



## 2H 2019

# ComCap's European Digital Retail Perspectives

## ComCap is pleased to present its European digital retail perspectives for the second half of 2019

- We are pleased to present our views on the European digital retail landscape, doing so with the aim of helping increase transparency and communication between the companies themselves, as well as within financial and strategic investors
- In the following slides, we highlight our sectors of focus within the European digital retail ecosystem, and the trends which are currently reshaping the commerce landscape

SaaS

**1. AI increases competitive advantage by engaging, monetising and retaining customers more effectively**

**2. Augmented and virtual reality technologies enhance the customer experience**

**3. IoT present unique solutions for retailers – European IoT market is set to witness some rapid growth**

**4. Personalisation is defining the shopping experience across European retailers**

**5. Digital marketing is being disrupted by new regulation and innovating technologies**

**6. Retail merchandising is going digital in Europe**

Pro  
Serv

**7. Online services and ecommerce are helping shape the way the European logistics sector is developing**

# An introduction to ComCap

- ComCap is a premier boutique investment bank focused on the intersection of commerce and capital, with key focus on B2B SaaS, B2C ecommerce, payments, mobile commerce, marketplaces and B2B services for retail technologies (IT and marketing services, in-store, fulfillment, logistics, call center, analytics, and personalization)
- Headquartered in San Francisco with European coverage from London and Moscow, as well as Latin American coverage from São Paulo. Our firm works with mid-cap public companies on buy-side initiatives and public and private growth companies on financing and strategic M&A
- In addition to being the only boutique focused on disruptive commerce models, we differentiate by:
  - Bringing bulge bracket techniques to emerging models;
  - A strong and uncommon buy-side/strategy practice;
  - Deep understanding of industry drivers and synergy analyses;
  - Deep relationships across the sector; and
  - Worldwide coverage with closed transactions in the United States, Japan, China, the ASEAN region, Western and Eastern Europe and Latin America
- Your global ComCap senior team:



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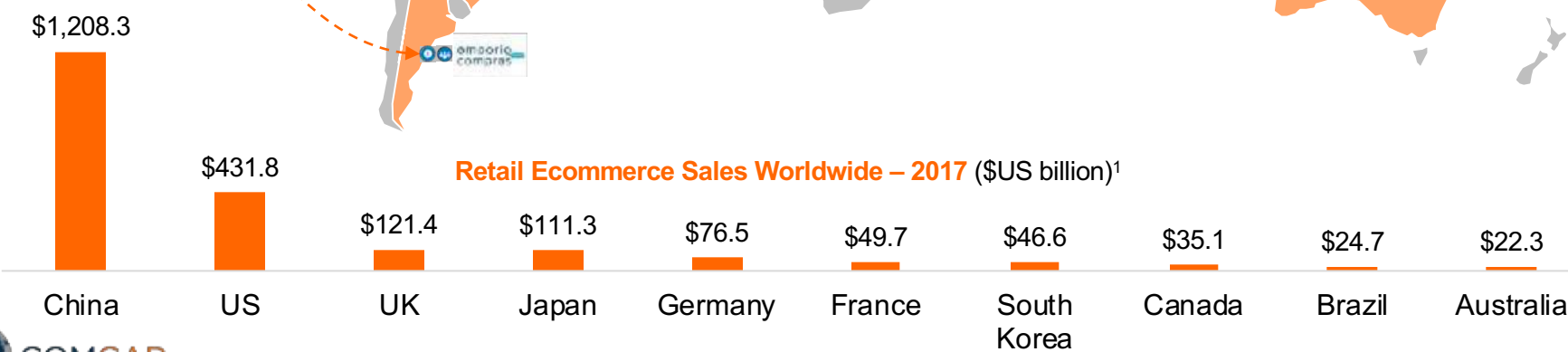
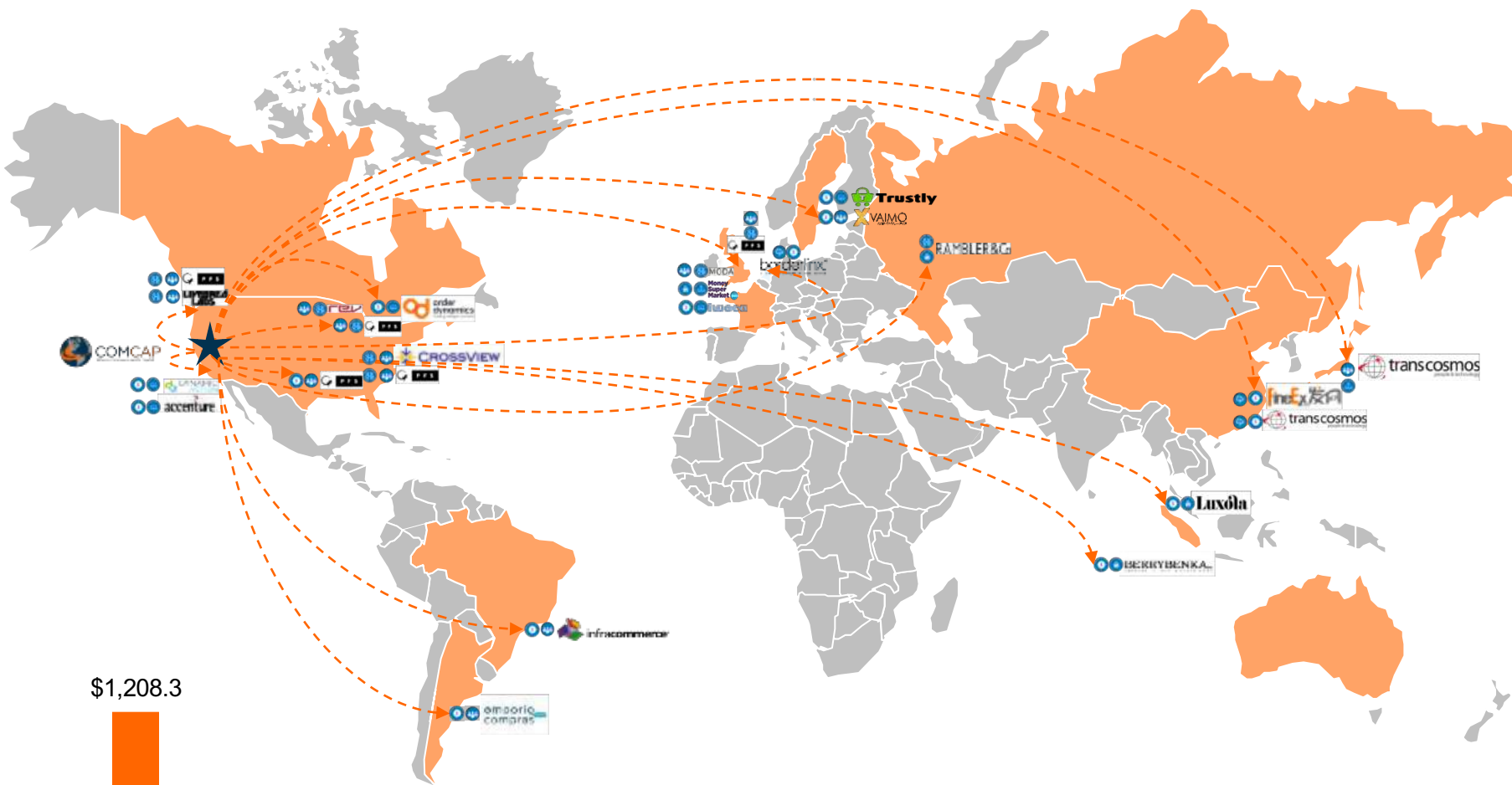


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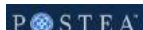
















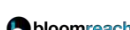







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# ComCap – Active in 14 countries, including 8 of the top 10 global ecommerce markets



Source: Content26, Amazon Launches Pay-to-Click Service, 2017

# ComCap's current thematic focus areas

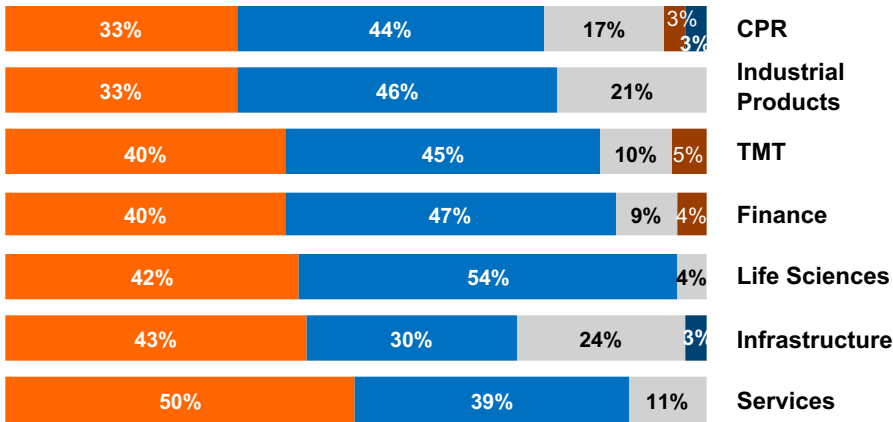
Theme	Description	Select companies
Artificial Intelligence / Analytics	Focus on disruptors in the artificial intelligence space focused on ecommerce, logistics, retail, predictive, payment, risk, and marketing	     
B2C and Vertical Brands (DNVBs)	Digitally native D2C brands harnessing modern technology and business models to reach the end consumer, covering clothing, accessories, personal care, home and kitchen, furniture, and other consumer-focused products	     
Ecommerce SaaS	Emerging and disruptive SaaS businesses in the ecommerce sector	    
Fintech	Retail and commerce-related disruptors in the fintech universe. Current focus areas include payments, risk analytics, false declines and retail point-of-sale, especially mobile (mPOS)	   
IoT	The internetworking of physical devices, vehicles, buildings, and other items – embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data	  
Logistics	Emerging platforms and providers innovating and optimizing the many facets of the supply chain ecosystem	   
Marketing Suites	Emerging platforms in digital marketing or those that focus on optimization in digital marketing and content delivery	  
Mobile	Focused on mobile solution providers optimizing the mobile experience from desktop-to-mobile website conversions, and targeted mobile marketing to simplifying the mobile checkout experience	   
Personalization	Emerging players in the ecommerce personalization space	    
Retail In-store technology	Platforms and solutions that enable retailers improve customer experience, productivity, and operational inefficiencies	    
Agencies and System Integrators (SI)	Agencies and systems integrators implementing retail focused technology spanning the above sectors, including large SIs covering multiple platforms, as well as smaller SIs covering just one or a handful of platforms	 

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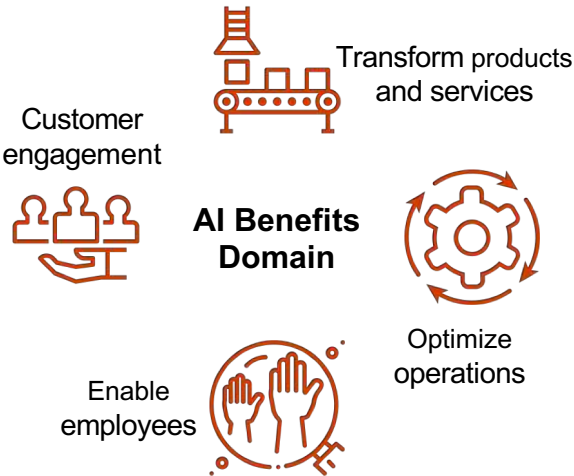
# AI & Analytics in Europe

# Higher usage of AI is having a major impact on the way business processes are being run

## Artificial Intelligence impact on industries



## AI impacts business in four benefit domains



## Some key facts and expected trends

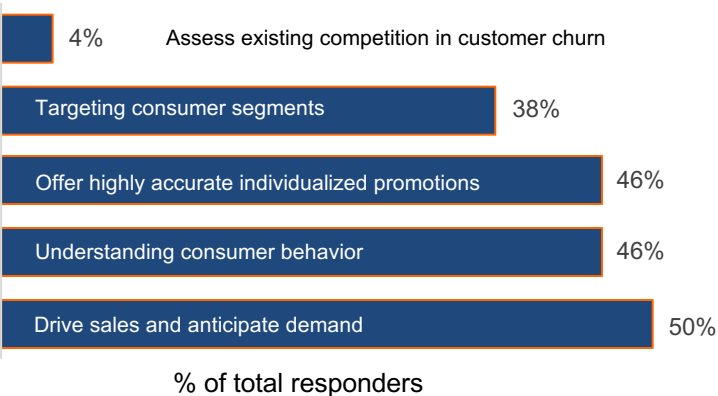
- On-site personalization is the second most commonly cited use case for AI
- Western Europe is considered the second largest market for AI
- In 2018, the EU committed to a 70% increase in investment in European AI by 2020
- Machine learning is the most commonly used technology within AI, with a usability of ~77%
- ~40% of global advertisers use AI for media spend optimization
- 47% of advertisers use AI for audience targeting and 46% for audience segmentation, making them the most popular AI digital ad tactics

# AI increases competitive advantage by engaging, monetising, and retaining customers more effectively

## Benefits of Implementing AI technologies

- **Augmented decision-making:** Assists in optimizing scientific decision-making, allocating resources, and efficiently scaling operations
- **Automated processes:** Result in greater efficiencies, improved outcomes, and reduced cost
- **Personalization:** Products designed to suit buyer's individual features and needs including online product recommendations
- **Timely service:** Digital supply chain networks have reduced turnaround, delivery, and customer service times

## UK Retailer Survey: What retailers use AI for?



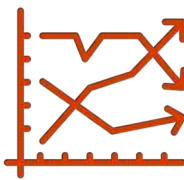
## Core use cases in retail sector for Europe



- ✓ **Customer segmentation:** AI analyses customer behavior datasets in order to adapt online and offline store layouts, driving conversion and sales



- ✓ **Personalisation:** Based on AI in Europe Report, 44% of companies are using AI to personalize user experience



- ✓ **Churn prediction:** Based on AI in Europe Report, 74% of companies use churn analysis to identify and proactively engage customers with exit potential



- ✓ **Price optimisation:** AI identifies what customers are willing to pay, whilst ensuring the business remain competitive and profitable



# Accelerated spending on AI could help Europe catch up with the US in digitisation

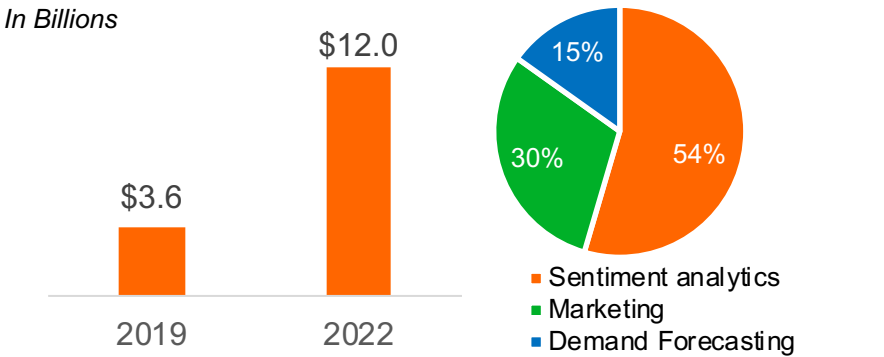
## Global Perspectives

Global retail spending on AI will grow to \$12B per year by 2022, up from an estimated \$2B in 2018, according to a study from Juniper Research. The share of AI in the global economy by 2030 is estimated to be \$15.7T. At an annual growth of 3% for the global economy, AI would be 14% of global GDP in 2030.

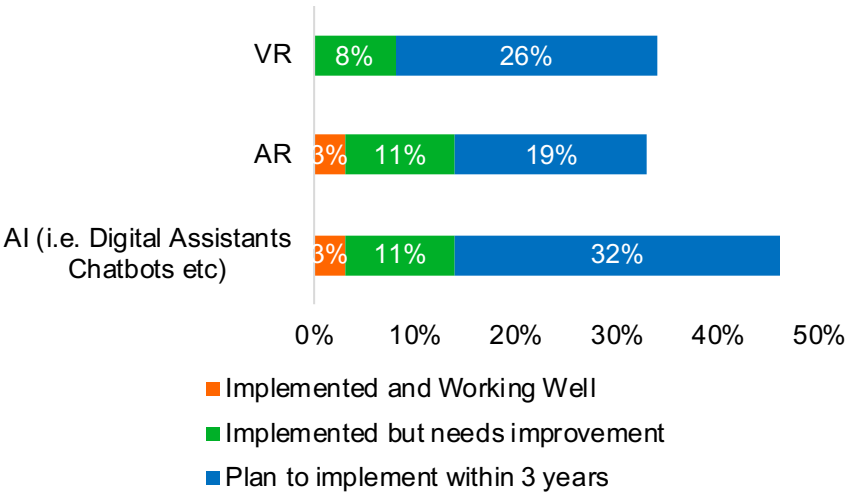
## Europe Perspectives

Spending on AI in Europe is expected to be \$5.2B for 2019 and is expected to expand at a CAGR of 44.4% between 2018-2026. However, European AI investment has lagged with that of the US due to a digitisation gap of ~35% between the two regions. Europe is home to only 10% of the world's digital unicorns. If Europe implements AI according to its current digitisation status relative to the world, it could see an additional ~€2.7T growth or 19% in GDP by 2030. However, if the region is able to bridge the digitisation gap with the US, it could accelerate its GDP growth by 0.5% each year and add another \$900B to its output by 2030.

