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# *2018 Global Innovation 1000*

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## What the Top Innovators Get Right

# *Introduction*

*What the Top Innovators Get Right*

*Innovation 1000 update*

***For the 14<sup>th</sup> year, Strategy& studied innovation trends and spending at the world's 1000 largest publicly listed corporate R&D spenders***



**2005:**  
**Money isn't everything**



**2006:**  
**Smart spenders**



**2007:**  
**The customer connection**



**2008:**  
**Beyond borders**



**2009:**  
**Profits down, spending steady**



**2010:**  
**How top innovators keep winning**



**2011:**  
**Why culture is key**



**2012:**  
**Making ideas work**



**2013:**  
**Navigating the digital future**



**2014:**  
**Proven paths to innovation success**



**2015:**  
**Innovation's new world order**



**2016:**  
**Software as a catalyst**



**2017:**  
**Will Stronger Borders Weaken Innovation?**



**2018:**  
**What the Top Innovators Get Right**

## *The study has become a globally recognized contributor to better understanding what drives innovation success*

- The Global Innovation 1000 study has received significant media and academic attention:
  - Called “*the most comprehensive assessment of the relationship between R&D investment and corporate performance*” by the **The Economist** in 2009
  - In 2018 awarded the National Gold Medal for *Best Web Feature Article* and in 2011 & 2014, awarded Gold National Medal for *Original Research* by the **American Society of Business Press Editors** (“*the Azbee*”)
  - Given “*2006 Special Achievement Award for Advancing Innovation*” by **Innovate Forum**
  - In 2009 given “*Best of Visions*” award by **Product Development Management Association**
  - Cited in more than 200 publications spanning 34 countries and 6 continents



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## ***Executive Summary – High-leverage innovators***

- This year we conducted an analysis to **identify High-Leverage Innovators (HLIs)** – companies from our Top 1000 list that consistently outperform their industry peers across a basket of 7 measures of financial success, but spend below their peers when it comes to R&D intensity
- The high-leverage innovator analysis was conducted across **three 5-year periods ending in 2007, 2012, and 2017 where HLIs only made up less than 12% of the Top 1000 population** each period
  - **33 HLI companies appeared on 2 out of 3 HLI year lists**
  - **Only 2 HLI companies – Apple & Stanley Black & Decker** made the list all three times
  - **HLIs even more dramatically outperformed the rest of the Top 1000 during the 2007-2012 period**, a period that included the **Great Recession** and initial recovery
- High-leverage innovators and the larger universe of companies that report comparatively high performance vs. their peers share **six key characteristics**:
  1. Close alignment of innovation and business strategy
  2. Company-wide cultural support for innovation
  3. Close involvement with innovation program by leadership
  4. Deep understanding of insights from end-users
  5. Rigorous approach to R&D project selection
  6. Ability to integrate all of these things together to create a unique experience

