



**EUROPEAN CENTER FOR
DIGITAL COMPETITIVENESS**

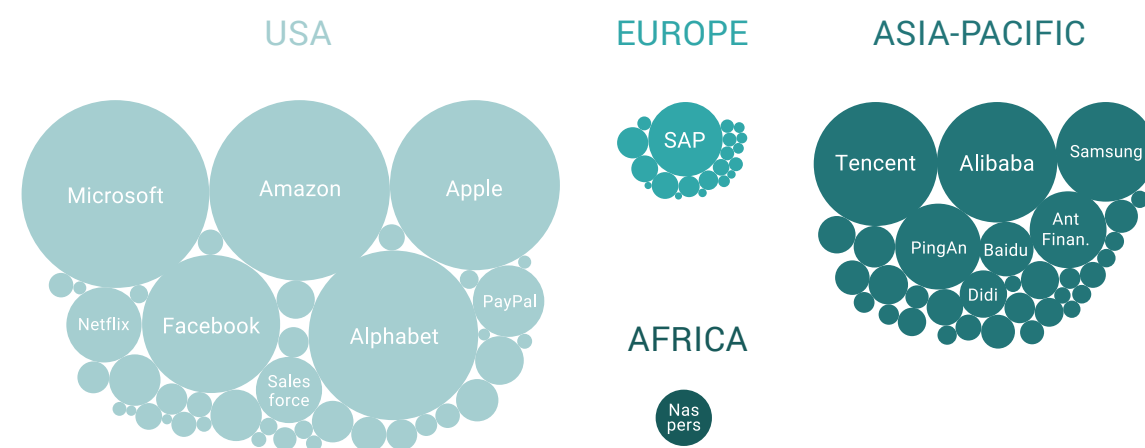
BY ESCP EUROPE BUSINESS SCHOOL

FACTBOOK DIGITIZATION

20 Facts on the Status Quo of
Digitization in Germany



» Europe is lagging behind other regions in terms of digital platforms



The 100 most valuable platforms (market value in billions of USD, most recent known financing rounds, May 31, 2019)

Source: Netzoekonom.de (2019)



» Three US companies are more valuable than all 763 publicly traded German companies combined



Market value in billions of USD as of August 31, 2019

Source: Handelsblatt (2019)

» The largest companies in Germany are comparatively old

Germany

114
years



China

34
years



USA

30
years

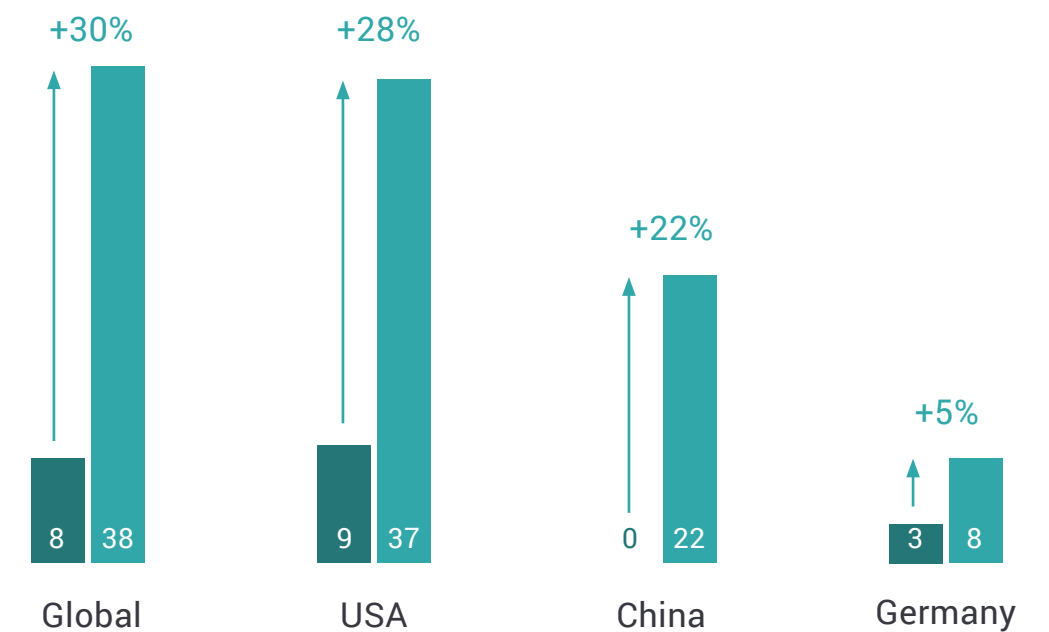


Average age of the five most valuable companies

Sources: Business Insider (2019),
Finanzen100 (2019), Südkurier (2019),
Corporate websites (2019)



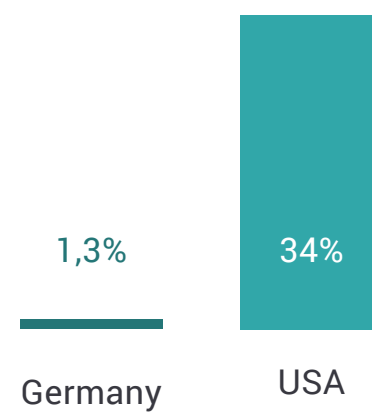
» Germany does not have enough large technology companies



Share of technology companies with a market capitalization of over 100 billions of USD as a percentage of the market capitalization of the 50 most valuable companies, 1998 and 2018

Source: McKinsey (2018)