## Global retail AI spending and major applications

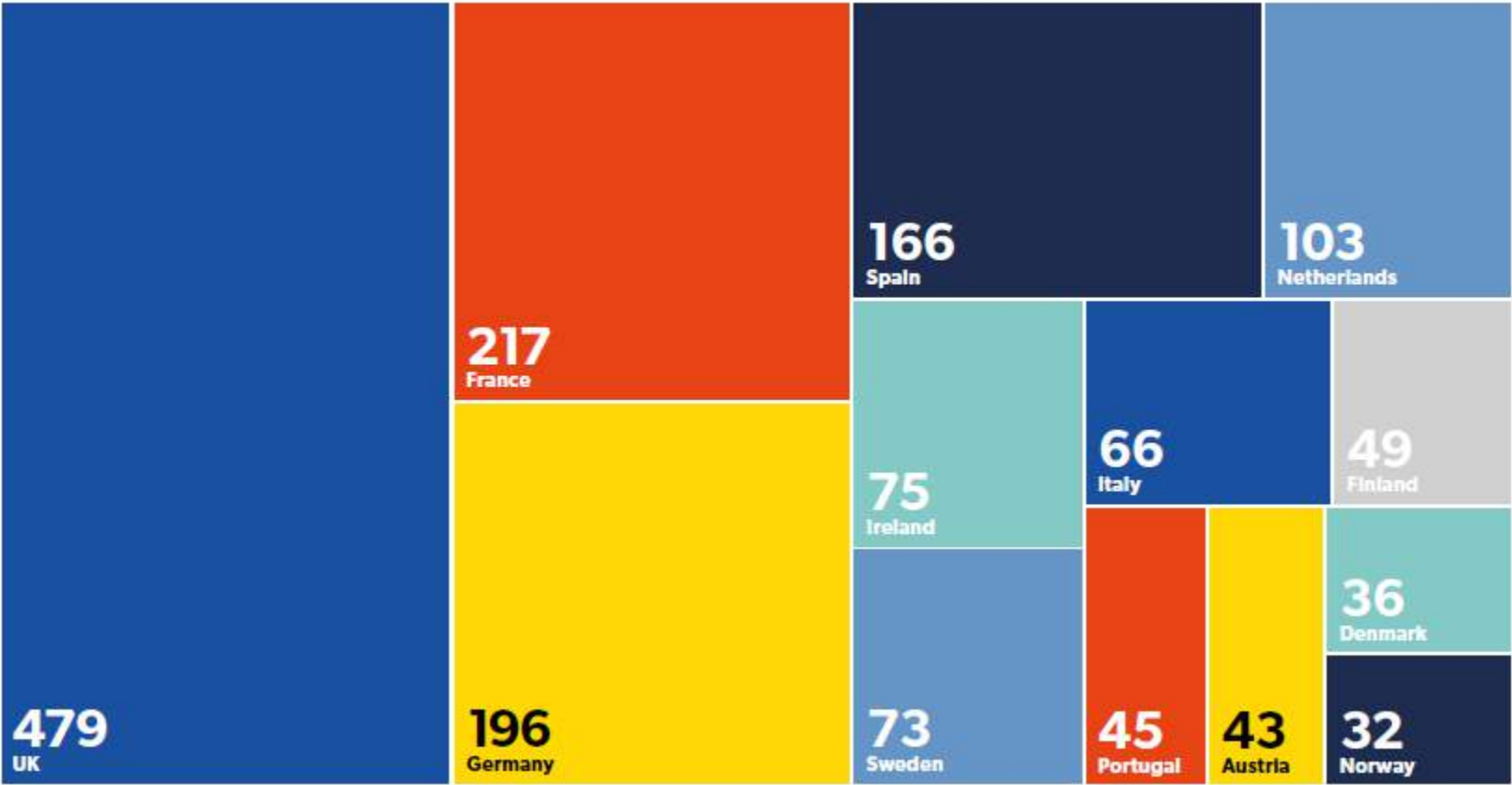


## Customer service technologies with scope for growth



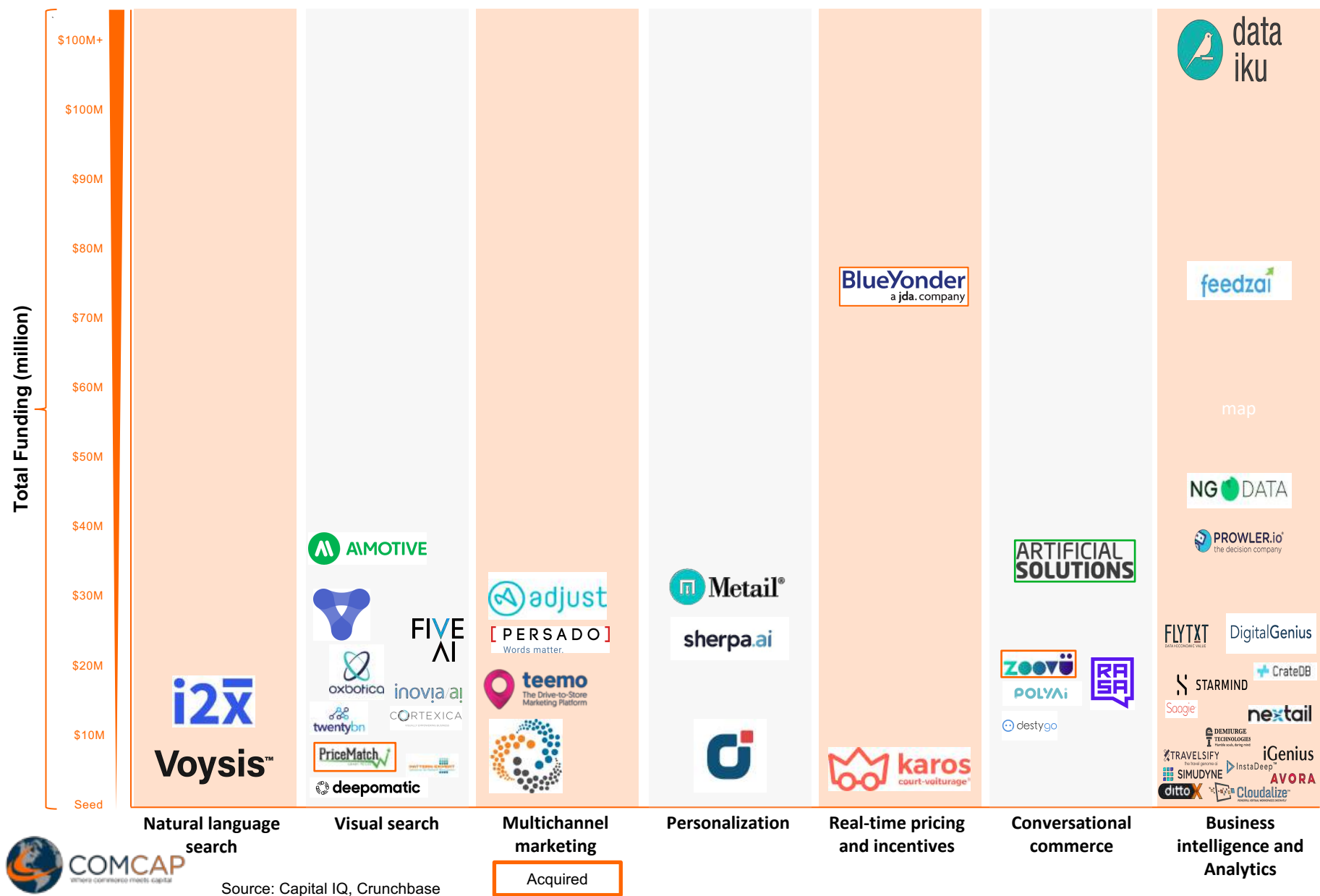
# The UK is the powerhouse of European AI, housing a third of the continent’s startups

- Europe is home to 1,600 early stage AI software companies, and AI entrepreneurship is becoming mainstream
- The European startup ecosystem is maturing—one in six European AI companies is a “growth”-stage company with over \$8M of funding
- The UK is the powerhouse of European AI with nearly 500 AI startups—a third of Europe’s total and twice as many as any other country



*Germany and France are flourishing hubs and may extend their influence in the decade ahead*

# European Artificial Intelligence funding landscape



# AI and Analytics: Private placements in Europe (1/2)

Date	Target	Buyers	Deal Size (\$M)
5/29/2019	Destygo SAS	Partech Partners; Accor SA; Aéroports de Paris SA; White Star Capital, L.P.	\$10.0
5/3/2019	InstaDeep Ltd	AfricInvest Group; Endeavor Global, Inc., Investment Arm; Endeavor Catalyst I L.P.	\$7.0
4/11/2019	Rasa Technologies GmbH	Accel; Basis Set Ventures	\$13.0
4/3/2019	Simudyne Ltd.	Barclays PLC; Graphene Ventures; Gauss Ventures	\$6.0
3/8/2019	PolyAI Ltd	Amadeus Capital Partners Limited; Passion Capital; Entrepreneur First Operations Limited; Sands Capital Ventures, LLC; Point72 Ventures	\$12.0
2/26/2019	i2x GmbH	b-to-v Partners AG; HV Holtzbrinck Ventures Adviser GmbH; Unternehmertum Venture Capital Partners GmbH; Asgard Capital Verwaltung GmbH; MS&AD Ventures Inc.	\$11.4
2/7/2019	Deepomatic Arts et Métiers	Alven Capital Partners; Hi Inov SAS	\$6.1
2/7/2019	Zuwoo Limited	Beringea LLC; Target Global	\$14.0
1/15/2019	Avora Ltd	Albion Venture Capital Trust PLC; Albion Capital Group LLP; Crane Venture Partners LLP	\$6.5
10/4/2018	Artificial Solutions Holding ASH AB (nka:Artificial Solutions International AB)	NA	\$15.7
9/27/2018	Travelsify S.A.	Accor SA	\$5.8
9/26/2018	Twenty Billion Neurons GmbH	Creative Edge, Inc.; M12; Coparion GmbH & Co. KG; MFV Partners; M12	\$10.0
9/26/2018	Darktrace Limited	KKR & Co. Inc.; Vitruvian Partners LLP; Ten Eleven Ventures	\$50.0
9/19/2018	Oxbotica Limited	IP Group Plc; Parkwalk Advisors Ltd; Axa XI	\$18.4
9/11/2018	Inovia AB	Verdane Capital	\$16.5
7/25/2018	Cloudalize Nv	Horizons Ventures Limited; EIT Digital IVZW	\$5.8
6/27/2018	Nextail Labs, S.L.U.	Nauta Capital; Keen Venture Partners LLP; Nauta Tech Invest IV SCR, S.A; Sonae Investment Management	\$10.0
6/22/2018	Tractable Limited	Insight Venture Partners LLC; Ignition Partners; Acequia Capital; Plug & Play Ventures; Zetta Venture Partners I, L.P.; Zetta Venture Partners	\$20.0
6/19/2018	CRATE Technology GmbH	Draper Esprit plc; Zetta Venture Partners; Deutsche Invest Equity Partners GmbH; Vito Ventures Management GmbH; Momenta Partners AG	\$11.0
5/27/2018	Picsoneye Segmentation Innovations Limited	Octopus Ventures Ltd.	\$8.0
5/9/2018	Starmind International AG	Digitalplus GmbH	\$15.0
4/16/2018	Karos SAS	Aster Capital Partners SAS; Alto Invest; Financière Saint James; Aglaé Ventures	\$5.2
3/31/2018	iGenius Srl	NA	\$8.6
2/12/2018	Ditto AI Ltd	IP Group Plc; Parkwalk Advisors Ltd; Parkwalk Opportunities	\$5.5
1/23/2018	Creative Data SAS	BNP Paribas Développement SA, SCR; Matmut SA; Cathay Capital Private Equity; CapHorn Invest - Société de Gestion; Cathay Innovation Fund; Caisse d'Epargne Normandie Capital	\$6.1
1/4/2018	Almotive Kft	Samsung Venture Investment Corporation; Prime Ventures; Inventure Oy; Cisco Investments; Robert Bosch Venture Capital GmbH; Day One Capital Kockazati Tokealap-kezelő Zrt.; Draper Associates; Samsung Catalyst Fund; B Capital Group Management, L.P.; B Capital Fund, L.P.	\$38.6
12/31/2017	Sherpa Europe S.L.	Alma Mundi Ventures, SGEIC, S.A.	\$7.0
12/19/2017	Digital Genius Ltd.	RRE Ventures LLC; MMC Ventures Ltd; Global Founders Capital Management GmbH; Compound; Paua Ventures GmbH; Lerer Hippeau Ventures; Runa Capital; Lumia Capital; Global Founders Capital; Salesforce Ventures; Spider Capital; Kairos Ventures Partners	\$14.8

# AI and Analytics: Private placements in Europe (2/2)

Date	Target	Buyers	Deal Size (\$M)
12/5/2017	NGDATA	Capricorn Venture Partners; IDInvest Partners SA; BAMS Angels Fund; HPE Growth Capital; Pamica NV; Nausicaa Ventures; Capricorn ICT Arkiv NV; SmartFin Capital	\$19.0
11/30/2017	Envoy AG	NA	\$5.1
9/6/2017	DATAIKU SAS	Battery Ventures; FirstMark Capital, L.L.C.; Alven Capital Partners; Serena Capital	\$28.0
9/5/2017	Prowler.io Limited	Amadeus Capital Partners Limited; SGInnovate; Atlantic Bridge; Passion Capital; Cambridge Innovation Capital PLC	\$13.0
9/5/2017	FiveAI Inc.	Amadeus Capital Partners Limited; Notion Capital Partners LLP; Lakestar Advisors GmbH; Kindred Capital	\$18.2
7/9/2017	Metail Limited	TAL Apparel Limited	\$12.9
4/26/2017	Flytxt B.V.	DAH Beteiligungs GmbH	\$10.9
3/21/2017	DataBerries SAS	Index Ventures; ISAI Gestion, SAS; Mosaic Ventures	\$16.2
2/22/2017	Voysis Limited	Polaris Partners	\$8.0
2/15/2017	Persado UK Limited	European Investment Bank	\$26.5
1/30/2017	Tractable Limited	Ignition Partners; Zetta Venture Partners	\$8.0
10/25/2016	DATAIKU SAS	FirstMark Capital, L.L.C.; Alven Capital Partners; Serena Capital; Serena II, FPCI	\$14.0
7/26/2016	Pattern Expert GMBH	Khosla Ventures	\$7.8
5/25/2016	Sherpa Europe S.L.	Orza Gestión y Tenencia de Patrimonios, AIE; Alma Mundi Ventures, SGEIC, S.A.; Alma Mundi Innvierte Fund, FCRE	\$15.0
12/25/2015	Demiurge Technologies AG	NA	\$9.5
10/28/2015	NGDATA	Capricorn Venture Partners; IDInvest Partners SA; BAMS Angels Fund; Pamica NV; Nausicaa Ventures; SmartFin Capital	\$19.3
10/21/2015	adjust GmbH	Iris Capital; Target Partners GmbH; Active Venture Partners; Highland Europe Fund; Capnamic Ventures Management GmbH; Highland Capital Partners (UK) LLP (nka:Highland Europe (UK) LLP)	\$17.0
6/30/2015	Flytxt B.V.	IVC Venture Capital Aktiengesellschaft; RM Beteiligungsverwaltung GmbH; Schnell Consult GmbH	\$11.1
5/18/2015	Feedzai S.A.	Sapphire Ventures LLC; Armilar Venture Partners; Oak HC/FT Partners, L.P.; Oak HC/FT Partners LLC	\$17.5
2/11/2015	PriceMatch SAS	Partech Partners; Northzone Ventures	\$9.0
Min			\$5.1
Mean			\$13.5
Median			\$11.4
Max			\$50.0

# AI and Analytics: M&A in Europe

Date	Target	Acquirer	Transaction Size (\$M)	Enterprise Value	LTM Revenue	EV / LTM Revenue
05-21-19	Coheris SA	ChapsVision	\$12.3	\$10.6	\$15.4	0.7x
02-07-19	Zuwoo Limited	Beringea LLC; Target Global	\$14.0	NA	NA	NA
01-09-19	BOARD International S.A.	Nordic Capital; Nordic Capital Fund IX	NA	NA	NA	NA
12-20-18	Soft Computing	Multi Market Services France Holdings SAS	\$49.5	\$52.8	\$51.3	1.0x
11-16-18	Cylance Inc.	BlackBerry Limited	\$1,500.0	\$1,500.0	\$130.0	11.5x
10-03-18	Hortonworks, Inc.	Cloudera, Inc.	\$2,106.7	\$2,005.4	\$327.6	6.1x
09-12-18	Top Data Science Oy	Morpho, Inc.	\$5.0	\$5.9	\$0.5	11.6x
07-02-18	Blue Yonder GmbH	JDA Software, Inc.	NA	NA	NA	NA
05-23-18	A2iA S.A.	Mitek Systems, Inc.	\$49.7	\$49.7	\$15.1	3.3x
04-26-18	Mattersight Corporation	Nice Systems, Inc.	\$118.9	\$111.2	\$49.3	2.2x
01-11-18	Talkwalker, Sàrl	Marlin Equity Partners, LLC	\$6.0	NA	NA	NA
08-22-17	Affecto Oyj	CGI Nordic Investments Limited	\$132.9	\$118.4	\$141.0	0.8x
07-24-17	Acrolinx GmbH	GENUI GmbH	NA	\$60.0	NA	NA
03-13-17	Mobileye N.V.	Intel Corporation	\$15,426.4	\$14,980.6	\$358.2	36.8x
01-24-17	AppDynamics LLC	Cisco Systems, Inc.	\$4,032.8	\$3,902.9	\$206.2	18.9x
01-04-17	Valtech SE	SiegCo SA	\$30.0	\$340.2	\$209.5	1.6x
05-08-15	PriceMatch SAS	BookingSuite (USA) Inc.	NA	NA	NA	NA
Min			\$5.0	\$5.9	\$0.5	0.7x
Mean			\$1,806.5	\$1,928.1	\$136.7	8.6x
Median			\$49.7	\$114.8	\$130.0	3.3x
Max			\$15,426.4	\$14,980.6	\$358.2	36.8x

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# Augmented and Virtual Reality in Europe

## Role of AR and VR in Retail

**Retailers are looking for new ways to stand out and aid product discovery and customer experience in a crowding market—and AR and VR are helping them achieve exactly that**

- Augmented reality (AR) layers computer-generated enhancements atop an existing reality in order to blend digital components into the real world and provide users the ability to interact with it through mobile devices and kiosks
- *Use cases: Scores overlays on telecasted sports, pop out 3D emails, holograms and motion activated commands*



- Virtual reality (VR) includes computer-generated simulations of a real life environment or situation. It immerses the user by making them feel like they are experiencing the simulated reality first-hand, primarily by stimulating their vision and hearing
- *Use cases: Video and computer games, 3D movies, head mounted displays, flight training simulators, etc.*



**There are two key ways in which immersive technologies such as AR and VR can enhance the retail experience**

### ■ Product Discovery

- Younger users find it easier to interact with technology – enabled selling approaches
- Payment methods are getting digitized extremely rapidly especially in developing markets
- Personalization of shopping experience and product customizations are easier in a “virtualized” environment

### ■ Brand Recall

- Tech-enabled shopping adds the “wow factor” to the customer experience, establishing high positive brand image
- AR/VR combined with AI, and cloud-enabled data analytics allows brands to formulate more accurate and effective brand campaigns



# Huge opportunities for VR/AR tech and content development in Europe

## Europe is a massive market for immersive tech and content developers

In 2018, the immersive tech industry continued to grow at a rapid rate with innovative start-ups and established tech companies all diving into it from all corners of Europe

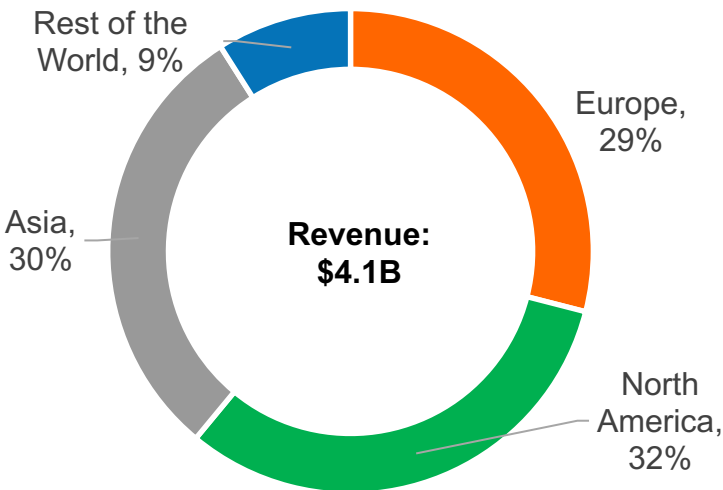
From Germany, France, the UK, Netherlands, and Sweden right through to Portugal, Spain, Italy, Croatia and Poland, the activity around VR and AR development and application use is already huge and is increasing in momentum all the time as the install base grows

Europe is close behind North America in the number of VR headset shipments

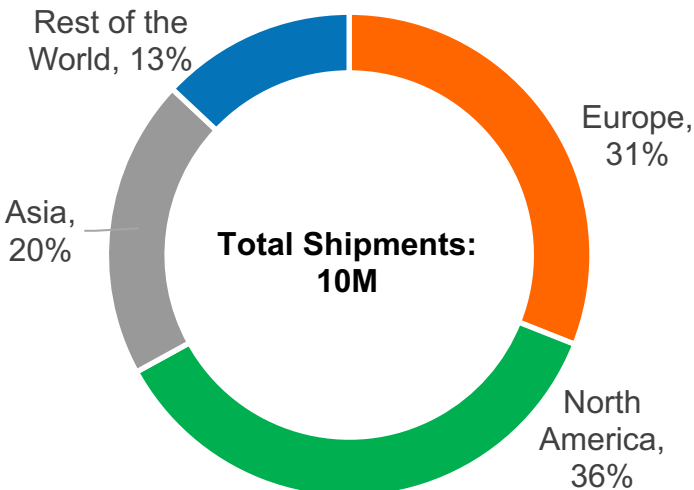
***“Europe has the potential to become a leading region in VR content: Our creativity, our cultural heritage, and our talents are all assets that can be used to create unforgettable VR experiences, amazing video games, and disruptive B2B applications.”***