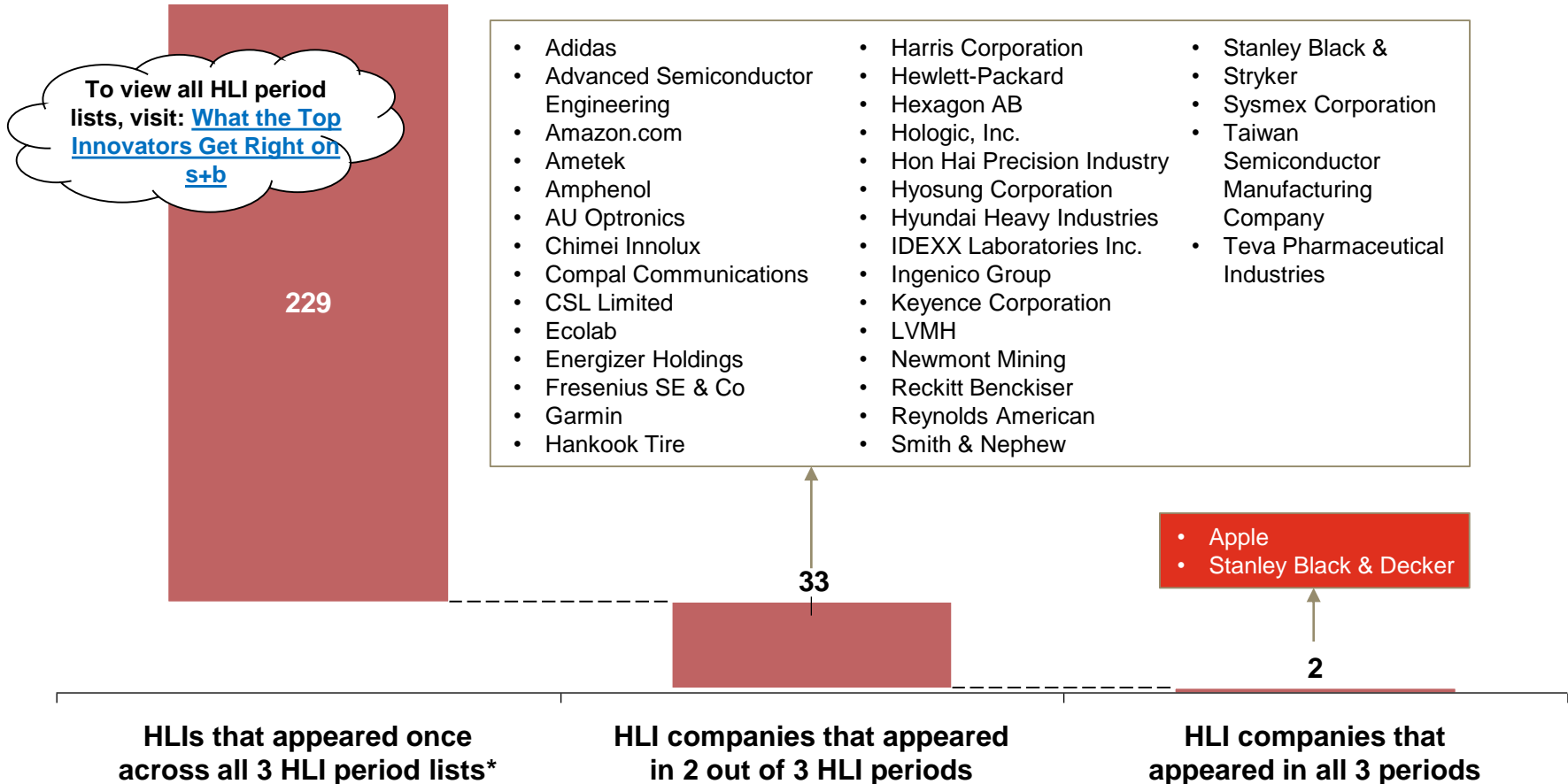
## ***Executive Summary – Update on Top 1000 companies***

- In 2018 total **R&D spending** by the Global Innovation 1000 **increased 11.4% to \$781.8B**
- **R&D intensity remains at an all-time study high of 4.5%**, with revenue for the 1000 companies rising by 11.4% - driven by increase in sales across all industries
- **Consumer overtook Software& Internet for the first time in 5 years as the fastest YoY growth in R&D spending**, up 26.3% this year while Software and Internet, the second fastest growth industry for R&D spending grew 20.6%
- **Healthcare companies are on track to become the biggest R&D spenders by 2020**
- **Computing & Electronics, Healthcare, and Auto contributed 60% of R&D spending in 2018**, slightly down from 2017
- Regionally, all regions saw an increase in R&D spend, most notably **China up 34.4% and Europe up 14%**, while North America and Japan saw single digit increases in R&D
- **Amazon maintained the #1 spot in the top R&D spenders list for the second year in a row.** Sanofi and Siemens joined the Top 20 spenders since last appearing on it in 2015 and 2011 respectively
- **Apple regained the top rank as the most innovative company** from Alphabet. **Netflix joined the top 10 most innovative companies list for the first time**
- Companies selected by survey respondents as **the most innovative companies continue as a group to outperform** the top 20 R&D spenders

*Note: Use of local currency would result in different YoY changes*

# Only two firms made the HLI list for the entire 15 years

## Comparing the HLI companies over three 5-year periods – By # of HLI companies



\*2007 – 118 HLI companies, 2012 – 95 HLI companies, 2017 – 88 HLI companies

Source: 2017 Global Innovation 1000 Study, 2012 Global Innovation 1000 Study, 2007 Global Innovation 1000 Study, Bloomberg data, Capital IQ data