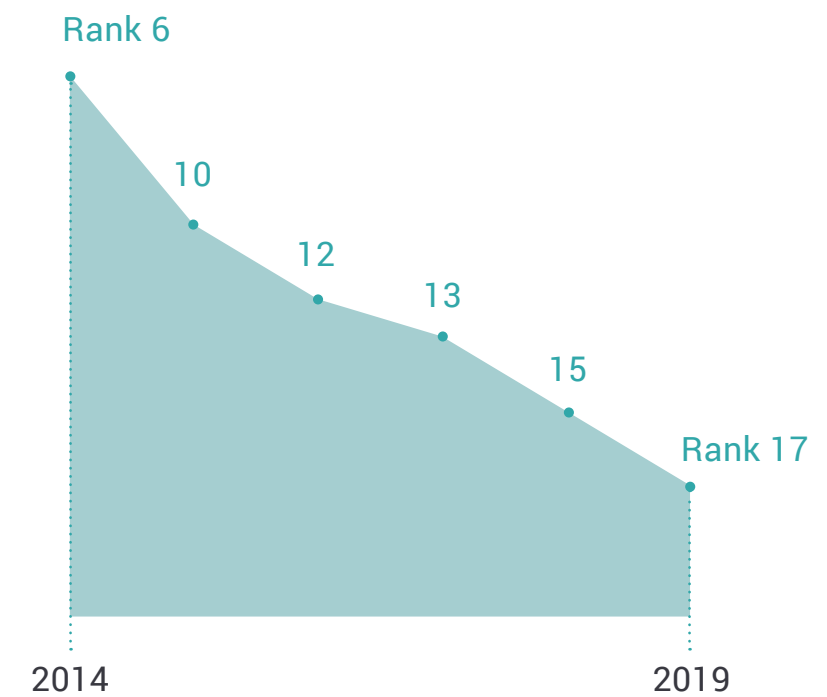
» Too few innovative start-ups modernize the German economy



Percentage of GDP accounted for by enterprises that have been financed with venture capital since 1995

Source: Handelsblatt (2019)

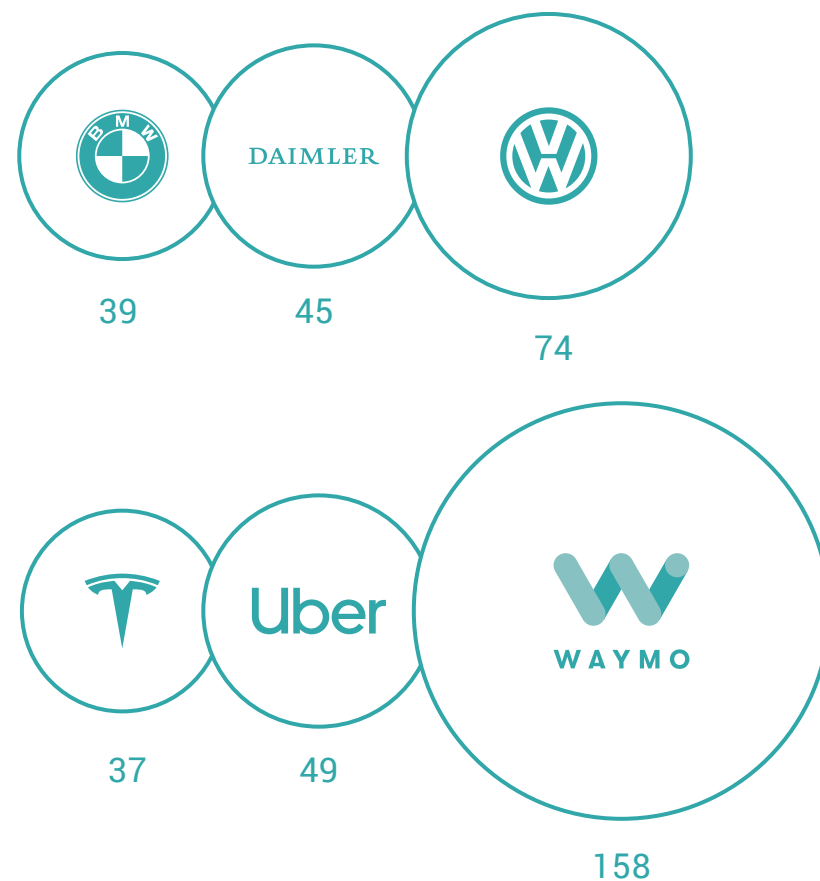
» Germany is losing competitiveness



Rank of Germany in the „IMD World Competitiveness Ranking”

Source: IMD (2019)

» German companies are facing tough new competition, even in their strongest industries



(Estimated) market value of German and American mobility companies in billions of euros

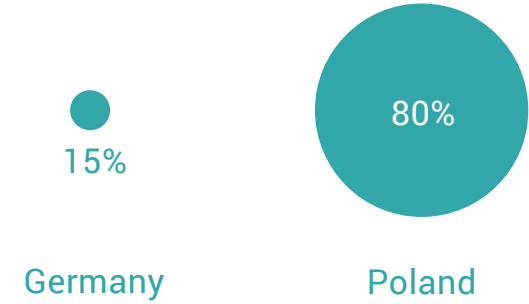
Sources: Finanzen.net (2019), Forbes (2019)



» Germany lags behind in digital innovation



Degree of digitization of public services (index)



Cashless payments (share of all purchases)

Sources: European Commission (2017), WELT (2019)

» Germany lags behind in future technologies



Share of fiber-optics of all broadband connections



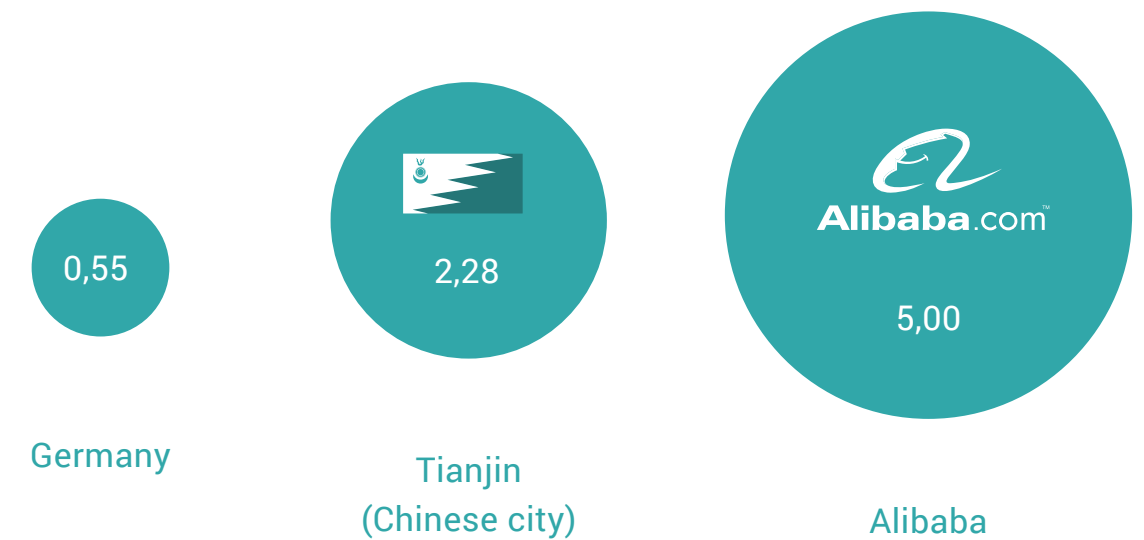
Number of most powerful supercomputers



Investments in quantum computers in billions of USD

Sources: Statista (2019), Heise (2019), Rheinische Post (2018)

