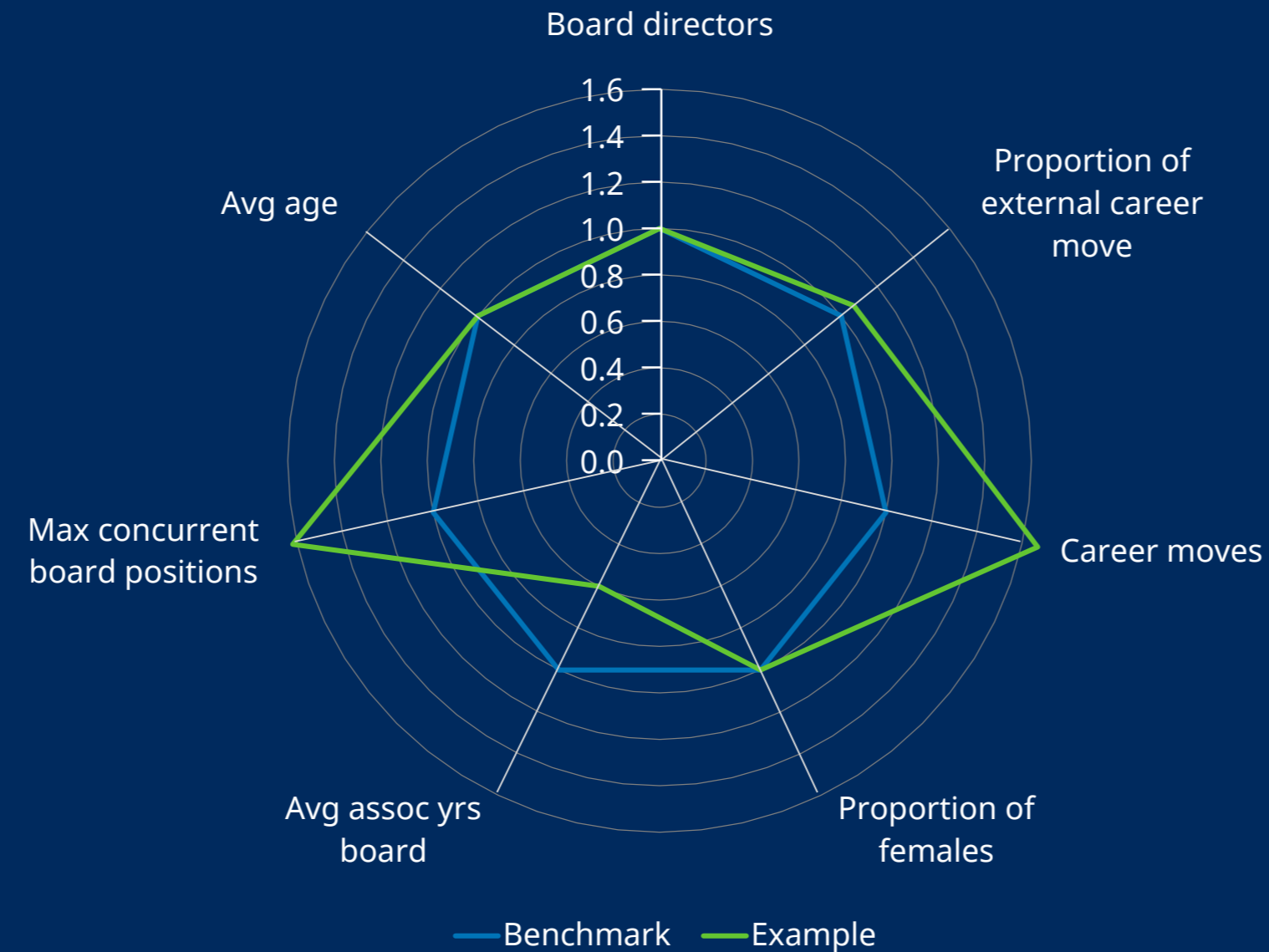


Creating comparable insights on boardrooms and governance



Source: Schroders Data Insights Unit, October 2019. Securities shown are for illustrative purposes only and should not be viewed as a recommendation to buy or sell.

Board Overview – Example



Overboarding

Example company board members who **currently** sit on at least three boards or hold at least two executive positions in total.