*- Juan Bossicard, co-founder of EUVR*

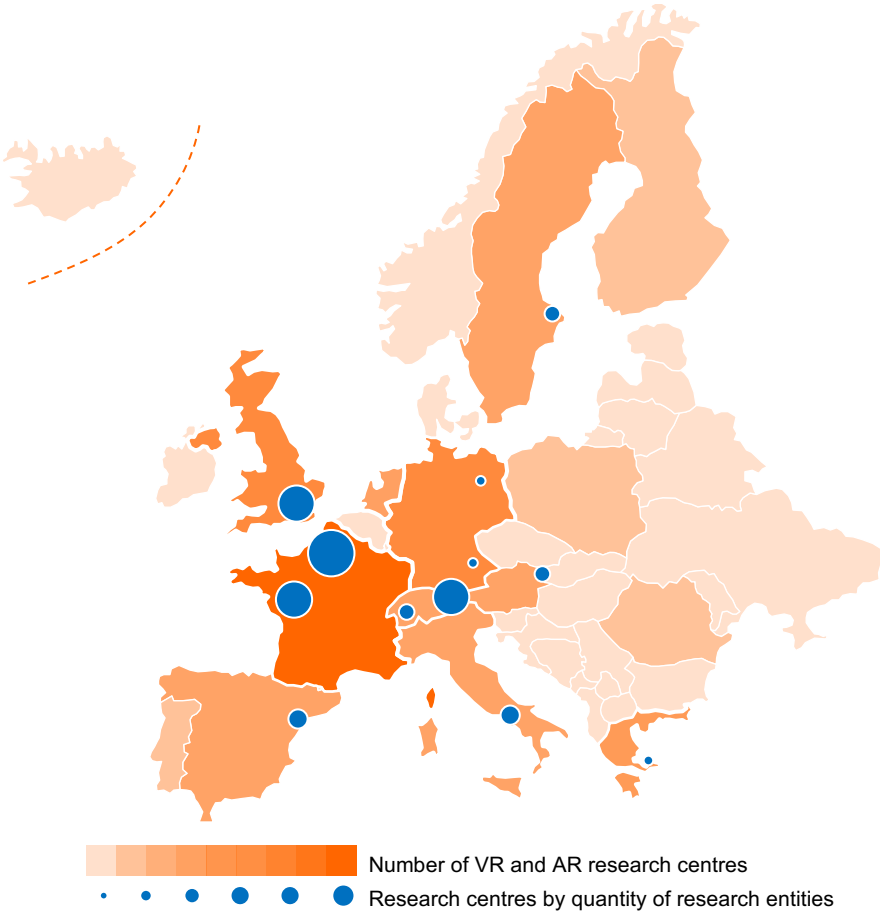
Consumer AR / VR / MR revenue, 2017



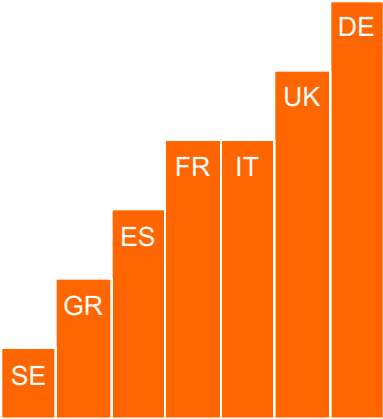
Global VR headset shipments, 2017



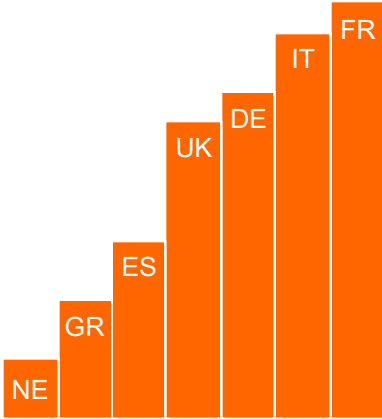
# Europe's strengths in the global VR and AR industry



Countries with the most EU-funded research projects



Countries that receive the most research funding from the EU



- The European VR and AR production value have accounted for almost €700M in 2015 or one quarter of the global value—the total production value of the European VR and AR industry is expected to increase to between €15B and €34B by 2020
- Represents a gross value added of €9B-21B and directly creating employment for some 140,000-300,000 people
- Wider supply chain impacts are expected to indirectly increase the production value with between €5.5B and €12.5B and generate an additional 85,000-180,000 jobs
- Europe has many highly skilled and qualified workers capable of 3D modelling and creating computer-generated (CG) content for the gaming industry and VR animation

*The production value of VR and AR in Europe is expected to increase between €15B and €34B in the near future and create between 225,000 to 480,000 direct and indirect new jobs*

# European AR/VR funding landscape



# AR/VR: Private placements in Europe

Date	Target	Buyers	Deal Size (\$M)
5/30/2019	InVRsion s.r.l.	Italian Angels for Growth	\$0.4
12/4/2018	S4 Capital plc	Stanhope Capital LLP; Stanhope Entrepreneurs Fund	\$89.3
9/17/2018	Blippar.Com Limited	QUALCOMM Ventures; Lansdowne Partners (UK) LLP; Lansdowne Partners International Limited; Candy Ventures Sarl	\$37.0
9/13/2018	Nuevo Sentido Tecnológico Realidad Aumentada, S.L.	NA	\$0.2
6/15/2018	Blippar.Com Limited	QUALCOMM Ventures	\$26.0
6/4/2018	Innoactive GmbH	Unternehmertum Venture Capital Partners GmbH; Capnamic Ventures Management GmbH	\$5.1
5/30/2018	S4 Capital Limited (nka:S4 Capital plc)	NA	\$67.8
5/3/2018	WANNABY	Haxus; Bulba Ventures	\$2.0
2/27/2018	Moltin Limited	Connect Ventures; Frontline Ventures; Underscore.VC	\$8.0
6/7/2017	Opuscope SAS	NA	\$0.4
3/2/2016	Blippar.Com Limited	Khazanah Nasional Berhad	\$54.0
3/2/2016	Augment SAS	Salesforce Ventures	\$3.0
9/4/2015	Moltin Limited	Y Combinator Management LLC; Frontline Ventures; FundersClub Inc., Investment Arm; TIM Ventures	\$2.0
3/6/2015	Blippar.Com Limited	NA	\$45.0
1/31/2015	Moltin Limited	Y Combinator Management LLC	\$0.1
Min			\$0.1
Mean			\$24.3
Median			\$6.6
Max			\$89.3

# AR/VR: M&A in Europe

Date	Target	Acquirer	Transaction Size (\$M)	Enterprise Value	LTM Revenue	EV / LTM Revenue
01-23-19	Blippar.Com Limited	Candy Ventures Sarl	NA	NA	NA	NA
11-27-18	Parrot S.A.	NA	\$104.8	\$8.9	\$145.8	NM
01-10-18	Mackevision Medien Design GmbH Stuttgart	Accenture plc	NA	NA	\$26.3	NA
01-04-17	Valtech SE	SiegCo SA	\$30.0	\$340.2	\$209.5	1.6x
04-22-16	Engineering Ingegneria Informatica S.p.A.	Apax Partners LLP; Apax VIII, L.P.; Neuberger Berman Group LLC; NB Renaissance	\$671.7	\$777.1	\$968.1	0.8x
02-08-16	Engineering Ingegneria Informatica S.p.A.	Apax Partners LLP; Apax VIII, L.P.; Neuberger Berman Group LLC; NB Renaissance	\$332.5	\$784.8	\$954.3	0.8x
12-15-15	Valtech SE	SiegCo SA	\$4.8	\$325.6	\$201.5	1.6x
12-04-15	Mode-In-Motion	ShopInvest	NA	NA	NA	NA
07-11-13	Clusta Limited	Krow Communications Limited	\$0.0	\$0.0	NA	NA
Min			\$0.0	\$0.0	\$26.3	0.8x
Mean			\$190.6	\$372.8	\$417.6	1.2x
Median			\$67.4	\$332.9	\$205.5	1.2x
Max			\$671.7	\$784.8	\$968.1	1.6x

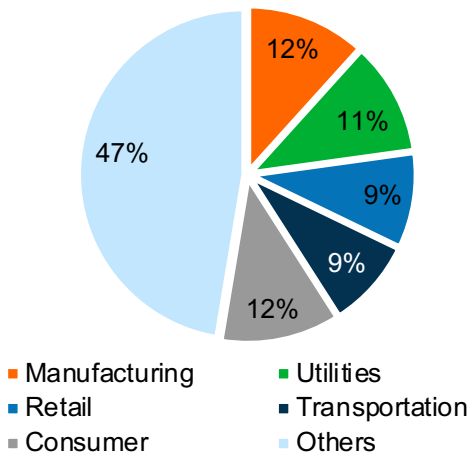
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# Internet of Things (IoT) in Retail in Europe

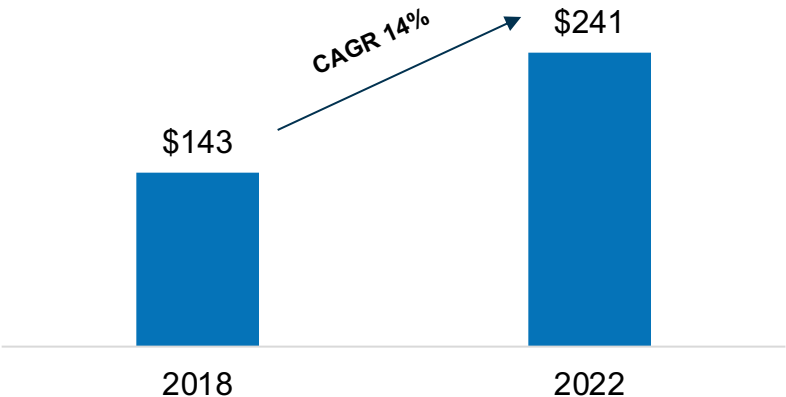
# The European IoT market is set to witness some rapid growth

- According to estimates by IDC, the European IoT market is estimated to measure approximately \$171B for 2019. That would be nearly 20% higher than in 2018
- The strong growth is expected to continue in the coming years, and the market is estimated to grow to ~\$241B by 2022
- The retail and consumer goods segments are together expected to account for nearly \$48B or 23% of the total market share
- Omni-channel operations will be the single largest use case within the retail sector
- Among the various sub-industry components, in-store contextualized marketing (retail) is expected to clock the highest 5-year CAGR of 27.5% between 2017 and 2022

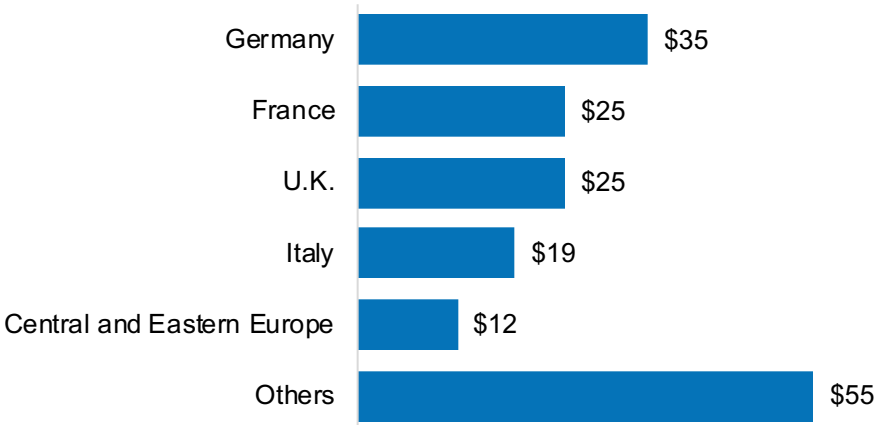
Industry-wise IoT spending (2019)



IoT spending in Europe (\$ billion)



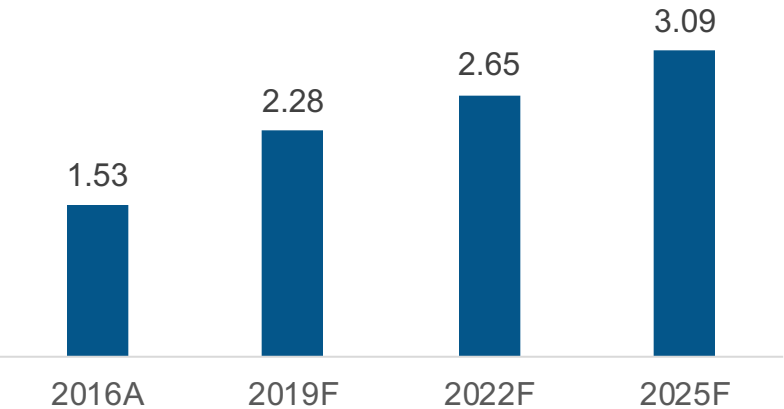
Top IoT spenders for 2019 (\$ billion)



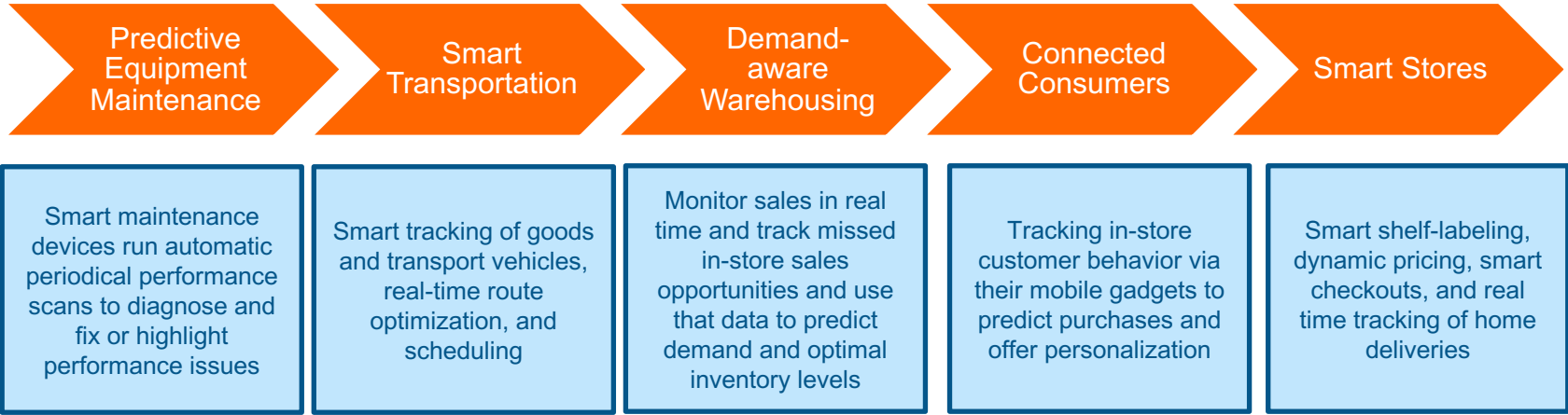
# IoT applications present unique solutions for retailers

- IoT in Retail Market is a network of connected objects embedded with sensors.
- Devices include smartphones, tablets, wearables, smart signage, cameras, beacons, RFID tags, and sensors.
- Using data from these devices, retailers are able to gain deep insights into how a customer behaves (including movement, gestures, time spent in particular aisles, etc.) while shopping in-store
- Key applications of IoT for retailers include smart-store applications, connected consumer and supply chain

Active IoT connections in retail in the EU (millions)



## Areas where retailers are taking advantage of IoT






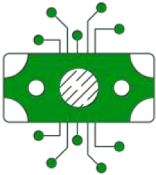

# Europe still lags behind the US and APAC in IoT adoption

**2014:** According to a European Commission study, the market value of the IoT in the EU was estimated to surpass €1T by 2020; however, the industry still lacks strong government support in terms of a dedicated policy

**March 2015:** the Alliance for IoT Innovation was launched by the European Commission towards creation of an innovative and industry driven European IoT ecosystem—presently the Alliance for IoT Innovation is the largest European IoT Association

**May 2015:** the Digital Single Market Strategy was adopted underlining the need to avoid fragmentation and to foster interoperability for IoT to reach its potential

The key focus areas of the strategy include:

	<b>Better access to online goods for consumers and businesses</b> Making the EU's digital world a seamless and level marketplace to buy and sell.
	<b>The right environment for digital networks and services</b> Designing rules to match the pace of technology evolution, including developing digital infrastructure, such as ending roaming charges, rollout of next-gen 5G mobile networks, and the Action Plan on FinTech
	<b>Economy and society</b> Equipping people with the right digital skills by bringing together Member States, companies, social partners, non-profits, and education providers through the "Digital Skills and Jobs Coalition"

- While Europe has been an early adopter of various IoT application, some of them as early as in 2015 and 2016, in recent years has lagged behind the US and Asia-Pacific in terms of investment and number of use cases in IoT
- As per estimates by PwC (Global Digital Operations Study 2018), just 5% of European manufacturers are “digital champions,” versus 11% in the US and 19% in Asia-Pacific

# European Internet of Things funding landscape



# IoT: Private placements in Europe (1/2)

Date	Target	Buyers	Deal Size (\$M)
5/14/2019	Wirepas Ltd.	Finnish Industry Investment Ltd; Inventure Oy; Environmental Technologies Fund LP; Environmental Technologies Fund LP; KPN Ventures; Vito Ventures Management GmbH	\$16.1
4/25/2019	Ekkono Solutions AB	Almi Invest AB; Superclean Scandinavia AB; Walerud Ventures	\$2.0
4/24/2019	ComQi Holdings Limited	AU Optronics Corp.	\$15.0
12/3/2018	ObjectBox Limited	Vito Ventures Management GmbH; Cavalry Ventures Management GmbH	\$2.0
11/8/2018	Exein S.p.A.	United Ventures	\$2.3
3/27/2018	GreenCom Networks AG	MVP Management GmbH; SET Ventures; MVP Fund II GmbH & Co. KG.; Macdoch Ventures	\$1.2
1/31/2018	Hxperience SAS	Axeleo SAS; Axeleo Capital I, FPCI	\$1.7
12/22/2017	Triggi B.V.	NA	\$1.3
9/18/2017	AppyParking Limited	Breed Reply Investments Limited; Aviva Ventures	\$3.0
8/11/2017	Device Authority Ltd	USCIM Fund XXX Device Authority, LLC	\$10.0
7/25/2017	Zeetta Networks Limited	IP Group Plc; Breed Reply Investments Limited; Bloc Ventures Limited	\$2.1
7/16/2017	Cubic Telecom Limited	QUALCOMM Ventures; Ireland Strategic Investment Fund; Valid Soluciones Tecnológicas S.A.U.; Audi Electronics Venture GmbH	\$47.3
7/10/2017	Drayson Technologies Limited	Oxford University Hospitals NHS Trust; University Of Oxford, Endowment Arm; Woodford Asset Management LLP	\$12.9
7/4/2017	GreenCom Networks AG	MVP Management GmbH; SET Ventures	\$3.4
3/14/2017	EVERYTHNG Limited	Samsung Venture Investment Corporation; Atomico Investment Holdings Limited; Cisco Investments; Dawn Capital LLP; BHLF LLC; Sway Ventures; Next Generation Ventures Limited; Advance Venture Partners, LLC; Bloc Ventures Limited	\$24.8
1/25/2017	SoapBox Labs Ltd.	Enterprise Ireland, Investment Arm; Innovative HPSU Fund; Elkstone Capital International Services Limited	\$1.3
1/23/2017	Waylay NV	Participatiemaatschappij Vlaanderen NV; Ark Angels Activator Fund N.V.	\$1.3
1/18/2017	TrackNet Inc	Gemtek Technology Co., Ltd.; Minol Zenner SA	\$7.0
12/14/2016	Avanquest SA (nka:Claranova S.A.)	NA	\$2.2
10/19/2016	Device Authority Ltd	Alsop Louie Partners; Tern Plc	\$3.1
10/18/2016	Smartfrog Ltd.	e.ventures; Target Global	\$22.0
9/14/2016	Wirepas Ltd.	Inventure Oy; Environmental Technologies Fund LP; Environmental Technologies Fund LP; Vito Ventures Management GmbH	\$5.1
5/11/2016	Drayson Technologies Limited	Lansdowne Partners Limited; Woodford Asset Management LLP	\$11.6
5/5/2016	DataLoop Software Ltd.	Battery Ventures; Open Ocean Capital Ltd.	\$5.0
4/21/2016	Cryptosoft Ltd. (nka:Device Authority Ltd)	Alsop Louie Partners; Tern Plc	\$1.6
2/11/2016	Smartfrog Ltd.	e.ventures; Target Global	\$5.0
1/25/2016	VT Networks Ltd.	NA	\$1.3
1/25/2016	Zeetta Networks Limited	IP Group Plc; Breed Reply Investments Limited	\$1.8
1/16/2016	AppyParking Limited	Aviva Ventures	\$1.5
11/19/2015	Davra Networks Limited	Delta Partners Limited; Dublin Business Innovation Centre, Investment Arm; Investec Ventures Ireland Ltd; Venture Capital Investment Management Limited; AIB Seed Capital Fund L.P.	\$1.6

# IoT: Private placements in Europe (2/2)

Date	Target	Buyers	Deal Size (\$M)
10/5/2015	Smartfrog Ltd.	e.ventures	\$5.0
8/27/2015	Wirepas Ltd.	Inventure Oy; Inventure Fund II; Vito Ventures Management GmbH	\$3.4
6/8/2015	EVERYTHING Limited	Samsung Venture Investment Corporation; Atomico Investment Holdings Limited; Cisco Investments; Dawn Capital LLP; BHLP LLC	\$7.5
5/4/2015	ScanTrust SA	SOSV LLC (nka:SOSV); AngelVest	\$1.2
3/26/2015	Flexeye Ltd.	KPMG LLP (United Kingdom)	\$4.5
5/6/2015	Cubic Telecom Limited	QUALCOMM Ventures; Audi Electronics Venture GmbH	\$20.4
Min			\$1.2
Mean			\$7.2
Median			\$3.2
Max			\$47.3