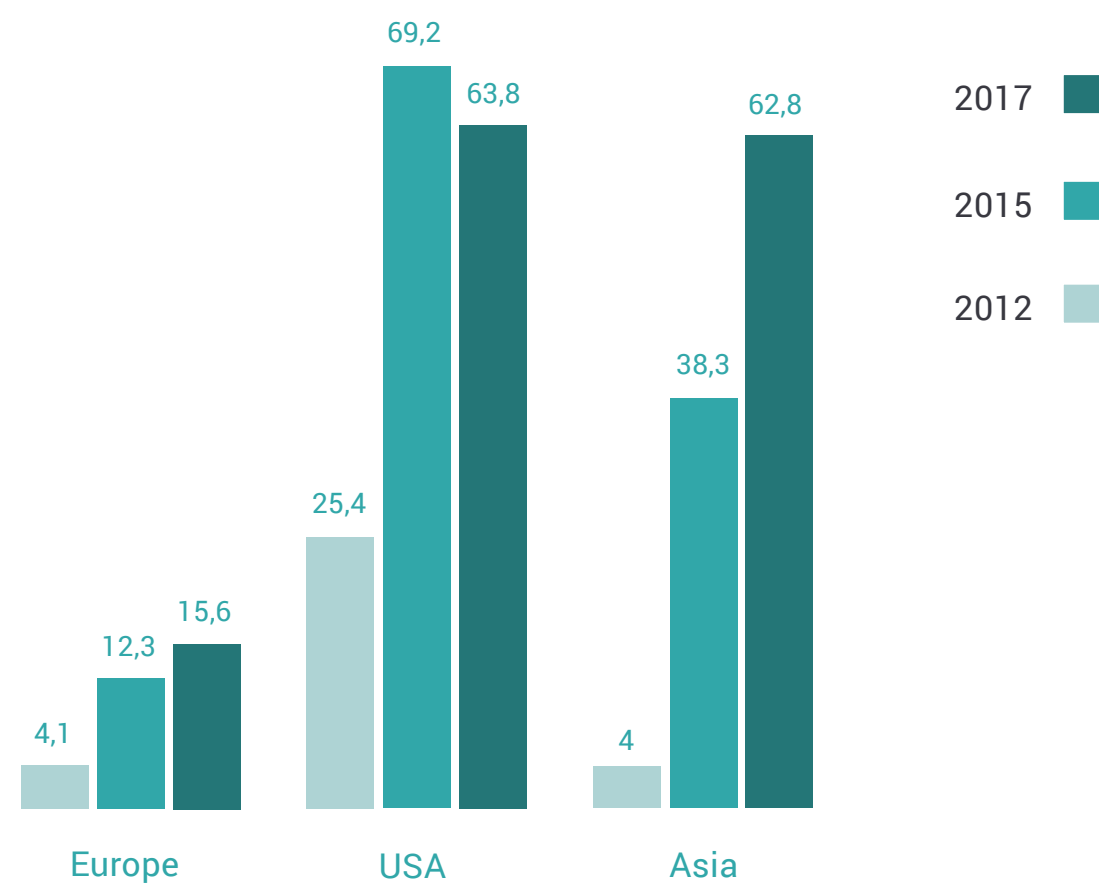
» Compared to China, Germany is investing little in artificial intelligence



Announced investments in artificial intelligence per year in billions of USD

Sources: BMWI (2018), Heise, Netzwoche (2018)