Overboarding instances may be overcounted if directors have left and joined other boards in the course of the year.

Name	# Boards	# Exec Roles
Director A	12	0
Director B	11	0
Director C	8	1
Director D	8	1
Director E	7	1
Director F	2	2

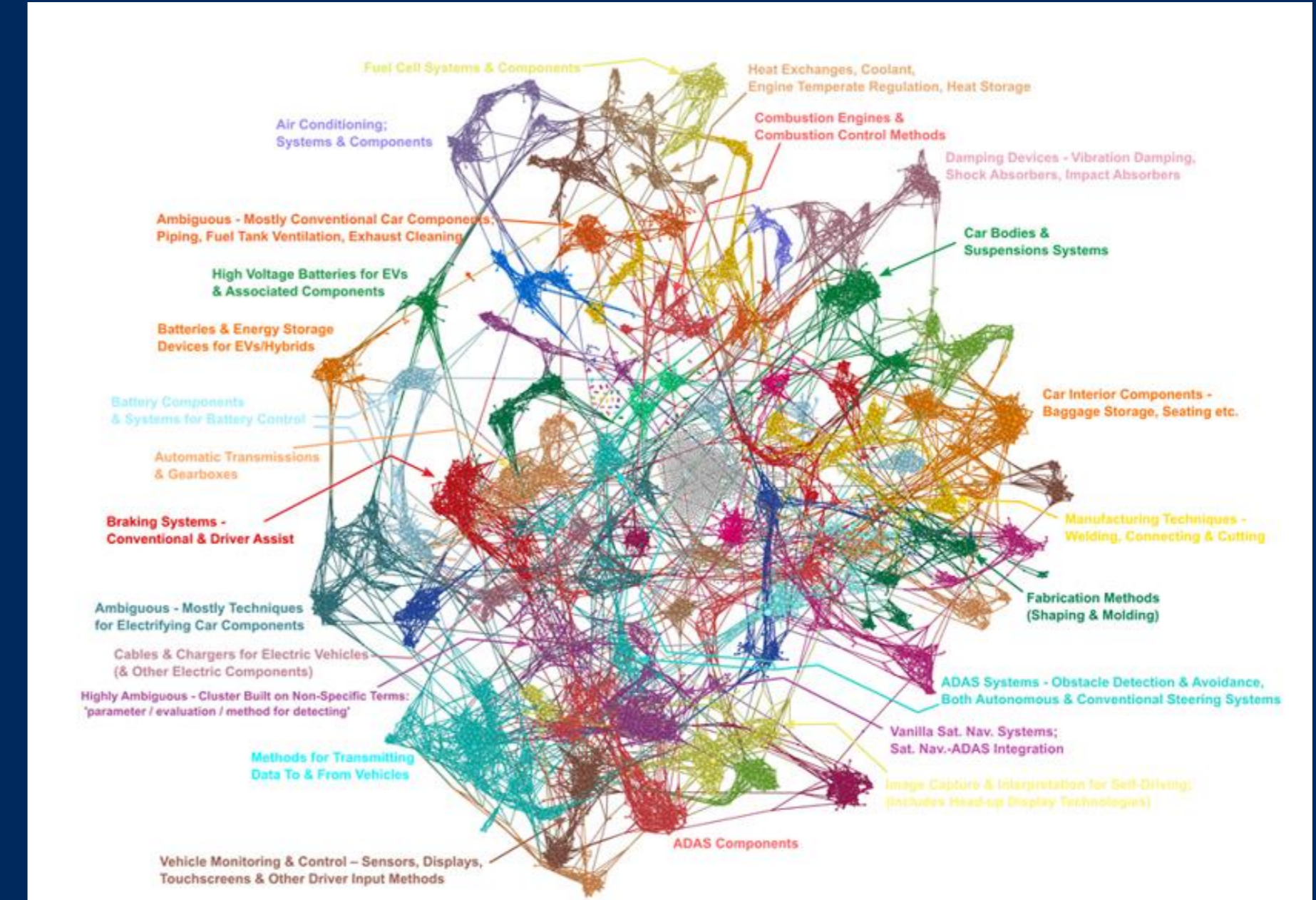
Unique insight into industrial R&D



Turning documents into data

Natural language processing produces instant clusters of patents according to semantic similarities

Source: Schroders.