# We identified 88 high-leverage innovators in our 2017 Top 1000

## Aerospace and Defense

Company Name	Region
Embraer S.A.	ROW

## Automotive

Company Name	Region
Burelle SA	Europe
Fiat Chrysler Automobiles N.V.	Europe
Ford Otomotiv Sanayi A.S.	ROW
Geely Automobile Holdings Limited	China
Hanon Systems	ROW
Subaru Corporation	Japan

## Chemicals and Energy

Company Name	Region
Eastman Chemical Company	North America
Ecolab Inc.	North America
DIC Corporation	Japan
Lonza Group Ltd	Europe

## Consumer

Company Name	Region
Adidas AG	Europe
Altria Group, Inc.	North America
Amer Sports Corporation	Europe
LVMH Moët Hennessy Louis Vuitton	Europe
Pou Chen Corporation	ROW
Reynolds American Inc.	North America
Sky plc	Europe
Svenska Cellulosa Aktiebolaget SCA	Europe
Tyson Foods, Inc.	North America
Walgreens Boots Alliance, Inc.	North America

## Computing and Electronics

Company Name	Region
AAC Technologies Holdings Inc.	China
AMETEK, Inc.	North America
Apple Inc.	North America
Entegris, Inc.	North America
GN Store Nord A/S	Europe
Hangzhou Hikvision Digital Technology Co., Ltd.	China
Hengtong Optic-electric Co., Ltd.	China
Ingenico Group - GCS	Europe
Jiangsu Zhongtian Technology Co.	China
Keyence Corporation	Japan
Leshi Internet Information & Technology Corp., Beijing	China
Pegatron Corporation	ROW
Siliconware Precision Industries Co.,	ROW
Skyworks Solutions, Inc.	North America
Taiwan Semiconductor Manufacturing Company Limited	ROW

## Healthcare

Company Name	Region
Cadila Healthcare Limited	ROW
CSL Limited	ROW
Daewoong Co., Ltd.	ROW
Essilor International Société Anonyme	Europe
Fresenius SE & Co. KGaA	Europe
Glenmark Pharmaceuticals Limited	ROW
Grifols, S.A.	Europe
Hikma Pharmaceuticals PLC	Europe
Hologic, Inc.	North America
Jazz Pharmaceuticals Public Limited Company	Europe
Jiangsu Hengrui Medicine Co., Ltd.	China
Lupin Limited	ROW
Mallinckrodt Public Limited Company	North America
Medtronic plc	Europe
Mylan N.V.	North America
ResMed Inc.	North America
Santen Pharmaceutical Co., Ltd.	Japan
Shanghai Fosun Pharmaceutical (Group) Co., Ltd.	China
Sino Biopharmaceutical Limited	China
Sun Pharmaceutical Industries Limited	ROW
Sysmex Corporation	Japan
*Thermo Fisher Scientific Inc.	North America
Valeant Pharmaceuticals International, Inc.	North America

Source: 2017 Global Innovation 1000 Study, Bloomberg data, Capital IQ data

**...continued**

### Industrial

Company Name	Region
ASSA ABLOY AB (publ)	Europe
Daikin Industries,Ltd.	Japan
Dürr Aktiengesellschaft	Europe
HeidelbergCement AG	Europe
Hexagon AB	Europe
Hyosung Corporation	ROW
KION GROUP AG	Europe
KONE Oyj	Europe
Kubota Corporation	Japan
Obayashi Corporation	Japan
Power Construction Corporation of China Ltd.	China
Schindler Holding AG	Europe
Sealed Air Corporation	North America
Shanghai Construction Group Co., Ltd.	China
*Stanley Black & Decker, Inc.	North America
Sumitomo Heavy Industries, Ltd.	Japan
Sunny Optical Technology (Group) Company Limited	Europe
Xinjiang GoldWind Science & Technology Co., Ltd.	China

### Software and Internet

Company Name	Region
Amadeus IT Group, S.A.	Europe
NetEase, Inc.	China
Playtech plc	Europe
SS&C Technologies Holdings, Inc.	North America
Tencent Holdings Limited	China
Zhejiang Dahua Technology Co., Ltd.	China