» Europe does not invest enough in venture capital

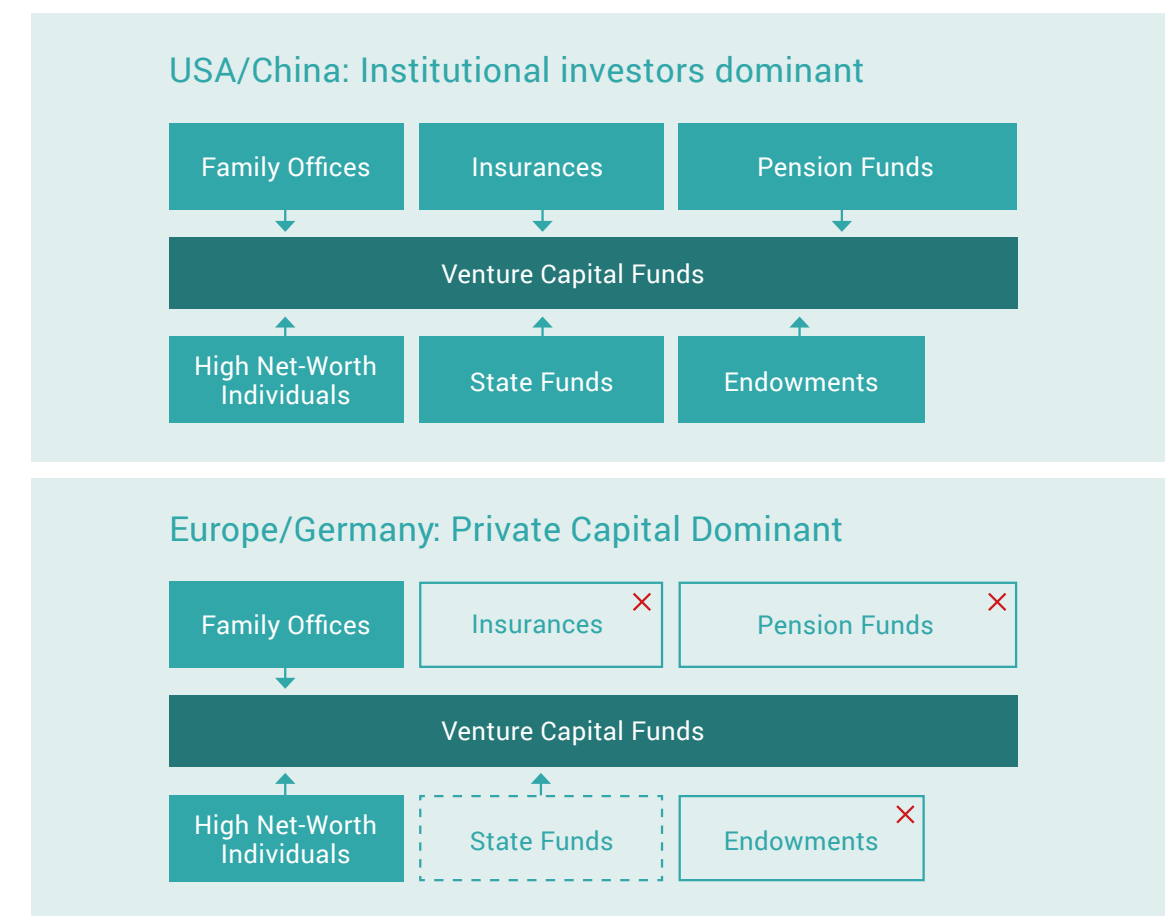


Venture capital in billions of USD

Source: Roland Berger (2018)



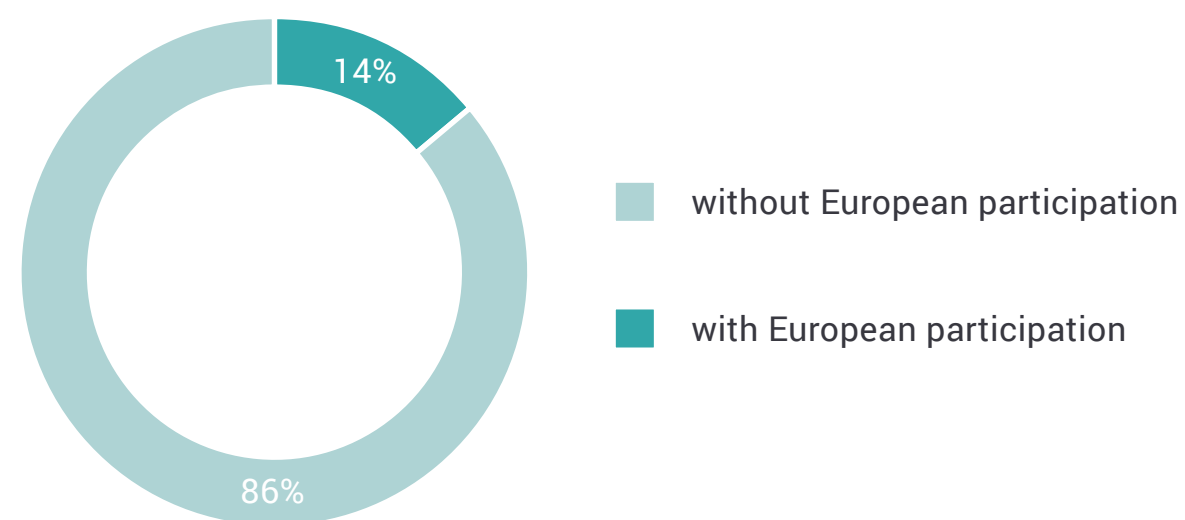
» Venture capital funds in Europe are not financed by a broad group of institutional investors



Overview of main sources of venture capital

Source: Lakestar (2019)

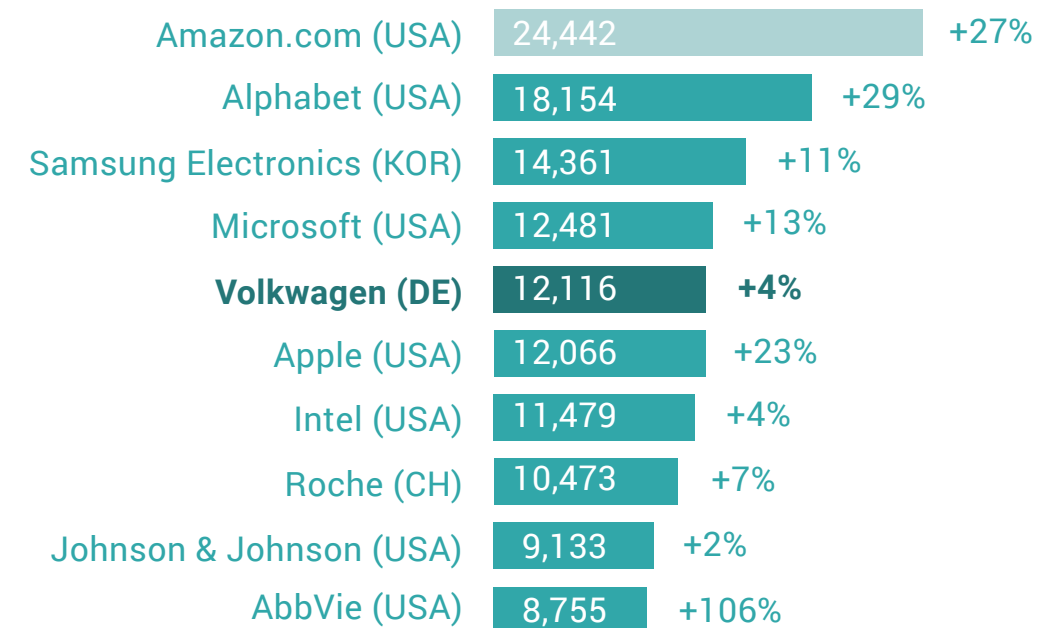
» The share of European investors in large international funding rounds is small