# IoT: M&A in Europe

Date	Target	Acquirer	Transaction Size (\$M)	Enterprise Value	LTM Revenue	EV / LTM Revenue
12-03-18	SDH Holding SA/SDATAWAY SA	Intretech (Hk) Co., Limited	\$36.1	\$52.3	\$20.1	NA
02-06-18	ComQi Holdings Limited	AU Optronics Corp.	\$28.0	\$28.0	NA	NA
12-21-17	SES-imagotag	BOE Smart Retail (Hong Kong) Co. Limited	\$132.0	\$502.7	\$188.0	2.7x
12-17-17	Gemalto N.V.	Thales S.A.	\$6,718.5	\$5,938.4	\$3,528.3	1.8x
11-20-17	Flowscape AB	Crowdsoft Technology AB (publ) (nka:Flowscape Technology AB (publ))	\$15.5	\$8.3	NA	NA
06-20-17	Carriots S.L.	Altair Engineering Inc.	\$6.7	\$6.7	NA	NA
03-13-17	InfraAdvice Sweden AB	Techstep ASA	\$2.1	\$2.0	\$2.0	1.0x
01-04-17	Valtech SE	SiegCo SA	\$30.0	\$340.2	\$209.5	1.6x
08-01-16	Fleetmatics Group PLC	Verizon Communications Inc.	\$2,377.7	\$2,194.0	\$310.7	6.8x
07-21-15	FootFall Limited	Tyco International plc	\$59.8	\$60.0	\$40.9	1.5x
Min			\$2.1	\$2.0	\$2.0	1.0x
Mean			\$940.6	\$913.3	\$614.2	2.6x
Median			\$33.0	\$56.1	\$188.0	1.7x
Max			\$6,718.5	\$5,938.4	\$3,528.3	6.8x

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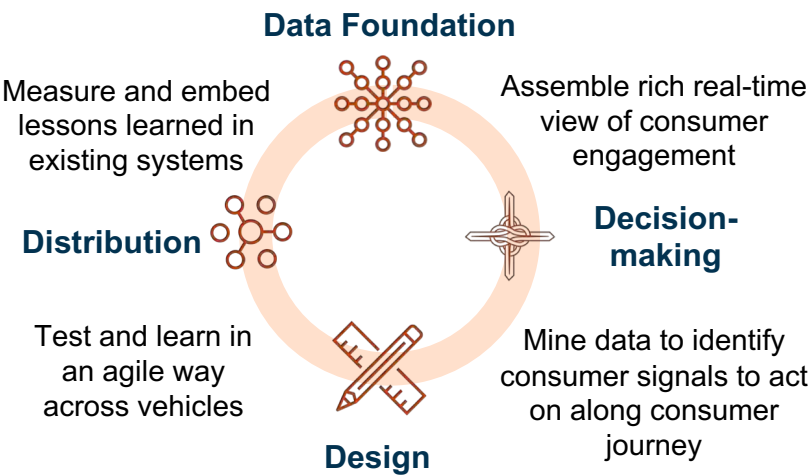
# Retail Personalisation in Europe

# The new topography of personalisation in European retail

## Overview of personalization in Europe

- 56%<sup>(1)</sup> of consumers in Europe feel personalised offers and promotions are important to their shopping experience; 38% of them would prefer real-time personalised offers
- Approval of General Data Protection regulation will have great impact on retailers as they would have to invest more in data privacy infrastructure
- A report by IDC and Open Evidence on the European data economy anticipates the data market in the EU to reach €106.8B by 2020 with a annual growth rate of 15.7% since 2016
- Personalisation is key for German retailers, with over half of them expecting to spend >€1M to achieve this
- 42%<sup>(1)</sup> of UK marketers identified “personalisation” as one of their top priorities
- There’s a growing trend for consumers to want visibility into the entire journey of their transactions—from production to delivery

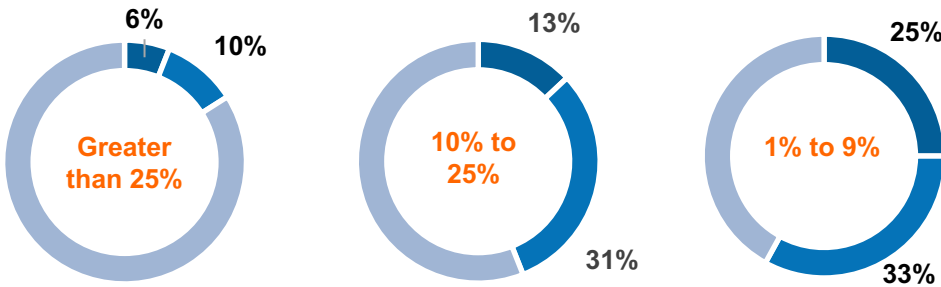
## End-to-end relationship with personalization



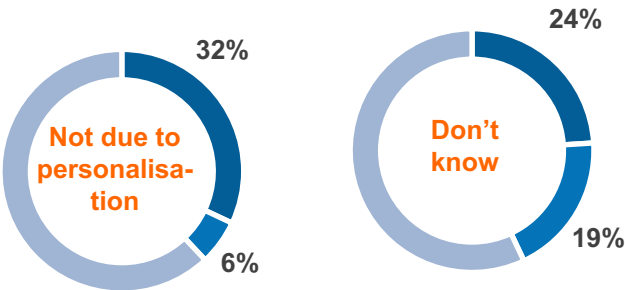
Personalisation starts with getting the data about the customers, analyzing it and getting meaningful result

## Revenue trend because of personalization

### Revenue increased over the past 2 years

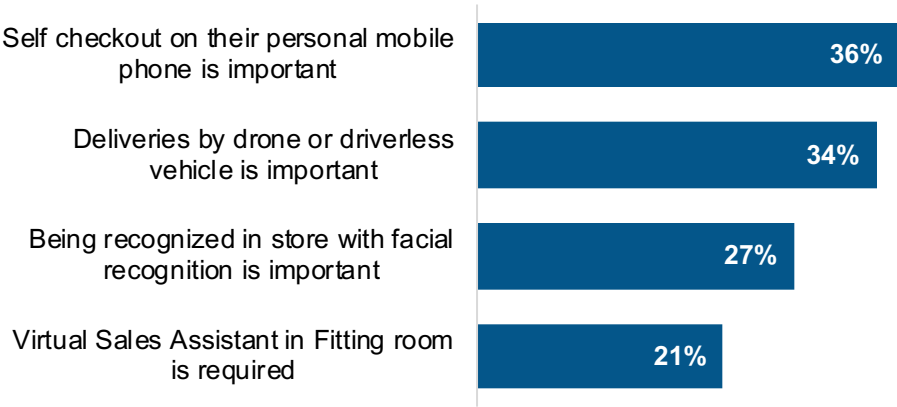


### Revenue expected to increase by 2020

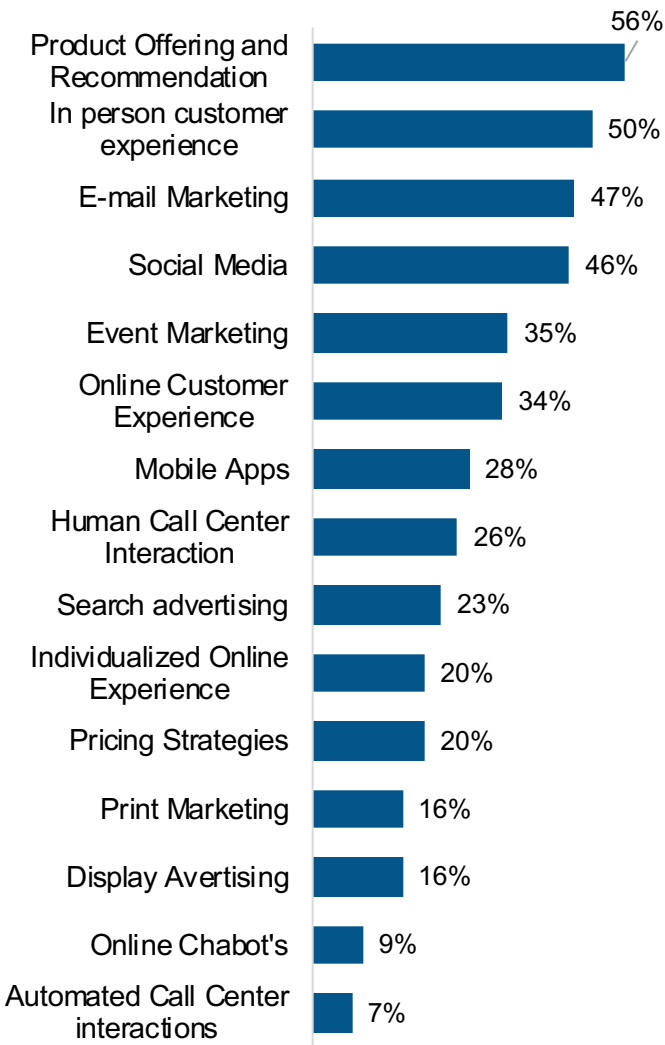


# Organisations are quickly implementing personalisation strategies

## Technical preference of European consumers<sup>(1)</sup>



## Strategies used by European retailers<sup>(2)</sup>



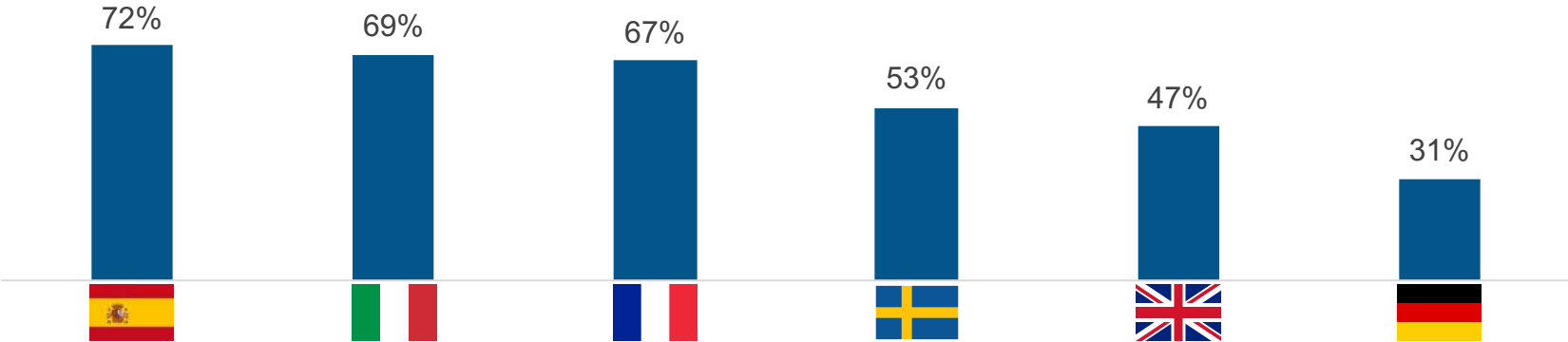
## Personalisation revolution in Europe

- According to Social Media Today, 96% of marketers believe that personalisation enhances a customer relationship
- European marketers spend a slightly smaller share of their marketing budget on advertising and a slightly smaller share on data and analytics
- European marketers show consistency but slightly lower adoption of advanced marketing systems such as DMP, cross-channel engagement, and flexible attribution models
- European marketers are less likely to prioritise first-party data than US marketers
- In Europe, there is the opportunity to introduce advanced tech to enhance consumer experience, both in-store and in-home



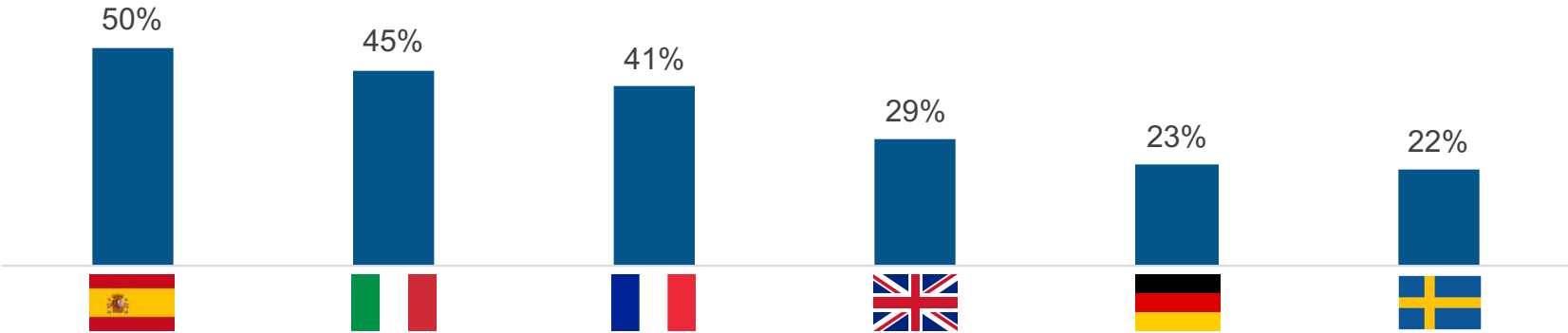
# Marketers view personalisation as critical to drive their most important metrics

% of those who say personalised offers and promotions are important to their shopping experience <sup>(1)</sup>



There is still the opportunity to build trust with these consumers, particularly in Spain, Italy, and France where consumers believe personalised offers are important

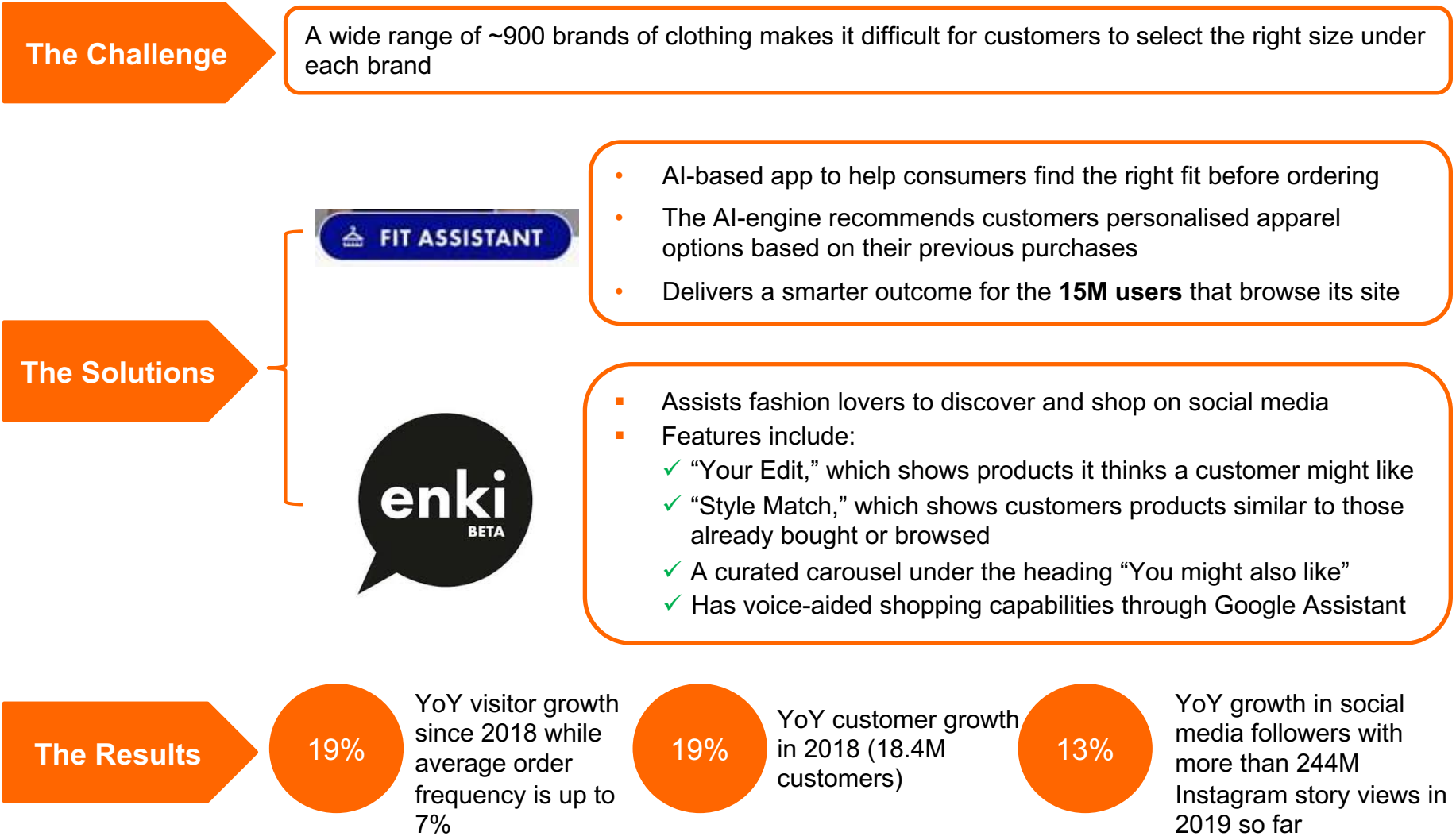
% of those who feel that using VR at home to navigate personalised in-store experience would be “awesome” <sup>(1)</sup>



In Europe there is the opportunity to introduce advanced tech to enhance the consumer experience, both in-store and in-home

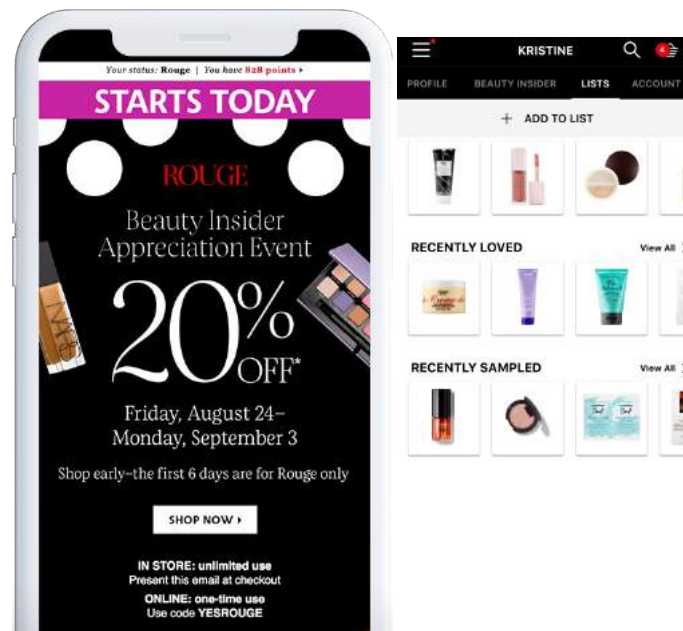
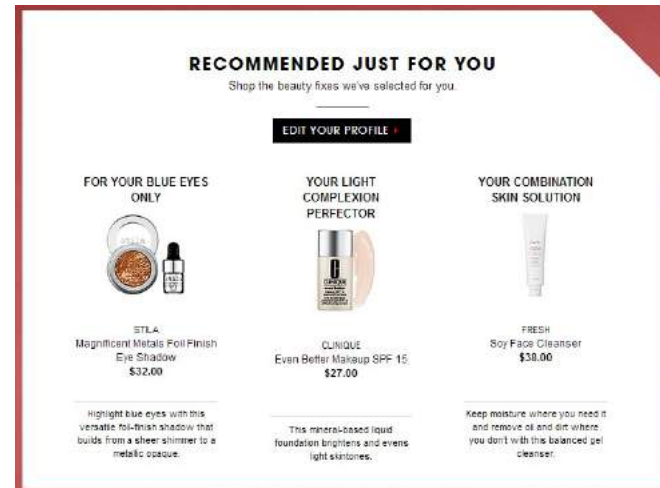