### Telecoms

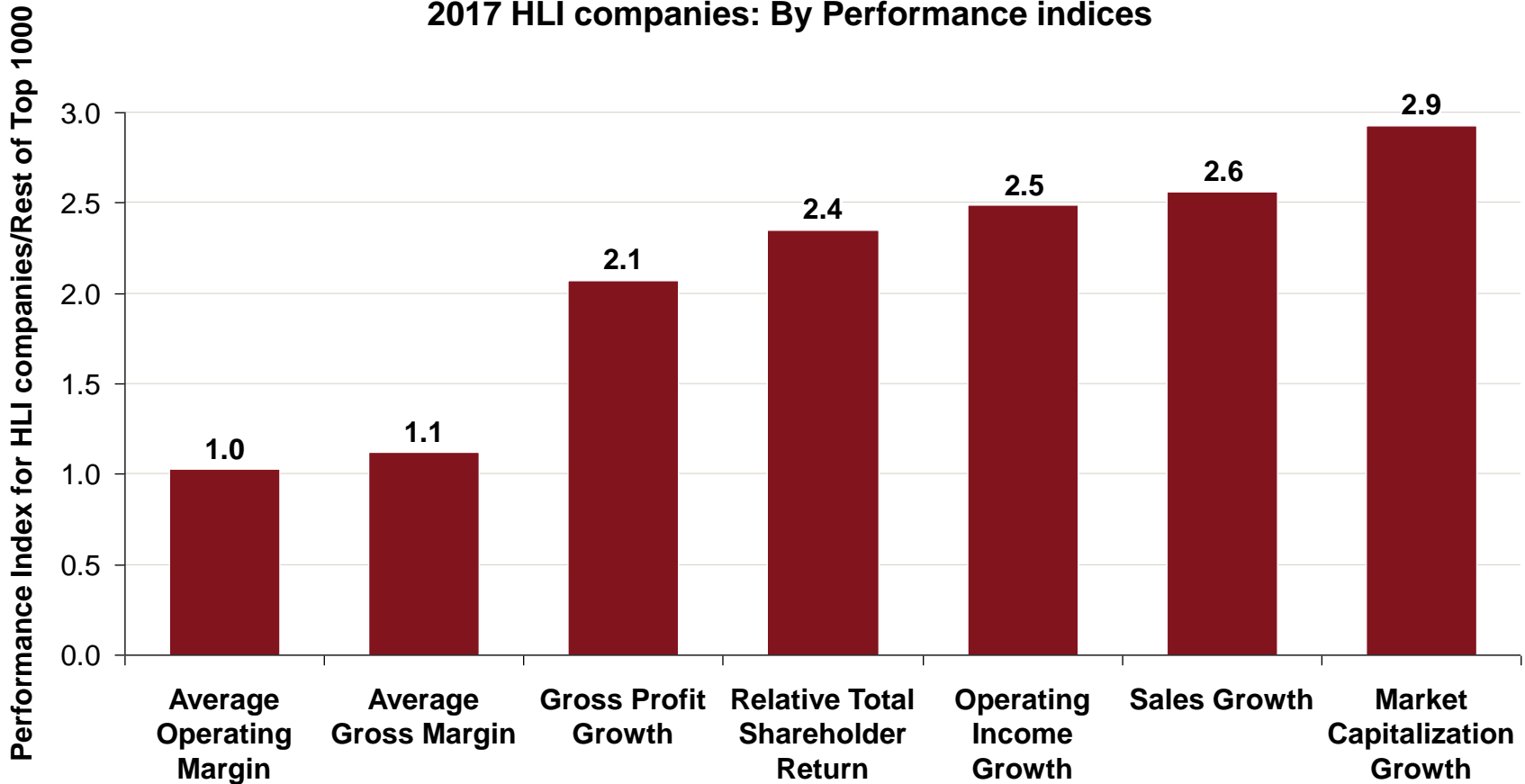
Company Name	Region
AT&T Inc.	North America
BCE Inc.	North America
KDDI Corporation	Japan
SoftBank Group Corp.	Japan

Apple and Stanley Black & Decker were the only two companies that appeared on all three HLI list for the study years: 2007, 2012, and 2017