Share of European funding rounds over 10 millions of euros with and without European participation

Source: Handelsblatt (2019)

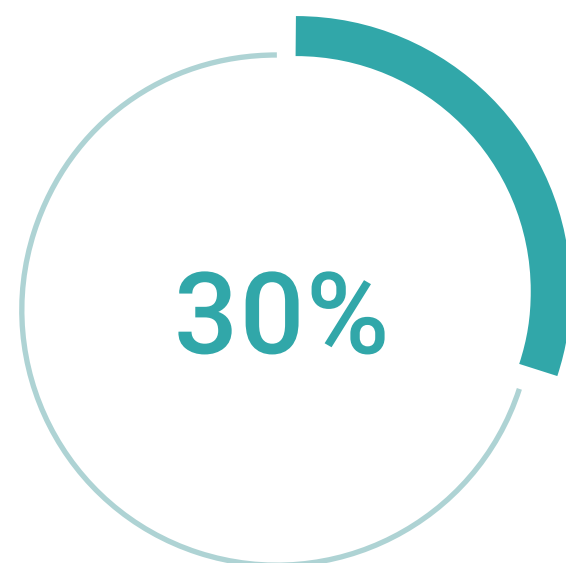
» There is only one German company in the global top ten for the highest R&D expenditures



Research & development (R&D) expenditures
2018 in millions of euros, development in
comparison to 2017

Source: EY (2019)

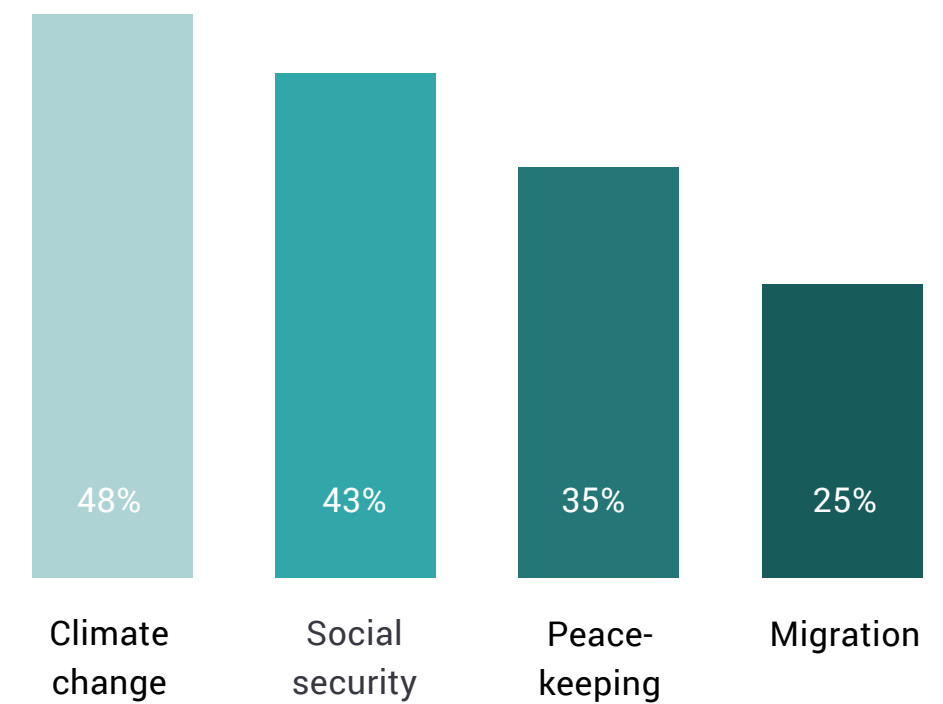
» Only a few small and medium-sized companies approach digitization in a comprehensive way



Share of small and medium-sized companies with completed digitization projects

Source: KfW (2019)

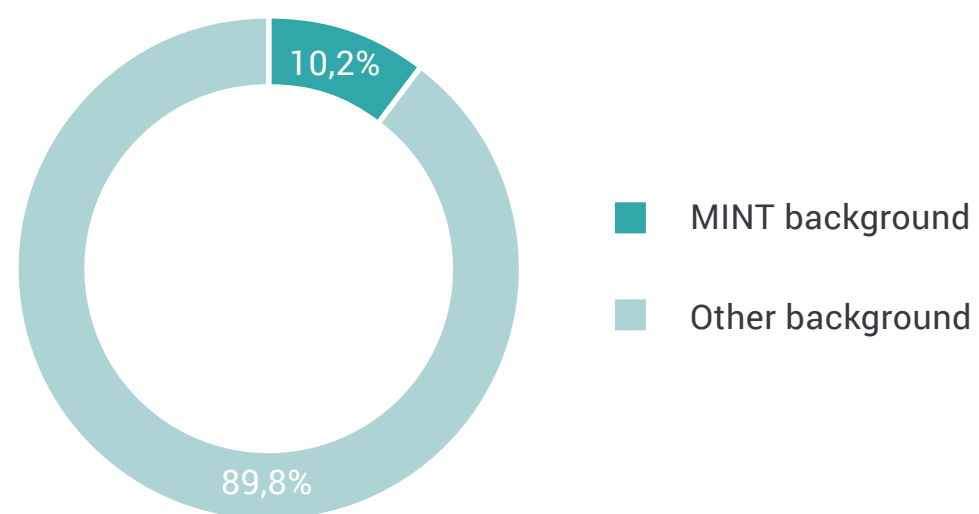
» Digitization does not play a role in the public and political debate



Overview of the topics that were key for German voters in the 2019 European election

Source: NTV (2019)