# Case Study: ASOS launches digital assistant to guide customers through personalisation

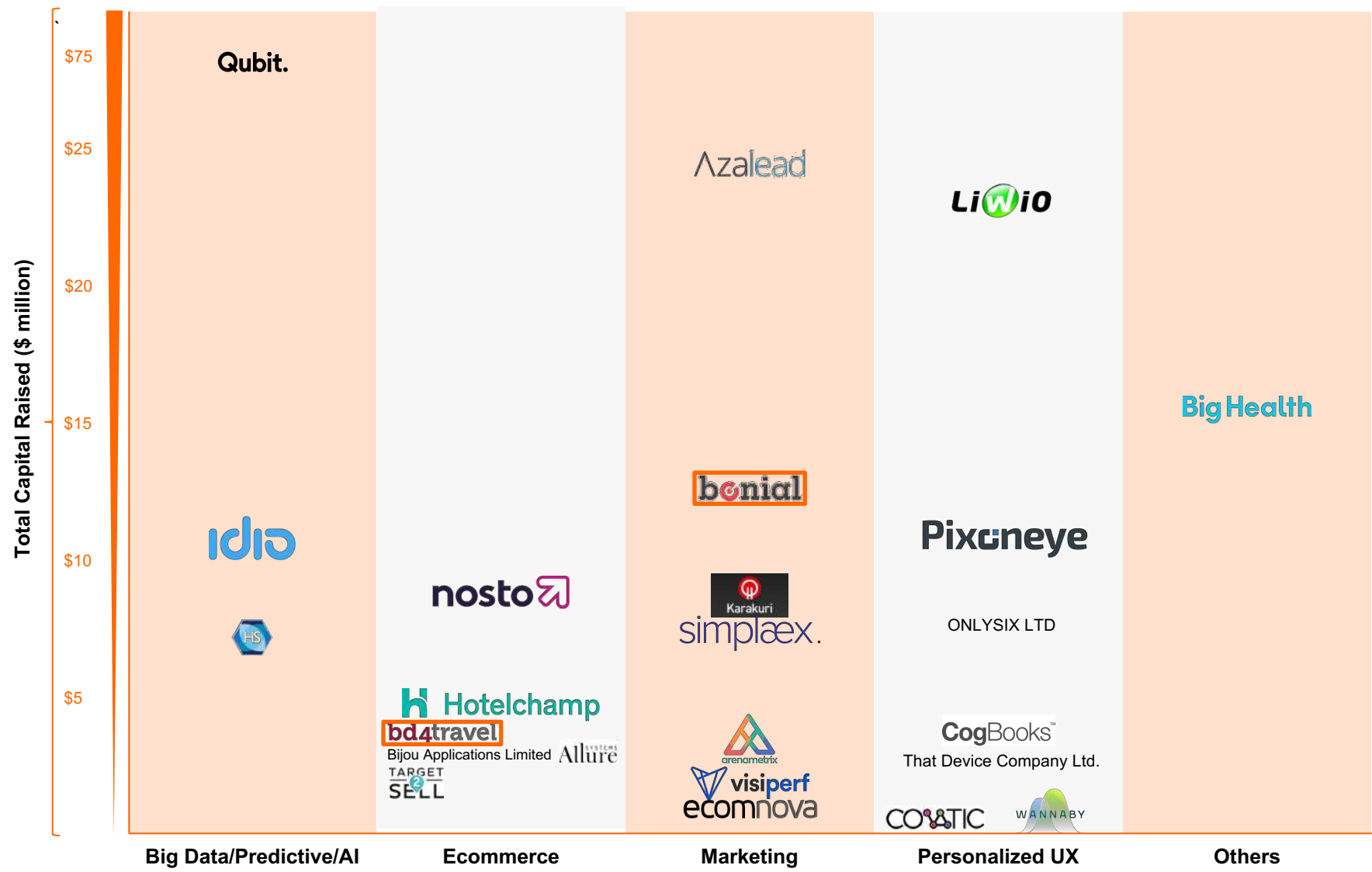


# Sephora was a superstar according to Salithru's Retail Personalisation Index in 2018

- **Beauty Insider program:** Sephora utilises data from its Beauty Insider program to send personalised communications and recommendations
  - Leverages data from a customer's online shopping activity in-store by employing beacons, which send notifications when the shopper is near an item they left in a digital shopping cart
  - The program is abundant with lavish rewards and gifts, allowing shoppers to rack up points and redeem deluxe products or physical experiences
  - The points and status are always connected onsite, in-store, in-app, and in-email
- **Cross-channel optimization:** Sephora customer experience offers a seamless integration across all channels, including its physical stores
  - The customer commences shopping on Sephora's website and find the same products waiting in their cart on the app, with relevant push notifications and in-app messaging about products that the customer love or forgot to purchase
- **Mobile app:** Sephora's best-in-class mobile app leads in customer experience and personalization
  - Sephora's in-app notification center serves as the clients own personal inbox of unique beauty picks, product quizzes, purchase history and discounts



# Retail personalization funding landscape



# Personalization: Private placements in Europe

Date	Target	Buyers	Deal Size (\$M)
5/9/2019	Karakuri Ltd	Ocado Group plc; Hoxton Ventures LLP; Firstminute Capital	\$9.1
10/10/2018	Covatic Ltd	Creative England Limited; Mercia Fund Managers; Oxford Sciences Innovation; MEIF Proof of Concept & Early Stage Fund	\$1.1
9/26/2018	Arenamatrix	Publicis Groupe S.A.; Bpifrance Investissement; Newfund Management S.A.; Kima Ventures	\$2.9
9/18/2018	Nosto Solutions Oy	Finnish Industry Investment Ltd; IDInvest Partners SA; Open Ocean Capital Ltd.	\$7.4
9/14/2018	Azalead Software SAS	IDInvest Partners SA; Raise Investissement, SAS; Raise Ventures, SAS, SCR	\$11.7
5/27/2018	Picsoneye Segmentation Innovations Limited	Octopus Ventures Ltd.	\$8.0
5/7/2018	Visiperf SAS	Bpifrance Investissement; Crédit Agricole Régions Investissement SAS; Cafci S.A.S.; Invest PME SA; Caisse d'Epargne de Bourgogne Franche-comté; Generis Capital Partners	\$2.7
5/3/2018	WANNABY	Haxus; Bulba Ventures	\$2.0
2/26/2018	Simplaex GmbH	Harbert Management Corporation	\$6.0
1/2/2018	ONLYSIX LTD.	NA	\$7.5
11/1/2017	Soda Software Labs Limited	NVM Private Equity LLP; Yorkshire Bank PLC, Investment Arm; Clydesdale Ventures, LLC	\$7.3
9/5/2017	Allure Systems SAS	Calao Finance; CapHorn Invest - Société de Gestion	\$3.6
5/30/2017	LIWIO S.A.R.L	Partech Partners; Omnes Capital S.A.S.; Xange Private Equity, S.A.; Korelya Capital	\$17.0
5/11/2017	Simplaex GmbH	Target Partners GmbH; High-Tech Gründerfonds Management GmbH; Antheria Holding AG	\$2.6
9/28/2016	Picsoneye Segmentation Innovations Limited	Telefónica, S.A.; Collider	\$3.1
8/22/2016	HotelChamp B.V.	Investion B.V.	\$4.8
7/27/2016	Big Health	Index Ventures; Kaiser Permanente Ventures; Octopus Ventures Ltd.; JamJar Investments	\$12.0
6/17/2016	CogBooks Ltd.	The Scottish Investment Bank; Nesta Investment Management LLP; Nesta Impact Investments 1 Limited Partnership; DC Thomson Ventures	\$1.8
3/23/2016	Bijou Applications Limited	Blenheim Chalcot Management Limited	\$2.8
2/29/2016	LIWIO S.A.R.L	Omnes Capital S.A.S.; Bpifrance Investissement; Xange Private Equity, S.A.; Kima Ventures	\$5.4
2/22/2016	Qubit Digital Limited	Accel; Goldman Sachs Group, Merchant Banking Division; Sapphire Ventures LLC; Salesforce Ventures	\$40.1
12/15/2015	idio Ltd.	Notion Capital Partners LLP	\$2.0
9/11/2015	Target2sell	Internet Attitude SCRL	\$1.1
8/4/2015	Ecomnova Limited	NA	\$1.6
5/19/2015	bd4travel GmbH	Talis Capital Limited; Hoxton Ventures LLP	\$4.2
3/31/2015	Bonial International GmbH	Axel Springer SE	\$12.0
3/26/2015	That Device Company Ltd.	Ziegler Link-Age Longevity Fund, L.P.; Ziegler Link-Age Management, LLC	\$3.0
Min			\$1.1
Mean			\$6.9
Median			\$4.2
Max			\$40.1

# Personalization: M&A in Europe

Date	Target	Acquirer	Transaction Size (\$M)	Enterprise Value	LTM Revenue	EV / LTM Revenue
11-27-18	bd4travel GmbH	dnata	NA	NA	NA	NA
07-31-18	LeapThree Limited	Ayima Group AB (publ)	\$3.9	\$3.9	\$1.1	3.6x
05-02-18	Findify AB	Namaste Technologies Inc.	\$11.4	\$11.7	\$0.5	23.2x
04-13-18	Jordenen SA	Azulis Capital; Middle Market Fund V	\$12.3	\$18.4	NA	NA
01-29-18	GK Software SE	NA	\$2.2	\$282.5	\$112.0	2.5x
03-22-17	Flocktory LTD	Qivi plc	\$14.4	\$17.5	NA	NA
08-20-15	Maxymiser Ltd	Oracle Corporation	\$160.0	\$160.0	NA	NA
Min			\$2.2	\$3.9	\$0.5	2.5x
Mean			\$34.0	\$82.3	\$37.9	9.7x
Median			\$11.8	\$18.0	\$1.1	3.6x
Max			\$160.0	\$282.5	\$112.0	23.2x

2H 2019

# Digital Marketing in Europe

# Key trends in European digital marketing






## Outcomes of 2018 European Digital Marketing Survey <sup>(1)</sup>

- **42%** of marketers plan to modify marketing strategies to respond to the technological change
- **38%** of marketers use **Google Analytics** to measure the overall performance of digital marketing
- **38%** of marketers claim **email marketing to be the main channel** of customer communication
- **60%** of marketers plan to improve **personalization strategies**

## Disruptors influencing digital marketing evolution



## Digital marketing trend in Europe

	<b>1. GDPR will drive data protection legislation:</b> GDPR will have an impact on personalised digital marketing as all the companies commencing business in Europe need to follow it
	<b>2. Walled gardens will come under greater scrutiny:</b> Tech giants have come under great scrutiny regarding how they share and protect user data, their corporate footprints, and the taxes they pay
	<b>3. Video ad spend will soar:</b> Private Marketplaces will win a growing share of video ad spend as marketers aim for premium inventory and better performance by displaying video ads
	<b>4. Brands and retailers will team up on data:</b> Various retailers develop their omni-channel capabilities through collaboration and data sharing. For brands, consumer insights are critical for making the right investment decisions for their product pipeline
	<b>5. AI will gain wider adoption in digital marketing:</b> In 2018, a large number of digital marketing companies announced their investments in AI to develop solutions offering advanced personalisation and better user engagement using machine learning
	<b>6. Digital ad operations will become more in-house:</b> Cloud-based and AI solutions will enable brands to shift their digital media buying operations from agencies to in-house initiatives
	<b>7. Voice and visual tech marketing usage will grow:</b> The use of visual and voice tech in digital marketing will become more apparent in 2019. Text search and visuals are important when consumers search for products



# The emerging trend of digital marketing in Europe

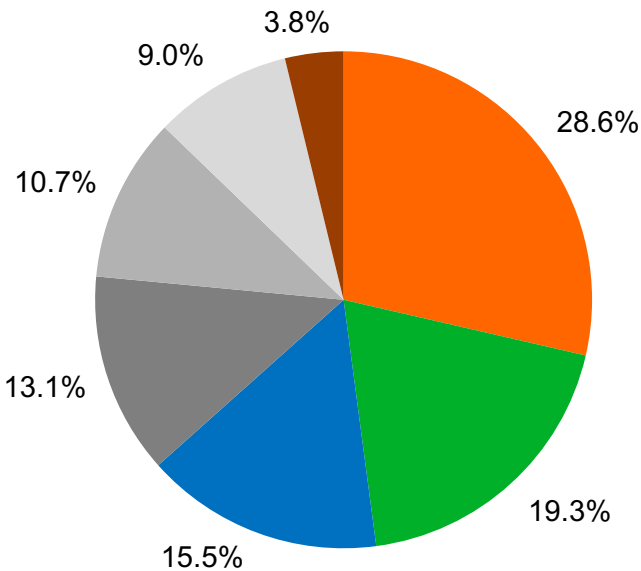
## Digital marketing technique



8 key digital marketing communication techniques which involves the essential toolkits used to structure a good marketing strategy

## High-end technology marketers are expecting<sup>2</sup>

- Cross-channel recommendations on Machine learning / AI
- Product analytics and intelligence for e-commerce
- Facebook shopping
- Automations for live chat and web push
- Revenue attribution
- Markups for G-mail
- Other




The most desired new generation technologies are solutions tailored to the ecommerce industry: Cross-channel recommendations using AI, product analytics and product intelligence for ecommerce

# The next step in digital marketing evolution: Voice AI

Voice impacts entire customer experience—from discovery through purchase


- **Prioritize the voice experience:** With their conversational user interface, Voice Assistants are putting a human touch into technology. With powerful AI analytics, devices can assess tone and sentiment in the user’s voice. A good voice strategy can enhance the interaction of a customer with the brand.
- **Rethink search strategy:** Brands should refine their SEO so that voice assistants can pick up their products first.
- **Improve customer service:** Voice AI can help here by reminding the customer to send back all the unwanted items by a certain date; ask them for reasons of return then mail them, and print the form for the customer to fill in.
- **Connect digital and voice initiatives, and gain new customer insight from conversations:** AI is being used to find data most meaningful to businesses by analysing conversations in real time and identifying language patterns.
- **Know your audience:** Long-term marketing trends predict that contextualizing will extend to all the devices the customer uses.
- **Find more customers who want to talk:** Marketers need to understand who is calling, which of their marketing tactics are driving high-value calls, and how trends differ by demographic and industry.

## An estimate of communication in the next 2 years




**Customer Acquisition**

- Voice search is changing how consumers learn about their brand
- With mobile phones, it becomes easier for consumers to consult with an expert



**Customer Engagement**

- Voice assistants are enabling deeper and more frequent touch points with their brand
- Voice-enabled shopping results in repeat purchases for brand loyalties



**Customer Support**

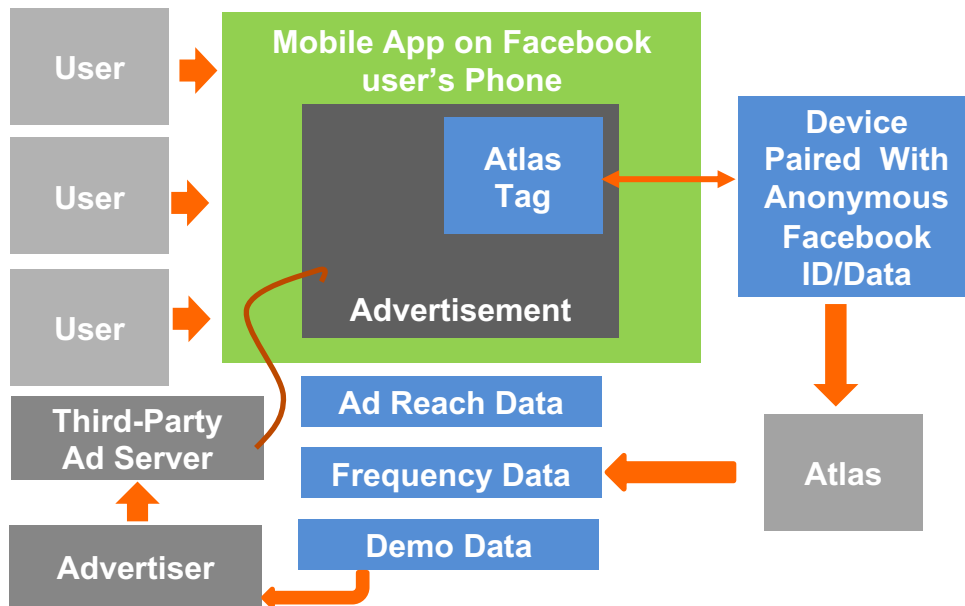
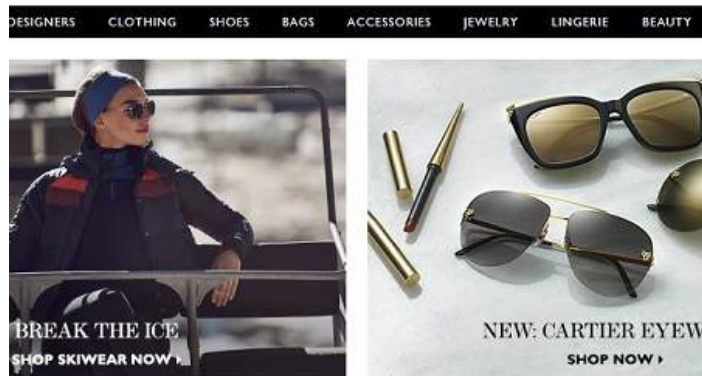
- Improved natural language are automating more routine support tasks, while advances in AI are giving marketers the ability to mine live conversions

## New power of voice



# Net-A-Porter uses people-based measurement results to target their audience and allocate budgets

## NET-A-PORTER



## CHALLENGE

- Net-a-Porter and Mr Porter wanted to better understand the ROI of media investments on mobile. More specifically, which mobile ads effectively drive ad recall and those that drive people to buy their products

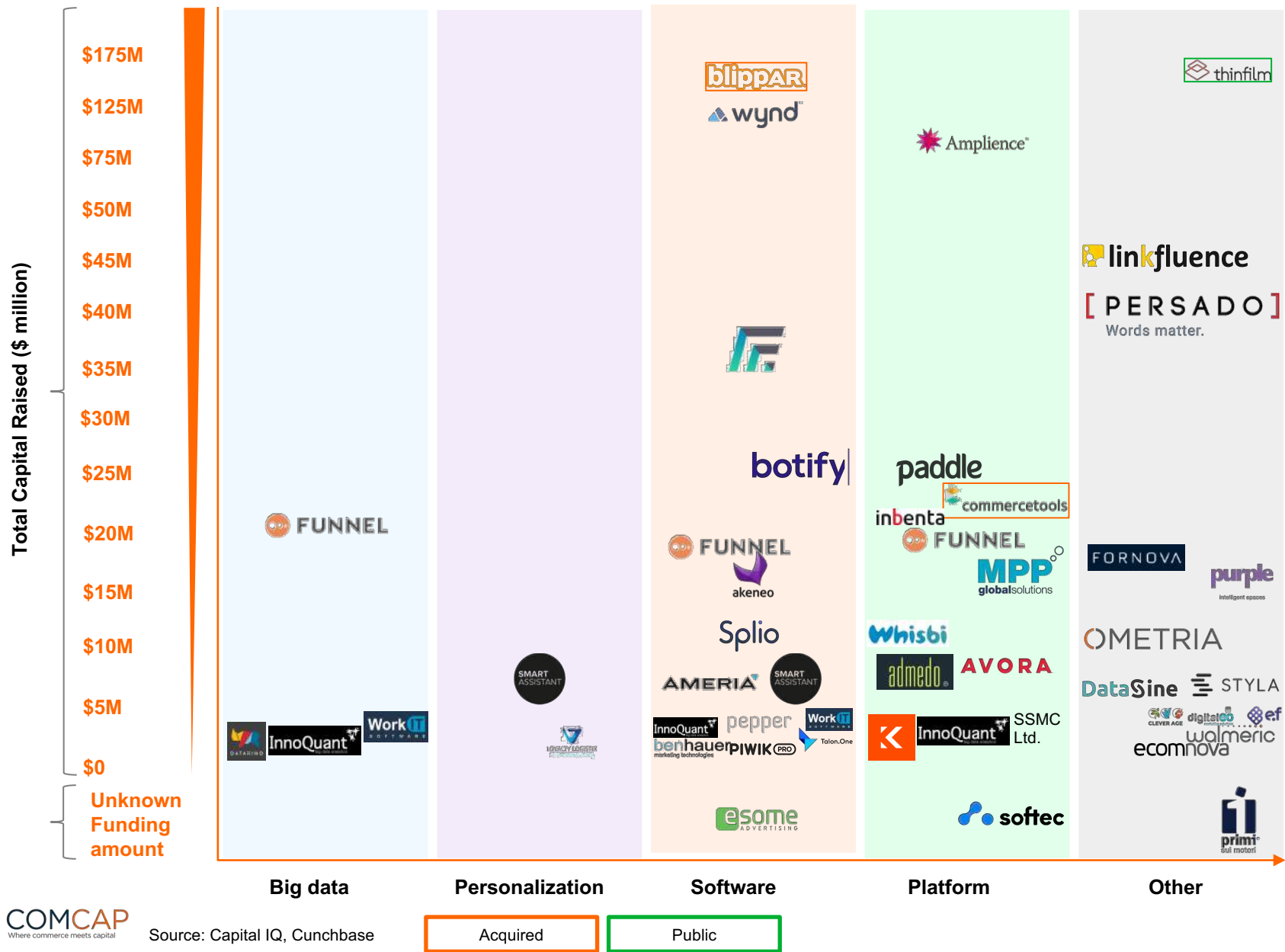
## SOLUTION

- The fashion ecommerce store decided to use people-based measurement tools of **Facebook Atlas** rather than just traditional cookies to gain much deeper insights to their customers path to purchase and, in turn, allocate media budgets accordingly.