Auto Patent Innovation



Modern telematics & infotainment inventions



Which company has filed the most telematics and infotainment patents since 2012?



BMW



Hyundai



Continental



Tesla

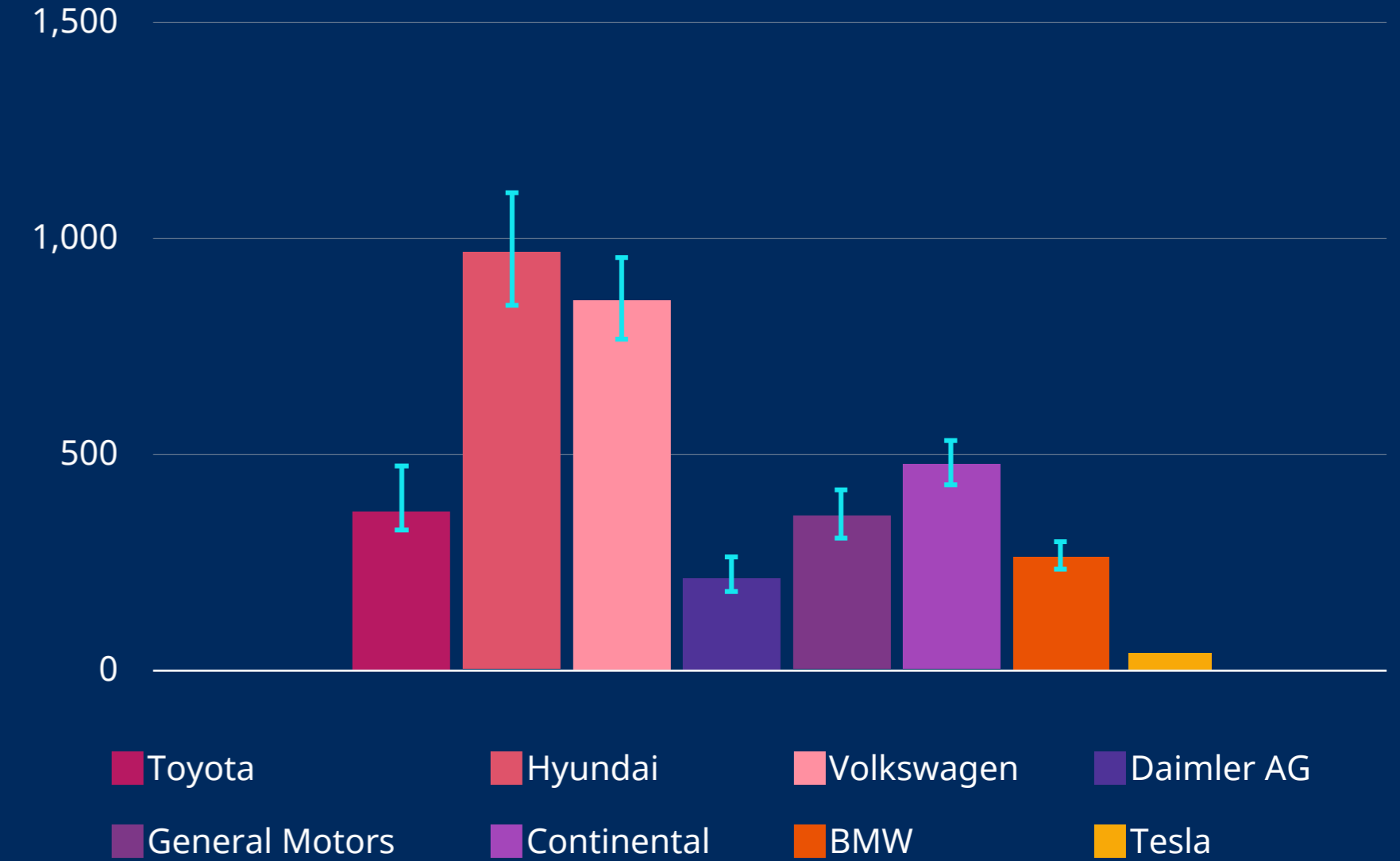


General Motors



Volkswagen

Telematics and infotainment



Source: Schroders, November 2017. Securities shown are for illustrative purposes only and should not be viewed as a recommendation to buy or sell.

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