» Only a few politicians in Germany have technological or scientific backgrounds

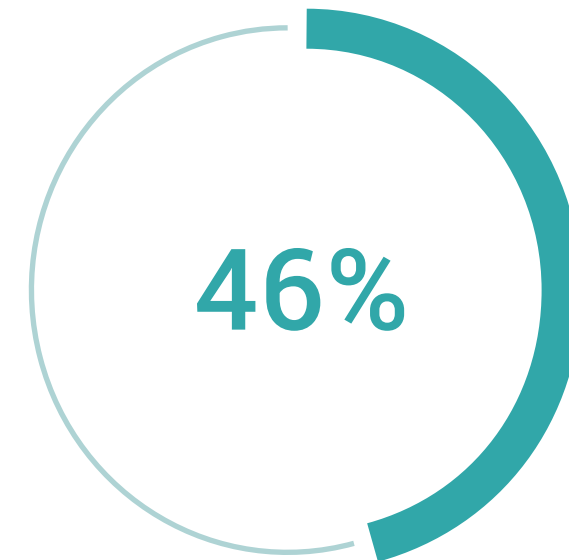


Share of German MPs with and without a MINT background (degree in mathematics, informatics, natural sciences and technology)

Source: Bundestag.de (2019)



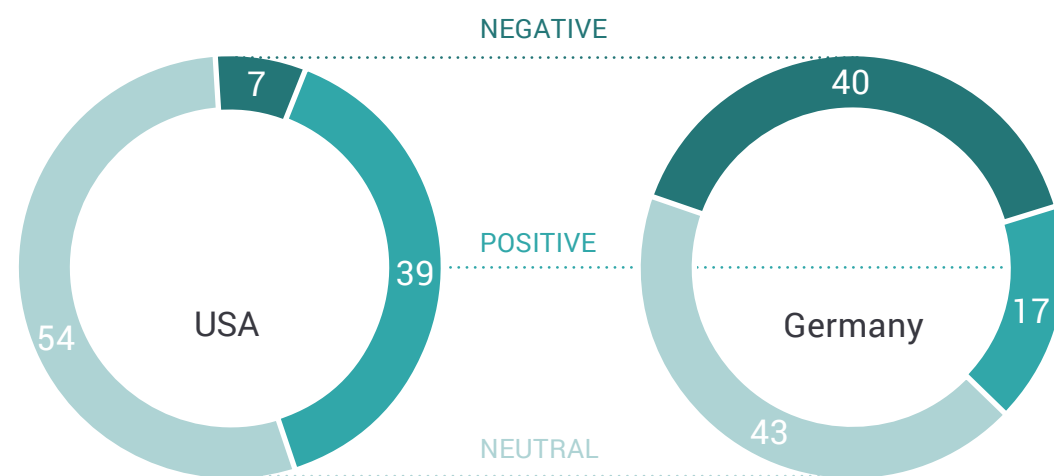
» The German public does not believe in the benefits of digitization



Percentage of the German population that expects life to improve substantially as a result of digitization

Source: Friedrich-Ebert-Stiftung (2019)

» German media reports about founders are comparatively negative

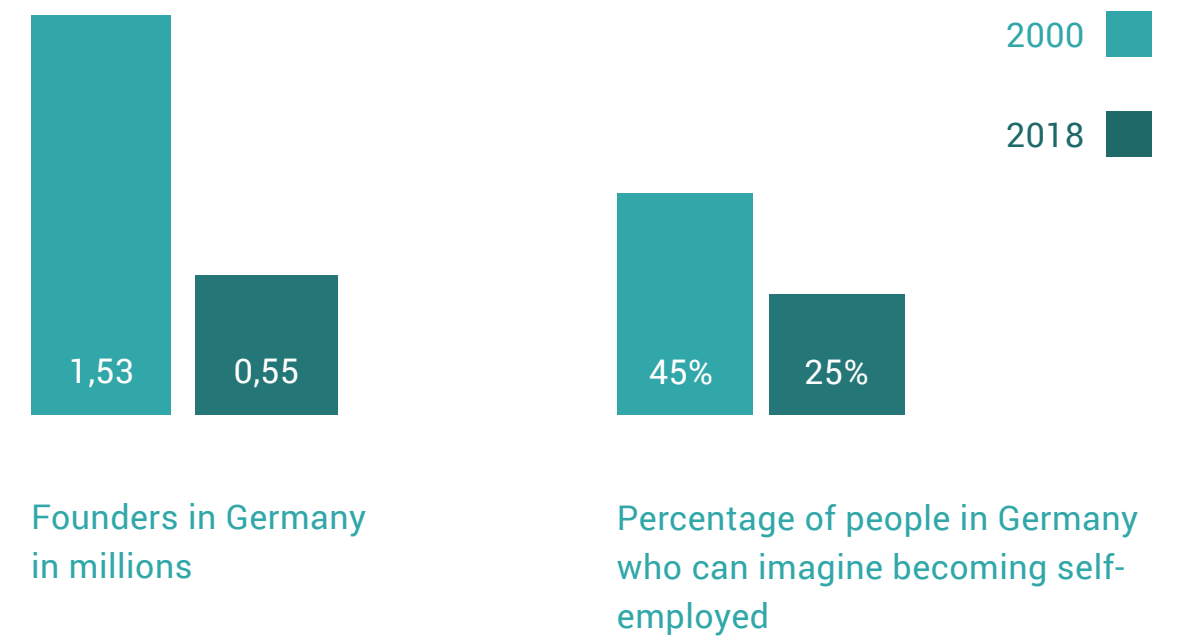


Share of media coverage of start-ups (in %),
2018

Source: McKinsey (2018)



» Things look dim for a new start-up era in Germany



Sources: FAZ (2019), KfW (2006, 2019)

» European Center for Digital Competitiveness:

BY ESCP EUROPE BUSINESS SCHOOL

The European Center for Digital Competitiveness was founded at ESCP Europe Business School in Berlin with the goal of bringing digital competitiveness to the political and public debate, where it currently only plays a minor role.

Given the digital revolution that our economy and society currently face, digital competitiveness must take center stage in debates to secure our prosperity for the future.

Similarly, in this increasingly dynamic environment we want to support the initiative to position Europe as a global leader for the responsible application of technology for the benefit of society.