## RESULT

- ✓ Better understanding of the impact of mobile activity
- ✓ By fully understanding the path to purchase, they found out which channels they were overinvested in and were able to make smart adjustments
- ✓ 29% increase in sales attribution
- ✓ 60% uplift in sales attributed to mobile
- ✓ Discovered 38% of all conversions included a mobile ad or interaction along the way
- ✓ 16% of all conversions took place on a mobile

# European digital marketing funding landscape



# Digital marketing: Private placements in Europe (1/2)

Date	Target	Buyers	Deal Size (\$M)
5/6/2019	Styla	Atlantic Internet GmbH; Hi Inov SAS; Cherry Ventures Management GmbH; Senovo Capital Management GmbH	\$4.5
3/6/2019	Walmeric Soluciones, SL	Segtech Ventures	\$2.3
2/26/2019	BOTIFY SAS	IDInvest Partners SA; Ventech SA	\$19.9
2/25/2019	Funnel Operations AB	Industrifonden; Balderton Capital (UK) LLP; Zobito AB; Zobito; Oxx Ltd	\$8.0
2/7/2019	DataSine Limited	Pentech Ventures LLP; Cathay Capital Private Equity; Propel Venture Partners LLC; Sistema Venture Capital; C Entrepreneurs; Twin ventures	\$5.2
1/22/2019	Thematic Groupe SAS	Natixis S.A.; Sofina Société Anonyme; Bnf Capital Limited; Sodexo Ventures	\$81.8
1/15/2019	Avora Ltd	Albion Venture Capital Trust PLC; Albion Capital Group LLP; Crane Venture Partners LLP	\$6.5
12/18/2018	Talon.One GmbH	Iris Capital	\$3.4
12/6/2018	AMERIA AG	NA	\$8.5
11/6/2018	Performance Horizon Group Limited	GP Bullhound LLP, Investment Arm	\$9.0
11/5/2018	Paddle.com Market Limited	Notion Capital Partners LLP; BUSINESS GROWTH FUND LIMITED; BGF Ventures; Kindred Capital	\$8.0
10/1/2018	Linkfluence S.A.S.	Kreaxi; BNP Paribas Développement SA, SCR; Sigma Gestion; Tikehau Capital; Ring Capital	\$20.8
9/19/2018	commercetools GmbH	REWE Digital GmbH	\$17.0
9/17/2018	Blippar.Com Limited	QUALCOMM Ventures; Lansdowne Partners (UK) LLP; Lansdowne Partners International Limited; Candy Ventures Sarl	\$37.0
6/15/2018	Blippar.Com Limited	QUALCOMM Ventures	\$26.0
4/25/2018	Amplience (UK) Limited	Octopus Ventures Ltd.; Columbia Lake Partners	\$37.0
1/22/2018	E Fundamentals (UK) Ltd.	Downing LLP, Investment Arm; Downing Ventures; Downing Ventures EIS	\$3.5
12/13/2017	Paddle.com Market Limited	Notion Capital Partners LLP; BUSINESS GROWTH FUND LIMITED; BGF Ventures; MacPaw Inc.	\$12.5
10/31/2017	Softec S.p.A.	NA	\$1.8
10/23/2017	Thin Film Electronics ASA	NA	\$1.4
10/20/2017	DataSine Limited	Cathay Capital Private Equity; Force Over Mass Capital LLP; Sistema Venture Capital; C Entrepreneurs	\$1.2
10/11/2017	Ometria Ltd	Saatchinvest Ltd.; Force Over Mass Capital LLP	\$6.0
9/19/2017	Funnel Operations AB	Industrifonden; Balderton Capital (UK) LLP; Zobito AB; Zobito	\$10.0
9/4/2017	Smart Information Systems GmbH	Beringea LLC; ProVen VCT plc; ProVen Growth & Income VCT PLC	\$6.0
7/31/2017	Datarino Sp. z o. o.	Luma Investment S.A.; Luma Ventures	\$1.6
7/11/2017	Primi sui Motori S.p.A (nka:Prismi S.p.A.)	Atlas Capital Markets Limited; Atlas special opportunities LLC	\$4.0
5/4/2017	MPP Global Solutions Ltd.	Albion Ventures LLP (nka:Albion Capital Group LLP); Grafton Capital Limited	\$15.5
5/2/2017	Fornova UK Limited	JAL Ventures Ltd.; Waypoint Capital; Deutsche Telekom Capital Partners Management GmbH	\$17.0
3/20/2017	Piwik PRO Sp. z o.o.	Warsaw Equity Group	\$2.0
3/20/2017	Akeneo SAS	Partech Partners; Alven Capital Partners	\$13.0
2/15/2017	Persado UK Limited	European Investment Bank	\$26.5
2/13/2017	Primi sui Motori S.p.A (nka:Prismi S.p.A.)	NA	\$3.5
11/16/2016	Thematic Groupe SAS	Alven Capital Partners; Orange Capital SA; BPI France SA; Orange Digital Ventures; Sodexo Ventures	\$31.6
10/17/2016	Spilo SAS	BNP Paribas Développement SA, SCR; Bpifrance Investissement; Amundi Private Equity Funds S.A.; Fonds Ambition Numérique	\$11.0



# Digital marketing: Private placements in Europe (2/2)

Date	Target	Buyers	Deal Size (\$M)
10/7/2016	Linkfluence S.A.S.	Banexi Ventures Partners (nka:Kreaxi); BNP Paribas Développement SA, SCR; Sigma Gestion; Cap Décisif Management SAS; Orkos Capital SAS	\$13.4
9/28/2016	Paddle.com Market Limited	BUSINESS GROWTH FUND LIMITED; BGF Ventures; Kindred Capital	\$3.2
8/19/2016	Purple WiFi Ltd.	NA	\$7.0
7/4/2016	Workit - SAS	Audacia SAS	\$3.7
6/15/2016	Performance Horizon Group Limited	DN Capital; Greycroft; Mithril Capital Management LLC; Greycroft Growth LP	\$15.5
4/30/2016	Primi sui Motori S.p.A (nka:Prismi S.p.A.)	NA	\$1.1
3/2/2016	Blippar.Com Limited	Khazanah Nasional Berhad	\$54.0
2/24/2016	Kaliop SAS	BNP Paribas Développement SA, SCR; Sofilaro S.A.S.	\$2.2
2/23/2016	Benhauer sp. z o.o.	3TS Capital Partners Ltd.	\$6.0
1/19/2016	BOTIFY SAS	IDInvest Partners SA; Ventech SA	\$7.2
1/4/2016	Admedo Ltd	MMC Ventures Ltd; Sussex Place Ventures	\$6.0
11/18/2015	Amplience (UK) Limited	Octopus Ventures Ltd.; SVB Silicon Valley Bank, Investment Arm; Columbia Lake Partners Growth Lending (Holdings), LLC	\$45.0
10/20/2015	SSMC Ltd.	Newable Private Investing; Funding London; Capital Enterprise, Investment Arm; London Co-investment Fund; LBA EIS Roundtable Syndicate Fund 2015	\$1.7
10/6/2015	InnoQuant Strategic Analytics S.L.	CDTI; Inveready Asset Management, S.G.E.I.C., S.A.; Inveready First Capital II, SCR	\$2.0
9/30/2015	Thematic Groupe SAS	Alven Capital Partners; Orange Capital SA; Alven Capital IV; Orange Digital Ventures	\$7.8
8/4/2015	Ecomnova Limited	NA	\$1.6
6/30/2015	Loyalty Logistix Ltd.	Development Bank of Wales Plc	\$1.0
4/29/2015	Styla	Groupe Arnault SAS; Pentland Group plc; Redalpine Venture Partners AG; Atlantic Internet GmbH; West Tech Ventures GmbH; Cherry Ventures Management GmbH	\$2.8
4/28/2015	Digitaleo SAS	Go Capital SAS; ISAI Gestion, SAS; Ouest Ventures III, FPCI	\$4.4
4/9/2015	esome advertising technologies GmbH	Group M Worldwide Inc; Performance Interactive Marketing Alliance	\$15.0
3/26/2015	Amplience (UK) Limited	Octopus Investments Limited; Northstar Ventures; SVB Silicon Valley Bank, Investment Arm	\$10.5
3/6/2015	Blippar.Com Limited	NA	\$45.0
1/21/2015	Clever Age SAS	Ardian	\$2.9
1/14/2015	Purple WiFi Ltd.	Juno Capital LLP	\$5.0
Min			\$1.0
Mean			\$12.5
Median			\$6.8
Max			\$81.8

# Digital Marketing: M&A in Europe

Date	Target	Acquirer	Transaction Size (\$M)	Enterprise Value	LTM Revenue	EV / LTM Revenue
05-21-19	Coheris SA	ChapsVision	\$12.3	\$10.6	\$15.4	0.7x
01-23-19	Blippar.Com Limited	Candy Ventures Sarl	NA	NA	NA	NA
12-20-18	Soft Computing	Multi Market Services France Holdings SAS	\$49.5	\$52.8	\$51.3	1.0x
12-13-18	Adestra Limited	Upland Software, Inc.	\$60.2	\$60.2	NA	NA
11-19-18	Feefo Holdings Limited	Vespa Capital	\$32.9	\$32.7	NA	NA
10-08-18	The Communicator Corporation Limited	j2 Global, Inc.	\$9.9	\$10.0	\$6.4	1.6x
09-19-18	Datatrix B.V.	MailUp S.p.A.	\$7.9	\$8.2	\$0.4	24.0x
07-02-18	Link Mobility Group ASA	ABRY Partners, LLC; ABRY Partners Fund VIII, L.P.	\$535.2	\$509.4	\$213.2	2.4x
06-13-18	CommuniGator Ltd	Blinker	\$21.8	\$21.8	NA	NA
02-06-18	ComQi Holdings Limited	AU Optronics Corp.	\$28.0	\$28.0	NA	NA
12-22-17	Goldbach Group AG	Tamedia AG	\$249.9	\$172.2	\$506.7	0.3x
11-09-17	BeyondBits Media LTD.	Catena Media plc	\$16.6	\$16.7	NA	NA
05-16-17	EBERTLANG Distribution GmbH	Beyond Capital Partners GmbH; Beyond Capital Partners Fund	\$10.6	\$12.5	\$11.1	1.1x
04-24-17	ProspectSoft Ltd	Maven Capital Partners UK LLP	\$7.7	\$7.7	NA	NA
01-30-17	Fredhopper BV	ATTRAQT Group plc	\$31.3	\$30.4	NA	NA
01-19-17	Global Messaging Solutions, S.L.	Link Mobility Group ASA	\$16.6	\$16.6	NA	NA
07-01-16	Valtech BV	Valtech SE	\$22.6	\$22.6	\$21.3	1.1x
12-23-15	diva-e Digital Value Excellence GmbH	EMERAM Capital Partners GmbH; Emeram Capital Partners F	\$72.9	\$75.1	NA	NA
01-14-15	Admoove SAS	AdUX SA	\$2.4	\$2.4	\$2.0	1.2x
Min			\$2.4	\$2.4	\$0.4	0.3x
Mean			\$66.0	\$60.5	\$92.0	3.7x
Median			\$22.2	\$22.2	\$15.4	1.1x
Max			\$535.2	\$509.4	\$506.7	24.0x



2H 2019

# Retail Merchandising in Europe



# ComCap's keys to a successful merchandising offering

*Sensory availability remains as the physical retailer's key advantage over online competitors*

## Sensory factors in merchandising

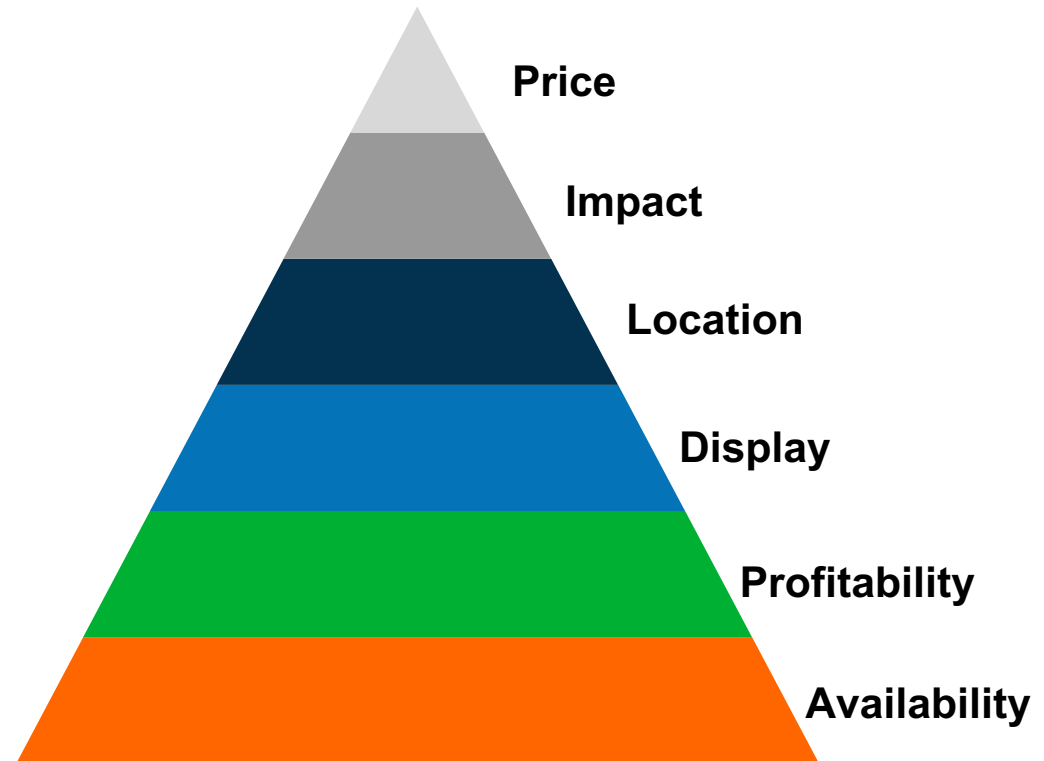
**Visual stimuli** are significant to customers making purchasing decisions as first impressions drive sales

**Color** is the first thing a customer sees subconsciously before entering a store: Every consumer reacts differently to hues

**Discount signage** had a significant effect on behavior: Customer retention and branding effects overcome the initial loss in revenue

**Music** plays a deep impact on customer satisfaction, establishing store ambience

## Key factors in merchandising success



*While technology has evolved since the golden age of retail, the underlying principles of merchandising have not*

# Retailers and consumers are gearing towards better O2O integration

*Retail is getting “omni-channel” with consumer preferences and retail services going digital*

40-50%

European consumers who look up products online before buying online or in store  
Includes checking prices, search for deals, and reading reviews

77%

Gen Z population who would still prefer to shop in store despite the increase in digitisation and a more seamless omni-channel experience

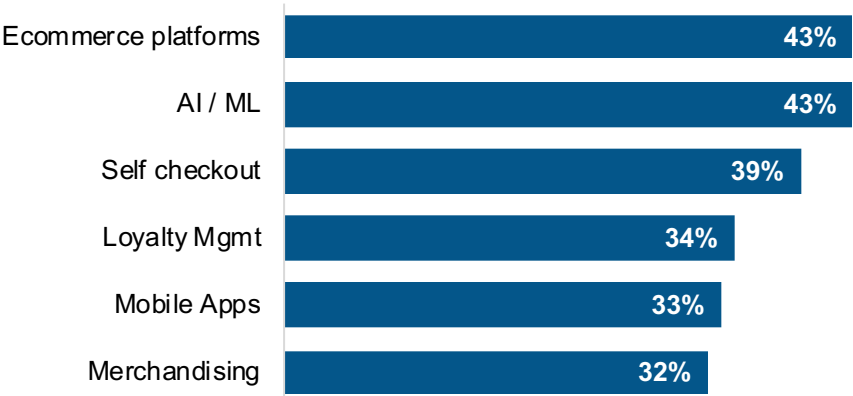
~30%

Consumers who create and maintain their shopping lists online, much ahead of actual buying online or in store

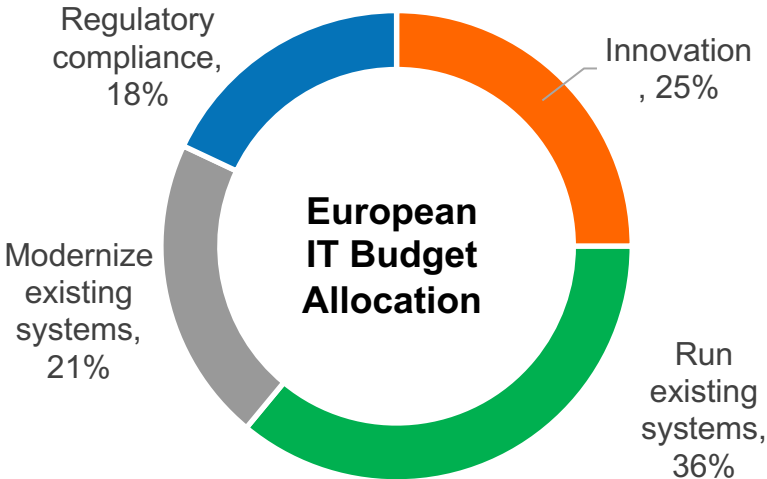
~66%

Consumers who think electronic interactions are replacing face-to-face ones

## Top tech solution investments in Europe (2019)



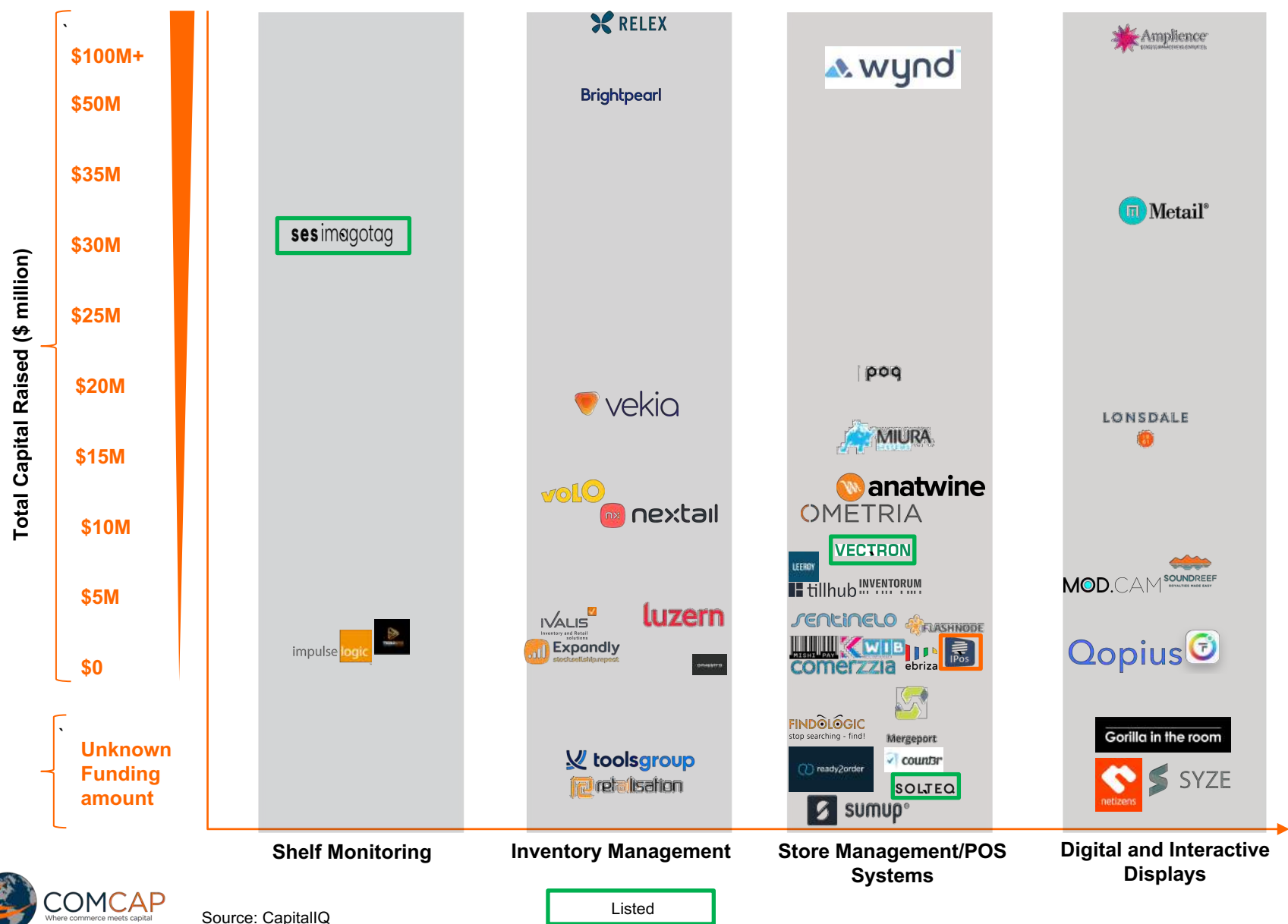
## Nearly half of retailers' 2019 IT budgets to be dedicated to modernization and innovation