» Initiators



Klaus Hommels
Lakestar



Oliver Heimes
Lakestar



Klaus Schweinsberg
Centre for Strategy
and Higher Leadership



Philip Meissner
ESCP Europe
European Center for
Digital Competitiveness



Christian Poensgen
ESCP Europe
European Center for
Digital Competitiveness



Andreas Kaplan
ESCP Europe

» Sources

PAGE 1

- › NETZOEKONOM.de. 2019. Die 100 wertvollsten Plattformen der Welt. Available online at: <https://www.netzoekonom.de/plattform-oekonomie/> [Accessed in August 2019]

PAGE 2

- › HANDELSBLATT. 2019. Amazon und Microsoft sind erstmals wertvoller als alle deutschen Aktien zusammen. Available online at: <https://www.handelsblatt.com/finanzen/maerkte/aktien/boersenwert-amazon-und-microsoft-sind-erstmal-s-wertvoll-als-alle-deutschen-aktien-zusammen/24691530.html> [Accessed in August 2019]

PAGE 3

- › BUISNESS INSIDER. 2019. These are the 14 largest Chinese companies. Available online at: <https://www.businessinsider.de/14-biggest-chinese-companies-based-on-market-cap-2019-7?op=1> [Accessed in August 2019]

- › FINANZEN100. 2019. Die Top100 größten börsennotierten Unternehmen der Welt. Available online at: <https://www.finanzen100.de/top100/die-grossten-borsennotierten-unternehmen-der-welt/> [Accessed in August 2019]
- › SÜDKURIER. 2019. Das sind die fünf wertvollsten Daxkonzerne Deutschlands. Available online at: <https://www.suedkurier.de/ueberregional/wirtschaft/Das-sind-die-fuenf-wertvollsten-Dax-Konzerne-in-Deutschland;art416,10151806> [Accessed in August 2019]

PAGE 4

- › MCKINSEY. 2018. Tech-Titanen made in Germany. Eine Perspektive. Available online at: <https://www.mckinsey.de/publikationen/2018-12-05---tech-giants-made-in-germany> [Accessed in August 2019]

PAGE 5

- › HANDELSBLATT. 2019. Tech-Investor Klaus Hommels: „Das Geld für Start-ups kommt von den Falschen“. Available online at: <https://www.handelsblatt.com/unternehmen/it-medien/interview-techinvestor-klaus-hommels-das-geld-fuerstart-ups-kommt-von-den-falschen/24119428.html> [Accessed in August 2019]

PAGE 6

- › IMD WORLD COMPETITIVENESS RANKING. 2019. IMD World Competitiveness ranking 2019 One Year Change. Available online at: <https://www.imd.org/wcc/world-competitiveness-center-rankings/world-competitiveness-ranking-2019/> [Accessed in August 2019]
- › IMD WORLD COMPETITIVENESS RANKING. 2018. IMD World Competitiveness Rankings 2018 Results. Available online at: <https://www.imd.org/wcc/world-competitiveness-center-rankings/world-competitiveness-ranking-2018/> [Accessed in August 2019]
- › IMD WORLD COMPETITIVENESS RANKING. 2017. IMD World Competitiveness Rankings 2017 Results. Available online at: <https://www.imd.org/wcc/world-competitiveness-center-rankings/competitiveness-2017-rankings-results/> [Accessed in August 2019]
- › IMD WORLD COMPETITIVENESS RANKING. 2016. IMD Releases Its 2016 World Competitiveness Ranking. Available online at: <https://www.imd.org/research-knowledge/articles/2016-com-may/> [Accessed in August 2019]
- › IMD WORLD COMPETITIVENESS RANKING. 2015. IMD releases its 2015 World Competitiveness Yearbook ranking. Available online at: https://www.imd.org/research-knowledge/articles/com_may_2015/ [Accessed in August 2019]
- › IMD WORLD COMPETITIVENESS RANKING. 2014. IMD releases its 2014 World Competitiveness Yearbook ranking. Available online at: https://www.imd.org/research-knowledge/articles/com_may_2014/ [Accessed in August 2019]

PAGE 7

- › FINANZEN.NET. 2019. Alphabet Aktie. Available online at: https://www.finanzen.net/aktien/alphabet_a-aktie [Accessed in August 2019]
- › FINANZEN.NET. 2019. Apple Aktie. Available online at: <https://www.finanzen.net/aktien/apple-aktie> [Accessed in August 2019]
- › FINANZEN.NET. 2019. BMW Aktie. Available online at: <https://www.finanzen.net/aktien/bmw-aktie> [Accessed in August 2019]
- › FINANZEN.NET. 2019. Daimler Aktie. Available online at: <https://www.finanzen.net/aktien/daimler-aktie> [Accessed in August 2019]
- › FINANZEN.NET. 2019. TESLA Aktie. Available online at: <https://www.finanzen.net/aktien/tesla-aktie> [Accessed in August 2019]
- › FINANZEN.NET. 2019. Uber Aktie. Online verfügbar unter: <https://www.finanzen.net/aktien/uber-aktie> [Accessed in August 2019]
- › FINANZEN.NET. 2019. Volkswagen Aktie. Available online at: <https://www.finanzen.net/aktien/volkswagen-aktie> [Accessed in August 2019]
- › FORBES. 2019. GM's Ride-Sharing Fiasco Highlights Genius Of Google's Jewel Waymo. Available online at: <https://www.forbes.com/sites/jonmarkman/2019/05/27/gms-costly-ride-sharing-fiasco-highlights-genius-of-waymo/#35036f044150> [Accessed in August 2019]

PAGE 8

- › DIE WELT. 2019. In Polen wächst das Mitleid mit dem analogen Deutschland. Available online at: <https://www.welt.de/politik/ausland/plus196849997/Hightech-Entwicklung-In-Polen-waechst-das-Mitleid-mit-dem-analogen-Deutschland.html> [Accessed in August 2019]
- › EU KOMMISSION. 2017. Digitalisierungsindex 2017. Available online at: https://ec.europa.eu/newsroom/document.cfm?doc_id=44393 [Accessed in August 2019]

PAGE 9

- › HEISE. 2019. Supercomputer: Top500-Liste der Supercomputer: alles Petaflops-Rechner. Available online at: <https://www.heise.de/newsticker/meldung/Top500-Liste-der-Supercomputer-alles-Petaflops-Rechner-4447274.html> [Accessed in August 2019]
- › RHEINISCHE POST. 2018. Regierung will 650 Millionen Euro in Quantencomputer investieren. Available online at: https://rp-online.de/politik/deutschland/anja-karliczek-foerdert-quantentechnologie-mit-650-millionen-euro_aid-33248283 [Accessed in August 2019]
- › STATISTA. 2019. Anteil von Glasfaseranschlüssen an allen stationären Breitbandanschlüssen in den Ländern der OECD im Dezember 2018. Available online at: <https://de.statista.com/statistik/daten/studie/415799/umfrage/anteil-von-glasfaseranschluesen-an-allen-breitbandanschluesen-in-oecd-staaten/> [Accessed in August 2019]

PAGE 10

- › BMWI. 2018. Bundesregierung beschließt Strategie Künstliche Intelligenz Deutschland und Europa auf dem Weg zu einem führenden Standort für Entwicklung und Anwendung von KI-Technologien. Available online at: <https://www.bmwi.de/Redaktion/DE/Pressemitteilungen/2018/20181116-bundesregierung-beschliesst-strategie-kuenstliche-intelligenz.html> [Accessed in August 2019]
- › HEISE. 2017. Alibaba investiert in Forschung und Entwicklung zu KI. Available online at: <https://www.heise.de/developer/meldung/Alibaba-investiert-in-Forschung-und-Entwicklung-zu-KI-3860471.html> [Accessed in August 2019]
- › NETZWOCHE (2018). Wie China zum Spitzenreiter werden will. Available online at: <https://www.netzwoche.ch/news/2018-05-18/wie-china-zum-ki-spitzenreiter-werden-will> [Accessed in August 2019]

PAGE 11

- › ROLAND BERGER. 2018. Treibstoff Venture Capital: Wie Deutschland Innovation und Wachstum beschleunigen kann. Available online at: <https://www.rolandberger.com/de/Media/Treibstoff-Venture-Capital-Wie-Deutschland-Innovation-und-Wachstum-beschleunige.html> [Accessed in August 2019]

PAGE 12

- › LAKESTAR. 2019. The next Generation of Founders and their vital impact on europe's future. Available online at: <https://www.lakestar.com/news/2019/the-next-generation-of-founders-and-their-vital-impact-on-europes-future> [Accessed in August 2019]

PAGE 13

- › HANDELSBLATT. 2019. Tech-Investor Klaus Hommels: „Das Geld für Start-ups kommt von den Falschen“. Available online at: <https://www.handelsblatt.com/unternehmen/it-medien/interview-techinvestor-klaus-hommels-das-geld-fuerstart-ups-kommt-von-den-falschen/24119428.html> [Accessed in August 2019]

PAGE 14

- › EY. 2019. Top 500 F&E: Wer investiert am meisten in Innovationen?. Available online at: [https://www.ey.com/Publication/vwLUAssets/ey-at-analyse-top-500-f-e-unternehmen-weltweit/\\$FILE/EY%20Top%20500%20FE%20Unternehmen%20Welt%202019.pdf](https://www.ey.com/Publication/vwLUAssets/ey-at-analyse-top-500-f-e-unternehmen-weltweit/$FILE/EY%20Top%20500%20FE%20Unternehmen%20Welt%202019.pdf) [Accessed in August 2019]

PAGE 15

- › KfW. 2019. KfW Gründungsmonitor. Available online at: <https://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-Gr%C3%BCndungsmonitor/KfWGruendungsmonitor-2019.pdf> [Accessed in August 2019]

PAGE 16

- › NTV. 2019. Das Klima hat die Wahl entschieden. Available online at: <https://www.n-tv.de/politik/Das-Klima-hat-die-Wahl-entschieden-article21049305.html> [Accessed in August 2019]

PAGE 17

- › BUNDESTAG.DE (2019). Deutscher Bundestag Abgeordnete. Available online at: <https://www.bundestag.de/abgeordnete> [Accessed in August 2019]

PAGE 18

- › FRIEDRICH-EBERT-STIFTUNG. 2019. Umfrage: Digitalisierung in Deutschland. Available online at: <https://www.fes.de/umfrage-digitalisierung-in-deutschland> [Accessed in August 2019]

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PAGE 19

- › MCKINSEY. 2018. Tech-Titanen made in Germany. Eine Perspektive. Available online at: <https://www.mckinsey.de/publikationen/2018-12-05---tech-giants-made-in-germany> [Accessed in August 2019]

PAGE 20

- › FRANKFURTER ALLGEMEINE ZEITUNG. 2019. Kaum jemand will noch Unternehmen gründen. Available online at: <https://www.faz.net/aktuell/wirtschaft/diginomics/kfw-untersuchung-kaum-jemand-will-noch-unternehmen-gruenden-16334333.html> [Accessed in August 2019]
- › KfW. 2019. KfW Gründungsmonitor. Available online at: <https://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-Gr%C3%BCndungsmonitor/KfW-Gruendungsmonitor-2019.pdf> [Accessed in August 2019]
- › KfW. 2006. KfW Gründungsmonitor. Available online at: https://www.kfw.de/Download-Center/Konzernthemen/Research/PDF-Dokumente-Gr%C3%BCndungsmonitor/Gruendungsmonitor_2006_lang.pdf [Accessed in August 2019]

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» About ESCP Europe Business School

ESCP Europe was founded in 1819 and is the first and oldest business school in the world. Ever since, it has been training managers and entrepreneurs. ESCP Europe Business School now offers Bachelor and Master programs as well as MBA, Executive MBA and PhD programs and executive education seminars.

With its multi-campus model in Berlin, London, Madrid, Paris, Turin and Warsaw, which has been in existence since 1973, ESCP Europe actively lives and promotes the European idea. Every year, more than 6,000 students complete their studies at the Business School, and more than 5,000 managers and executives take part in seminars and education programs. They all come from 120 different countries.

In Germany, ESCP Europe Berlin is a scientific university recognized by the state. As such, it can award degrees, including doctorates. ESCP Europe Berlin is the first university in Germany to be recognized by all three major international university accreditation agencies : AACSB, EFMD (EQUIS) and AMBA. ESCP Europe is among the 1% of business schools in the world that have the so-called „Triple Crown“. The success of the university is also reflected in the international FT European Business School Ranking, where ESCP Europe regularly occupies top positions..

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