# European retailers are adopting a slew of tactics to keep pace with changing consumer preferences

Strategies	Description
<b>Mobile POS</b>	<ul style="list-style-type: none"> <li>Long queues caused European retailers to lose €17.9B in potential sales to competitors during 2017-2018</li> <li>Overall, the European industry lost €16.3B in sales when exasperated shoppers abandoned their purchase completely</li> <li>Mobile point-of-sale (mPOS) devices let shoppers pay from anywhere on the shop floor</li> <li>Other benefits include the ability to set up pop-up stores, free up selling space while reducing hardware, furniture and fixture costs, line busting, as well as in-aisle management</li> <li>Integration of order management with customer info with mPOS can greatly increase conversions</li> </ul>
<b>Hyper Personalization</b>	<ul style="list-style-type: none"> <li>Retailers are investing in the ability to tailor the buying experience and product offering according to each customer's unique taste and preference in order to deepen customer relationships</li> <li>Helps to predict demand better</li> <li>Requires continuous investment with a focus on omni-channel</li> </ul>
<b>Artificial Intelligence</b>	<ul style="list-style-type: none"> <li>AI and machine learning help analyze both structured and unstructured data, and identify complex correlations, which can then be used on several operational efficiencies in terms of demand forecasting, dynamic pricing, inventory management, automation of customer service, and planning targeted marketing campaigns</li> </ul>
<b>AR, VR, Visual and Voice Searches</b>	<ul style="list-style-type: none"> <li>Various brands promote sales using a combination of some or all of these technologies</li> <li>Already nearly half of all Google searches in Europe happen via voice search</li> <li>According to estimates by IDC, total spending on AR/VR products and services in Europe is expected to increase sharply from \$1.06B in 2017 to \$16.84B in 2022, growing at an astonishing CAGR of 74% during the period</li> </ul>
<b>Omni-channel Presence</b>	<ul style="list-style-type: none"> <li>Most retailers have a traditional POS, an in-store clientelling app, a mobile POS, a kiosk, an ecommerce site, probably a mobile app, presence in multiple marketplaces, franchises, pop-up locations, etc.</li> <li>Although in many cases, currently each channel would have different applications and different data sources, the industry is rapidly moving towards a common data source (AI-enabled), and a uniform shopping experience across channels, which is personalized for each customer profile</li> </ul>

# The merchandising funding landscape in Europe



# Merchandising: Private placements in Europe (1/2)

Date	Target	Buyers	Deal Size (\$M)
3/18/2019	ThirdEye, LLC.	Episode 1 Ventures LLP; Octopus Ventures Ltd.; True Capital Limited	\$2.6
2/15/2019	Leeroy Group AB	Norrlandsfonden; RCL Holding AB; Almi Invest AB; Zenith Group; Collector Ventures KB	\$4.7
2/6/2019	Retail Logistics Excellence - RELEX Oy	Technology Crossover Ventures; TCV X, L.P.	\$200.0
10/11/2018	Soundreef Ltd	NA	\$4.0
10/1/2018	Expandly Limited	Committed Capital Limited; EIS Growth Fund; Mercia Fund Managers; MEIF Proof of Concept & Early Stage Fund	\$0.8
6/27/2018	Nextail Labs, S.L.U.	Nauta Capital; Keen Venture Partners LLP; Nauta Tech Invest IV SCR, S.A; Sonae Investment Management	\$10.0
5/8/2018	SES-imagotag	Yuen-Yu Investment Co., Ltd.	\$30.3
5/2/2018	Poq Studio Ltd.	Beringea LLC; Smedvig Capital Limited	\$12.9
4/6/2018	WIB srl	RedSeed Ventures	\$0.7
3/14/2018	TryFit Technologies Ltd.	Futurtech Middle East FZE	\$0.7
1/12/2018	Modcam AB	Spintop Ventures	\$1.2
12/31/2017	Luzern Solutions Limited	Delta Partners Limited	\$0.6
12/15/2017	LONSDALE SAS	NextStage AM	\$9.4
10/18/2017	Qopius Technology	Bpifrance Investissement; 360° Capital Partners; Fonds Ambition Amorçage Angels	\$1.2
10/11/2017	Ometria Ltd	Saatchinvest Ltd.; Force Over Mass Capital LLP	\$6.0
9/19/2017	Volo Commerce Limited	NVM Private Equity LLP; Downing LLP, Investment Arm	\$8.4
9/7/2017	Vekia SAS	Seeft Management SAS; Bpifrance Investissement; Serena Capital; Pléiade Venture, SCR; CapHorn Invest - Société de Gestion; Fonds Ambition Numérique; Zenium Technology Partners AG	\$14.4
7/12/2017	Poq Studio Ltd.	Beringea LLC; ProVen VCT plc; ProVen Growth & Income VCT PLC; Meyer Bergman Limited	\$4.5
7/9/2017	Metall Limited	TAL Apparel Limited	\$12.9
9/13/2016	Leeroy Group AB	Zenith Group	\$1.8
9/8/2016	Nextail Labs, S.L.U.	Nauta Capital; Decenes Mecenes, SGEIC, S.A.; Realiza Business Angels Capital, S.A.; Nauta Tech Invest III, SCR, S.A.	\$1.6
9/5/2016	Modcam AB	NA	\$1.8
7/27/2016	Poq Studio Ltd.	Beringea LLC; Venrex Investment Management LLP; Seedcamp	\$4.0
6/15/2016	Anatwine Limited	Zalando SE	\$12.0
2/24/2016	Kaliop SAS	BNP Paribas Développement SA, SCR; Sofilaro S.A.S.	\$2.2
11/17/2015	Flashnode Oy	Spintop Ventures; Spintop II	\$0.6
10/29/2015	WIB srl	Vertis SGR SpA; Unicredit S.P.A., Investment Arm	\$0.7
10/22/2015	Soundreef Ltd	LVenture Srl; VAM Investments s.p.a.	\$3.8
10/14/2015	Sentinelo SAS	Bpifrance Investissement	\$1.1
9/14/2015	Modcam AB	Robert Bosch Venture Capital GmbH	\$0.6
9/9/2015	Retail Logistics Excellence - RELEX Oy	Summit Partners LLP	\$22.3
6/25/2015	Modcam AB	Spintop Ventures	\$1.6

# Merchandising: Private placements in Europe (2/2)

Date	Target	Buyers	Deal Size (\$M)
6/25/2015	Ivalis SA	Bpifrance Investissement	\$3.4
6/11/2015	Vekia SAS	Seeft Management SAS; Pléiade Venture, SCR; CapHorn Invest - Société de Gestion	\$2.7
Min			\$0.6
Mean			\$11.3
Median			\$3.0
Max			\$200.0

# Merchandising: M&A in Europe

Date	Target	Acquirer	Transaction Size (\$M)	Enterprise Value	LTM Revenue	EV / LTM Revenue
05-21-19	Coheris SA	ChapsVision	\$12.3	\$10.6	\$15.4	0.7x
05-02-19	Fastrak Retail (UK) Limited	Pollard Banknote Limited	\$5.2	\$5.2	\$7.8	0.7x
06-04-18	VERTIKOM GmbH	Fentus 91. GmbH	\$22.7	\$24.7	\$87.7	0.3x
05-02-18	Findify AB	Namaste Technologies Inc.	\$11.4	\$11.7	\$0.5	23.2x
03-07-18	Traconf S.r.l.	Nippon Express (Europe) GmbH	\$179.0	\$177.7	\$161.3	1.1x
		Advent International Corporation; Hellman & Friedman LLC; GIC				
09-25-17	Nets A/S	Special Investments Pte. Ltd.; Sampo Oyj; Fisher Lynch Capital; StepStone Group LP; Bain Capital Private Equity (Europe), LLP	\$6,716.2	\$6,729.9	\$1,213.3	5.2x
01-30-17	Fredhopper BV	ATTRAQT Group plc	\$31.3	\$30.4	NA	NA
09-07-16	Intelligent Point Of Sale (Sales) Limited	iZettle AB	NA	NA	NA	NA
04-25-16	DdD retail A/S	K3 Retail and Business Solutions Limited	\$11.3	\$11.5	\$7.0	1.6x
03-16-16	Kesslers International Group Limited	Endless LLP; Enact	\$1.8	\$1.8	NA	NA
12-31-15	Dotpay S.A.	MCI. EuroVentures 1.0 FIZ; MCI Capital TFI SA	\$29.4	\$30.2	NA	NA
10-17-15	Wincor Nixdorf Aktiengesellschaft (nka:Diebold Nixdorf AG)	Diebold, Incorporated (nka:Diebold Nixdorf, Incorporated)	\$1,482.5	\$1,955.8	\$2,907.3	0.7x
09-18-15	CJ Services UK Ltd.	NA	\$2.3	\$4.7	NA	NA
09-15-15	The Mill (Facility) Limited	Technicolor SA	\$291.7	\$291.7	\$168.9	1.7x
07-21-15	FootFall Limited	Tyco International plc	\$59.8	\$60.0	\$40.9	1.5x
05-28-15	metaio GmbH	Apple Inc.	\$32.0	\$32.0	NA	NA
04-15-15	inspirepac Ltd.	Smurfit Kappa UK Ltd.	\$64.3	\$66.8	\$68.0	0.9x
02-23-15	DILAX Intelcom GmbH	VR Equitypartner GmbH; OMOS Equity Partners GmbH	\$12.3	NA	\$136.2	NA
02-12-15	Actual I.T., d.d.	DBA Lab S.p.A.	\$9.1	\$12.4	NA	NA
Min			\$1.8	\$1.8	\$0.5	0.3x
Mean			\$498.6	\$556.3	\$401.2	3.4x
Median			\$26.1	\$30.2	\$77.8	1.1x
Max			\$6,716.2	\$6,729.9	\$2,907.3	23.2x

2H 2019

# Ecommerce Logistics in Europe



# Online services and ecommerce are helping to shape the way the European logistics sector is developing...

## Overview

The Global ecommerce logistics market is expected to surpass \$781B in 2024, up from \$122B in 2014

The estimated CAGR of ecommerce logistics between 2016 and 2024 is 20.6%

Germany is a global leader in logistics innovation, technology, and services with almost 3 million industry employees in 60,000 companies

Based on May 2017 Truckers report, it is predicted that up to 4.4 million of the 6.4 million professional trucking jobs in US and Europe could be eliminated by autonomous technology

Freight and logistics are one of the major drivers of economic growth in Europe which is expected to grow at CAGR of ~7% between 2016 and 2020

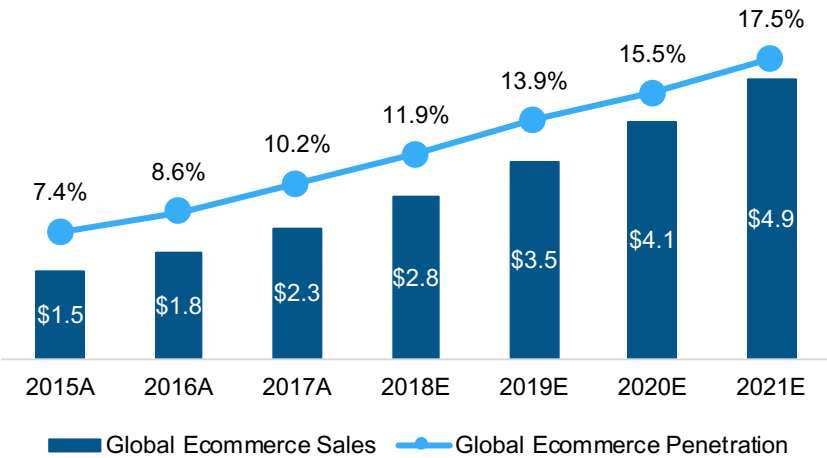
- In 2017, 268 million consumers in Europe shopped online for goods worth \$225B. This number is expected to rise by >94% to \$510B by 2021



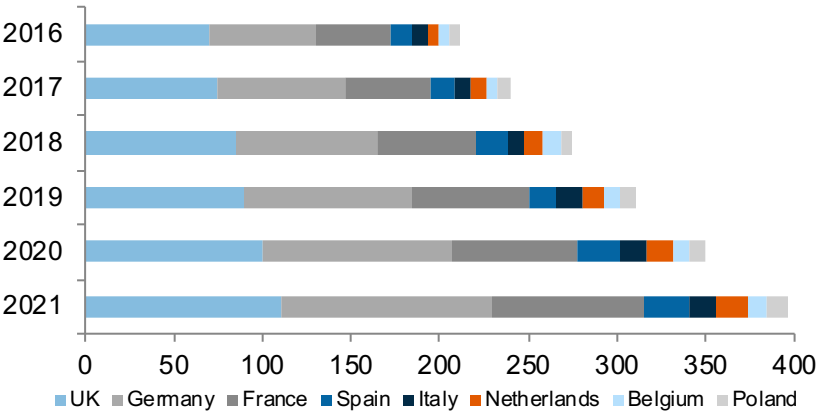
**Global Cost of Last Mile Delivery was \$80B in 2016, which is expected to grow at 7-10% over the next 5 years**

## Global ecommerce sales and penetration

Sales in \$USD trillion



## Europe 5-year ecommerce growth forecasts by country



# Technologies shaping European logistics industries

## Technology cluster

## Selected technologies description



Collaboration of devices and organizations

Internet of Things: Sensors churn out huge volumes of data for analysis  
Distributed ledger: Block chain enables efficient and secure exchange of data



Smart automated and semi-automated decision-making

Advanced analytics: Interpretation of huge data (e.g., forecasting demand)  
Machine learning: Application of algorithms to improve data-driven decisions



Smooth, contextual human-machine communication

Human-machine interaction: Application of gesture and facial recognition algorithms  
VR/AR: Immersive technologies that can alter the way we interact with content



Changes in physical production process

Advanced robotics: Automated hardware that supplements human labor  
3D printing: 3D printing of diverse materials through polymerization

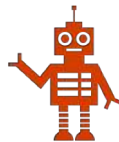


Fast, secure, on-demand data access (digital hygiene)

5G (mobile internet): Superfast mobile internet connectivity  
Cyber security: Application of algorithms to prevent systems from being hacked  
Cloud computing: Application of solutions for flexible, on-demand data access



Drones are being tested by Amazon.



AutoPiQ solution/ DHL have robots picking and packing.



Volvo Group has automated trucking operations



DHL has implemented its mobile AR "Vision Picking" system

# The era of digitized trucking across the European Union

*New technologies will create a more cost-efficient logistics supply chain by 2030*

Current technology	By 2020	By 2025	By 2030
Trucking logistics costs	-5%	-20%	-47%
Virtual platforms	Logistics mobility-as-a-service (MaaS) introduced	Nearly all hub-to-hub logistics done by MaaS	All hub-to-hub logistics done by MaaS
Warehouse robots	Drone-automated inventory taking	Processes (except commissioning) automated	Processes for standard delivery 100% automated
Partially automated bucking	Platooning begins	Partially autonomous trucks, requiring driver	Fully autonomous trucks without driver
Electric vans	Significant share of electric vans	Commercial delivery drones	Synchronized, heterogenous delivery fleet

It is essential that the industry acknowledges and works to keep pace with the incremental disruptive changes in technology and automation over the coming years—a transformation that will create a new and more cost-efficient supply chain by 2030



Trucking logistics costs expected to fall at 47% by 2030, largely through the reduction of labor

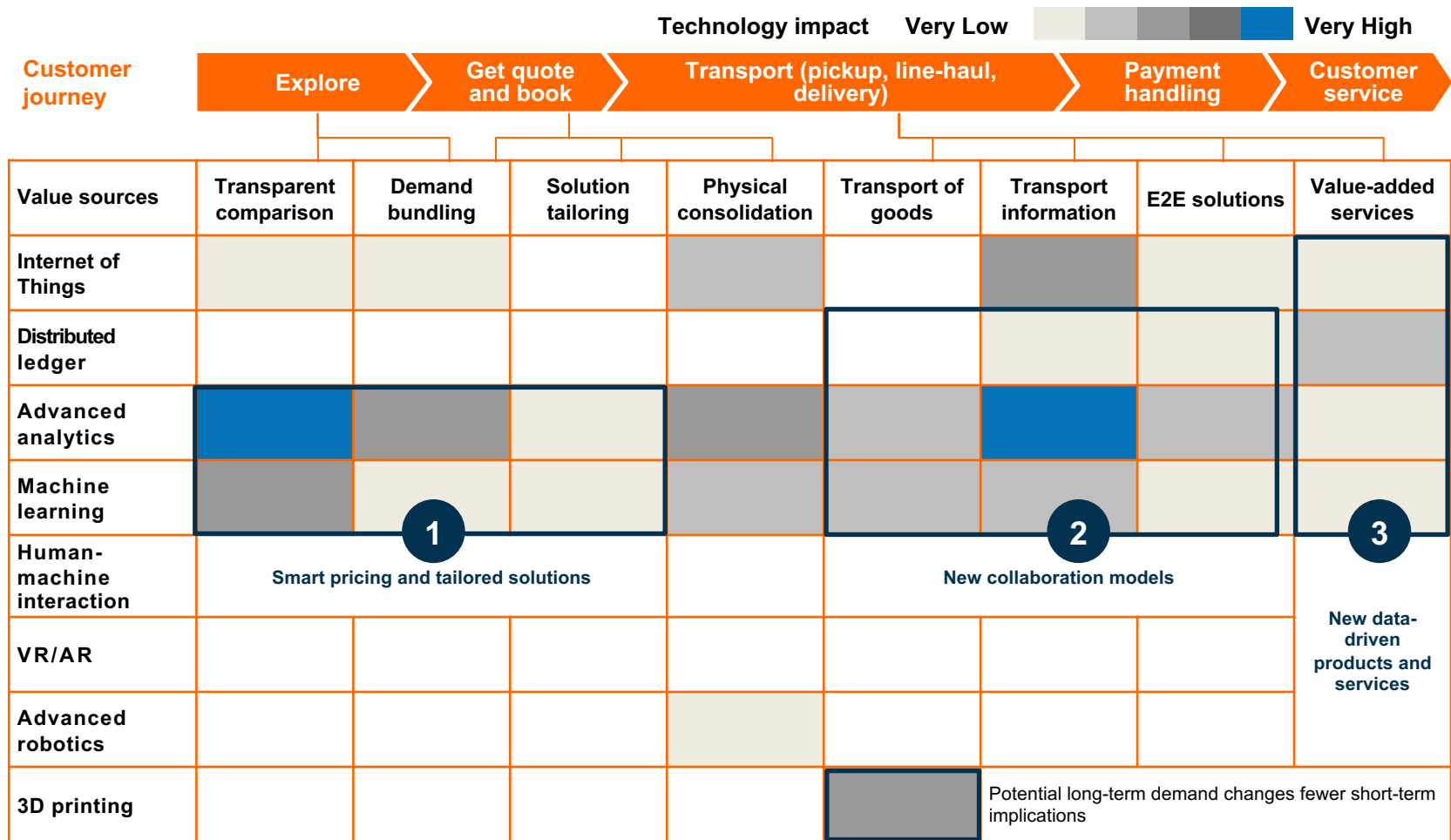


Delivery lead times will fall at 40%



Trucks will be in use on the road for 78% of the time, compared to current industry average in Europe of 29%

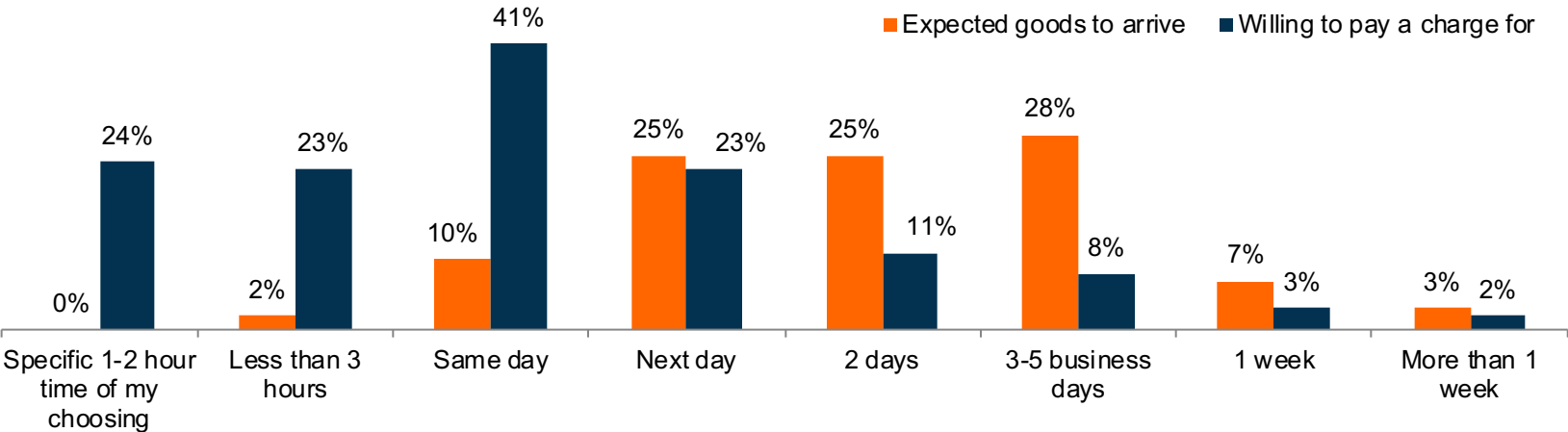
# Three technology-driven trends are transforming customers' experience



Key trends:

- 1. Virtual experience, product transparency, and increasing personalisation
- 2. Travel assistants capable of making and personalising suggestions
- 3. Continuous customer engagement

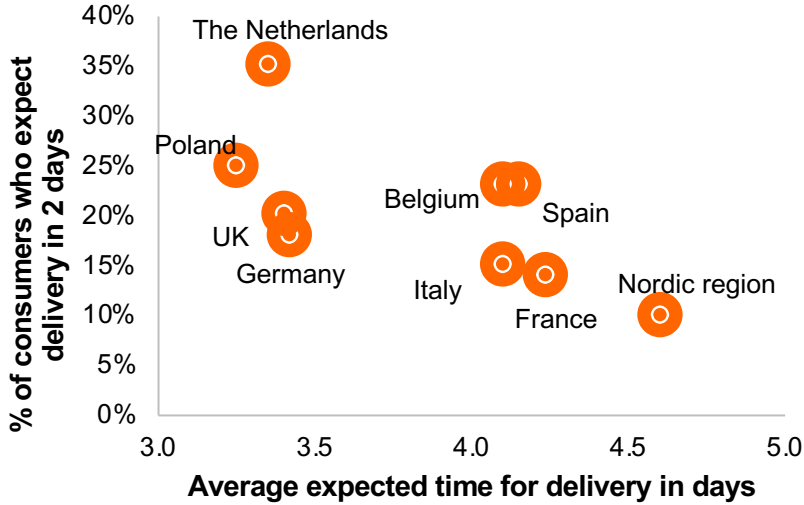
# Consumer preference evolution impacting ecommerce logistics



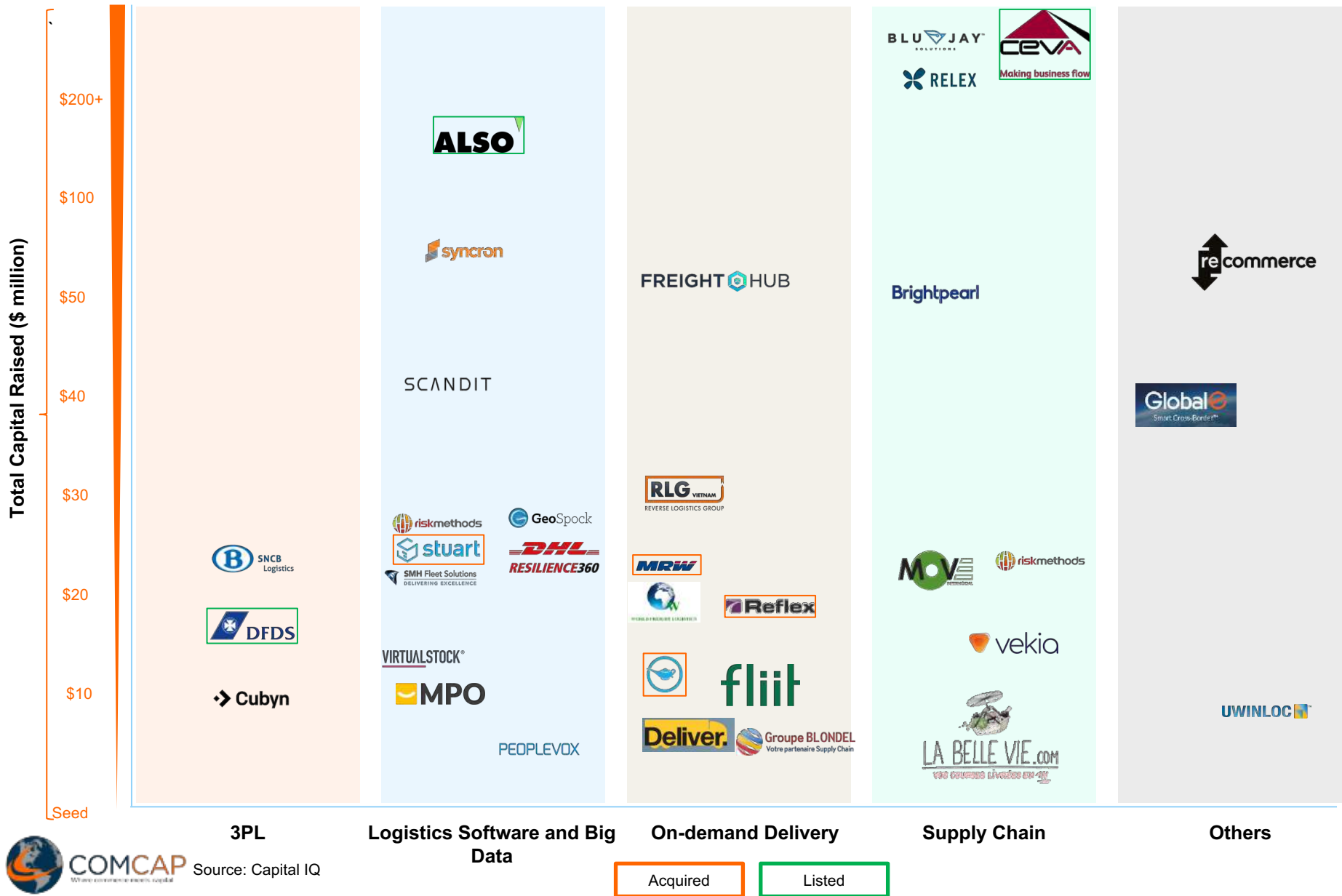
## Global consumers expect their purchases to arrive promptly and are willing to pay extra for same day delivery<sup>(1)</sup>

- Consumers are willing to pay more for same-day or faster delivery globally
- European consumers are highly demanding in terms of fast, convenient delivery—they expect efficiency, speed, and digital fitness; 3-5 days from the time of order is regarded as a reasonable time for delivery
- A high population density generally makes it easier for businesses and forwarders to manage fast deliveries at an acceptable cost
- Choice seems to be important to many Europeans. It is often pointed out that times kept by the Spanish differ from those of other Europeans, which maybe one reason why they are keenest on flexibility in time of delivery

## Delivery expectations in different countries<sup>(2)</sup>



# European logistics for retail funding landscape



# Logistics – Private placements in Europe (1/2)

Date	Target	Buyers	Deal Size (\$M)
5/2/2019	FreightHub GmbH	Northzone Ventures; Global Founders Capital Management GmbH; Cherry Ventures Management GmbH; Maersk Growth; Unbound Advisors Limited; Rider Global	\$30.0
4/16/2019	Worldwide Freight Logistics Limited	HV Holtzbrinck Ventures Adviser GmbH; Samos Investments Advisory Ltd; Senderwood LLP; Picus Capital GmbH	\$20.3
3/28/2019	Fliit Holding GmbH	Berlin Technologie Holding GmbH; Alstin II Fonds GmbH & Co. KG; Maersk Growth	\$11.2
2/6/2019	Retail Logistics Excellence - RELEX Oy	Technology Crossover Ventures; TCV X, L.P.	\$200.0
1/8/2019	GeoSpock Limited	Global Brain Co., Ltd.; Parkwalk Advisors Ltd; Cambridge Innovation Capital PLC; Cambridge Innovation Capital; 31Ventures Global Innovation Fund I; KDDI Open Innovation Fund 3	\$12.7
11/12/2018	DHL Resilience360 GmbH	Columbia Capital, L.P.	\$21.0
10/15/2018	Syncron International AB	Summit Partners LLP; Summit Partners Growth Equity Fund IX LP	\$68.3
9/20/2018	SMH Fleet Solutions Limited	LDC (Managers) Limited	\$21.2
7/26/2018	Scandit AG	NGP Capital; Atomico Investment Holdings Limited; GV	\$30.0
7/23/2018	Brightpearl Limited	MMC Ventures Ltd; Cipio Partners; Notion Capital Partners LLP	\$15.0
5/16/2018	Move Intermodal nv	Down 2 Earth Capital NV	\$22.8
5/14/2018	DFDS A/S	NA	\$15.2
5/14/2018	DELEEV SAS	Kima Ventures	\$6.6
4/22/2018	Globale U.K. Limited	Apax Partners (Israel) Ltd	\$20.0
4/20/2018	CEVA Holdings LLC (nka:Ceva Logistics AG)	CMA CGM S.A.	\$379.5
2/6/2018	Recommerce Solutions, SA	123 Investment Managers; Capzanine; Credev S.A.S.; Capzanine 4 Sponsorless	\$61.8
1/27/2018	UWINLOC SAS	GALIA Gestion SAS; ACE Management; M Capital Partners SAS; Elaia Partners	\$5.6
12/13/2017	FreightHub GmbH	Northzone Ventures; Global Founders Capital Management GmbH; Cherry Ventures Management GmbH; Cavalry Ventures Management GmbH; Northzone VIII; La Famiglia GMBH	\$20.0
9/7/2017	Vekia SAS	Seeft Management SAS; Bpifrance Investissement; Serena Capital; Pléiade Venture, SCR; CapHorn Invest - Société de Gestion; Fonds Ambition Numérique; Zenium Technology Partners AG	\$14.4
8/31/2017	ALSO Holding AG	NA	\$182.9
8/21/2017	BluJay Solutions Ltd	BlueBay Asset Management (Services) Ltd; TPG Specialty Lending Europe	\$500.0
7/20/2017	Cubyn SAS	Partech Partners; BNP Paribas Développement SA, SCR; DN Capital; 360° Capital Partners	\$7.0
7/17/2017	VirtualStock Holdings Limited	Notion Capital Partners LLP	\$5.9
6/21/2017	Web Logistics LLC	Lynwood Investments; Inventure Partners; Amereus Group	\$8.0
5/12/2017	Ridee Ltd	Samaipata Ventures; STE Capital	\$10.0
4/26/2017	riskmethods GmbH	Bayern Kapital GmbH; Senovo Capital Management GmbH; EQT Ventures; Digitalplus GmbH	\$14.7
1/27/2017	MRW Logística Avanzada	NA	\$24.9
1/10/2017	Scandit AG	Atomico Investment Holdings Limited	\$7.5
9/6/2016	MP Objects BV	Udata Partners	\$10.0
5/9/2016	Globale U.K. Limited	Temasek Holdings (Private) Limited; Red Dot Fund	\$20.0
4/11/2016	Reverse Logistics GmbH	NA	\$30.8
3/31/2016	Ridee Ltd	Elderstreet Investments Limited; Bull Capital Partners Limited; Samaipata Ventures	\$7.5
2/2/2016	riskmethods GmbH	Bayern Kapital GmbH; Point Nine Capital; Senovo Capital Management GmbH; EQT Ventures	\$6.0



# Logistics – Private placements in Europe (2/2)

Date	Target	Buyers	Deal Size (\$M)
1/19/2016	Brightpearl Limited	MMC Ventures Ltd; Eden Ventures (UK) Ltd.; Notion Capital Partners LLP	\$10.9
11/18/2015	Stuart	GeoPost SA	\$23.4
9/30/2015	GeoSpock Limited	Global Brain Co., Ltd.; Parkwalk Advisors Ltd; Cambridge Innovation Capital PLC; Cambridge Innnovation Capital; Parkwalk UK Technology Fund VI; 31Ventures Global Innovation Fund I	\$12.0
9/9/2015	Retail Logistics Excellence - RELEX Oy	Summit Partners LLP	\$22.3
9/4/2015	Blondel Logistique S.A.S.	Bpifrance Investissement; Picardie Investissement Gestion	\$6.7
6/13/2015	Lcv Hire Solutions Limited	BUSINESS GROWTH FUND LIMITED	\$11.7
3/30/2015	SNCB Logistics NV/SA	Argos Wityu Partners S.A.	\$23.3
2/24/2015	Peoplevox Ltd.	Index Ventures	\$5.9
Min			\$5.9
Mean			\$14.1
Median			\$11.3
Max			\$30.8



# Logistics – M&A in Europe (1/2)

Date	Target	Acquirer	Transaction Size (\$M)	Enterprise Value	LTM Revenue	EV / LTM Revenue
01-16-19	Panalpina Welttransport (Holding) AG	DSV A/S	\$5,127.8	\$5,479.8	\$6,118.8	0.9x
12-18-18	Aramex Global Solutions (UK) Limited	Australian Postal Corporation	\$20.0	\$33.3	NA	NA
10-25-18	Ceva Logistics AG	CMA CGM S.A.	\$784.4	\$4,105.3	\$7,264.0	0.6x
09-06-18	ByBox Holdings Limited	Francisco Partners Management LLC	\$285.9	NA	NA	NA
07-04-18	Savoye SA	Noblelift Intelligent Equipment Co.,Ltd.	\$37.6	\$36.6	\$99.0	0.4x
06-04-18	Anglia Forwarding Group Limited	Xpediator Plc	\$5.6	\$5.6	\$18.0	0.3x
03-07-18	Traconf S.r.l.	Nippon Express (Europe) GmbH	\$179.0	\$177.7	\$161.3	1.1x
03-07-18	CM Downton (Haulage Contractors) Ltd.	EmergeVest Limited	\$104.1	\$104.1	\$166.6	0.6x
02-01-18	Redyser Transporte, S.L.	General Logistics Systems B.V.	\$20.6	\$20.6	\$56.1	0.4x
01-02-18	Hermes Logistics Package	Fraser's Property Investments (Europe) B.V.	\$309.6	\$309.6	NA	NA
12-05-17	Ridee Ltd	Rico Logistics Ltd.	NA	NA	NA	NA
11-24-17	Anisa Group Ltd	Sanderson Group plc	\$15.9	\$14.5	\$13.4	1.1x
10-24-17	T-Emballage Thureson AB	Volati AB	\$36.6	\$39.0	\$71.2	0.5x
06-29-17	Visma AS	Montagu Private Equity LLP; Intermediate Capital Group plc; HgCapital LLP; GIC Pte. Ltd.; HgCapital 7, L.P.	\$1,817.6	NA	\$962.6	NA
06-29-17	Societe de Transports de Vehicules Automobiles S.A.	Compagnie d'Affretement et de Transport SA	\$217.1	\$221.2	\$342.7	0.6x
06-07-17	PTV Planung Transport Verkehr AG	Porsche Zweite Beteiligung GmbH	\$337.6	\$370.0	\$104.7	3.3x
05-25-17	Tesam Distribution Ltd	Clipper Logistics plc	\$15.2	\$10.8	\$25.4	0.4x
05-08-17	Brand Addition Limited	Elysian Capital LLP; Elysian Capital II LP	\$77.6	\$77.6	\$103.5	0.8x
04-07-17	Wolters Kluwer Transport Services	Castik Capital Partners GmbH	\$87.1	\$93.6	\$42.5	2.1x
03-21-17	iForce Group Ltd.	Eddie Stobart Logistics Limited (nka:Eddie Stobart Logistics plc)	\$56.0	\$58.0	\$69.9	0.8x
03-17-17	Axima Pty Ltd	International Enterprise Singapore; Yang Kee Logistics Pte Ltd	\$24.2	\$24.2	NA	NA
03-07-17	Stuart	GeoPost SA	\$13.7	\$17.6	NA	NA
02-24-17	Integer.pl Spolka Akcyjna	AI Prime (Luxembourg) Bidco S.a r.l.	\$173.6	\$198.1	\$105.0	1.9x
01-30-17	Four Newly Developed Properties in Hanover, Bremen, Karlsruhe and Frankfurt am Main, Germany	PATRIZIA Immobilien AG (nka:Patrizia AG); Patrizia Logistik - Invest Europa Fund	\$74.4	\$74.4	NA	NA
01-24-17	Mareco N.V.	Eimskipafélag Íslands hf.	\$17.9	\$22.3	\$64.5	0.3x
09-28-16	UK Mail Group plc	Deutsche Post AG	\$331.4	\$307.7	\$620.4	0.5x
08-05-16	ByBox Holdings Limited	LDC (Managers) Limited	\$137.3	\$139.9	\$95.4	1.4x
08-02-16	TRANSPOREON GmbH	TPG Capital, L.P.	\$336.8	NA	NA	NA
06-27-16	Logiters Logística S.A.	ID Logistics Group SA	\$93.5	\$95.6	\$275.0	0.3x
06-21-16	Dematic Group S.à r.l.	KION GROUP AG	\$3,250.0	\$3,250.0	\$1,796.0	1.8x
06-17-16	LGI Logistics Group International GmbH	Elanders AB (publ)	\$289.1	\$282.2	\$483.8	0.6x
06-06-16	Fast React Systems Limited	Coats Global Services Limited	\$13.0	\$13.0	\$4.4	3.0x

# Logistics – M&A in Europe (2/2)

Date	Target	Acquirer	Transaction Size (\$M)	Enterprise Value	LTM Revenue	EV / LTM Revenue
04-29-16	pixi* Software GmbH	The Descartes Systems Group Inc	\$10.5	\$10.5	NA	NA
02-29-16	Provus Service Provider S.A.	Wirecard AG	\$34.8	\$34.8	NA	NA
02-18-16	CitySprint (UK) Ltd	Dunedin LLP; Lloyds Development Capital Ltd	\$114.7	\$114.7	\$209.4	0.5x
	UDG Healthcare plc, United Drug Supply Chain Services And Sangers And TCP And	Celesio AG (nka:McKesson Europe AG)	\$463.5	\$463.0	\$1,549.8	NA
09-18-15	MASTA					
08-03-15	B+ Equipment SAS	Sealed Air Corporation	\$20.0	\$20.0	NA	NA
05-11-15	Prime Cargo A/S	Mitsui-Soko (Europe) s.r.o.	\$21.7	\$21.0	\$65.6	0.3x
04-28-15	Norbert Dentressangle S.A. (nka:XPO Logistics Europe SA)	XPO Logistics, Inc.	\$3,024.6	\$3,654.6	\$5,355.7	0.7x
Min			\$5.6	\$5.6	\$4.4	0.3x
Mean			\$473.2	\$568.6	\$937.3	1.0x
Median			\$90.3	\$77.6	\$104.8	0.6x
Max			\$5,127.8	\$5,479.8	\$7,264.0	3.3x