To explore the High-Leverage Innovators list further (including the HLI list for the study years 2007 and 2012), visit <https://www.strategy-business.com/topinnovators>

# *High-Leverage Innovators outperform over a sustained period of time on most performance metrics*

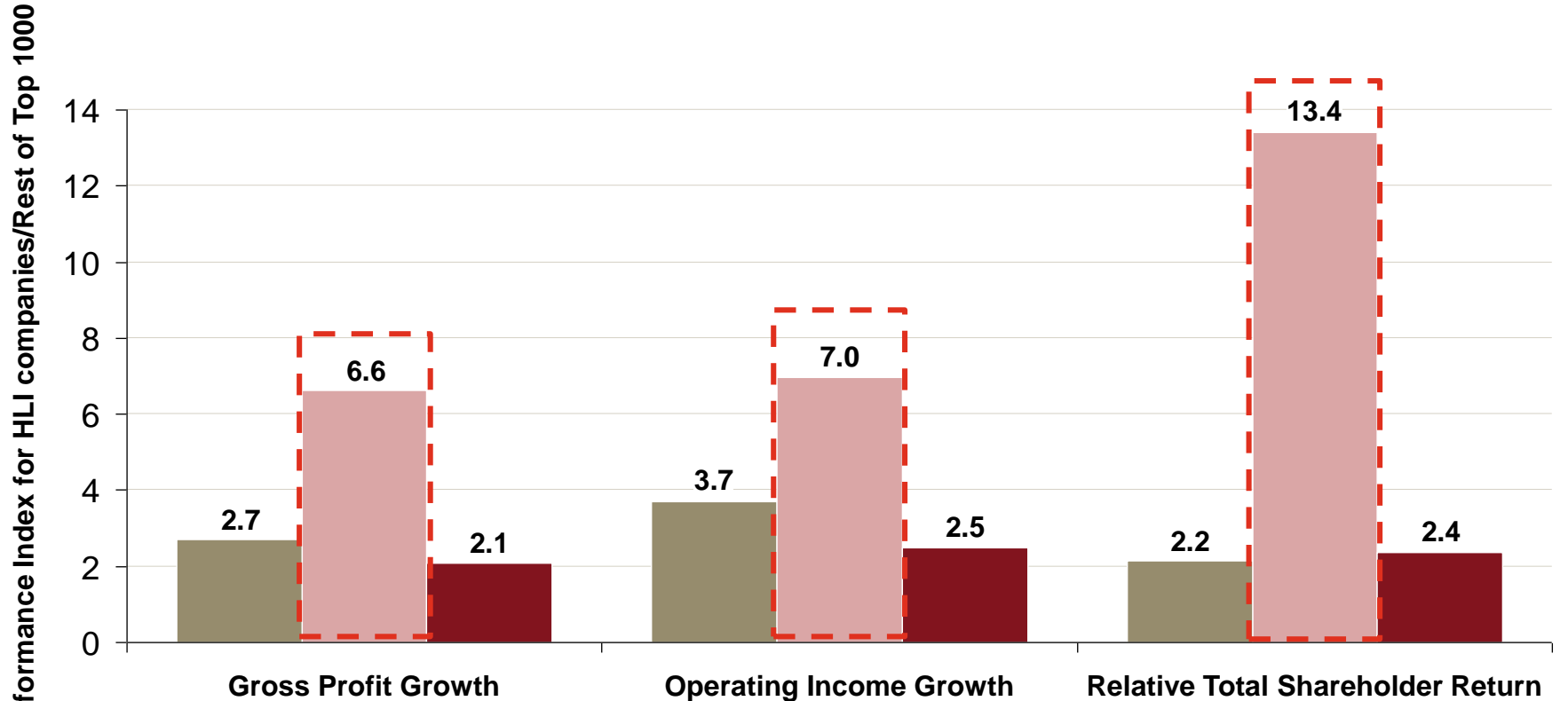
2017 HLI companies: By Performance indices



Notes: 2017 – 88 HLI companies, 912 rest of Top 1000 companies  
Source: 2017 Global Innovation 1000 study, Bloomberg data, Capital IQ data

# *HLI companies performed even better during the Great Recession and first years of the recovery*

Comparing performance indices (2007, 2012, and 2017 period)

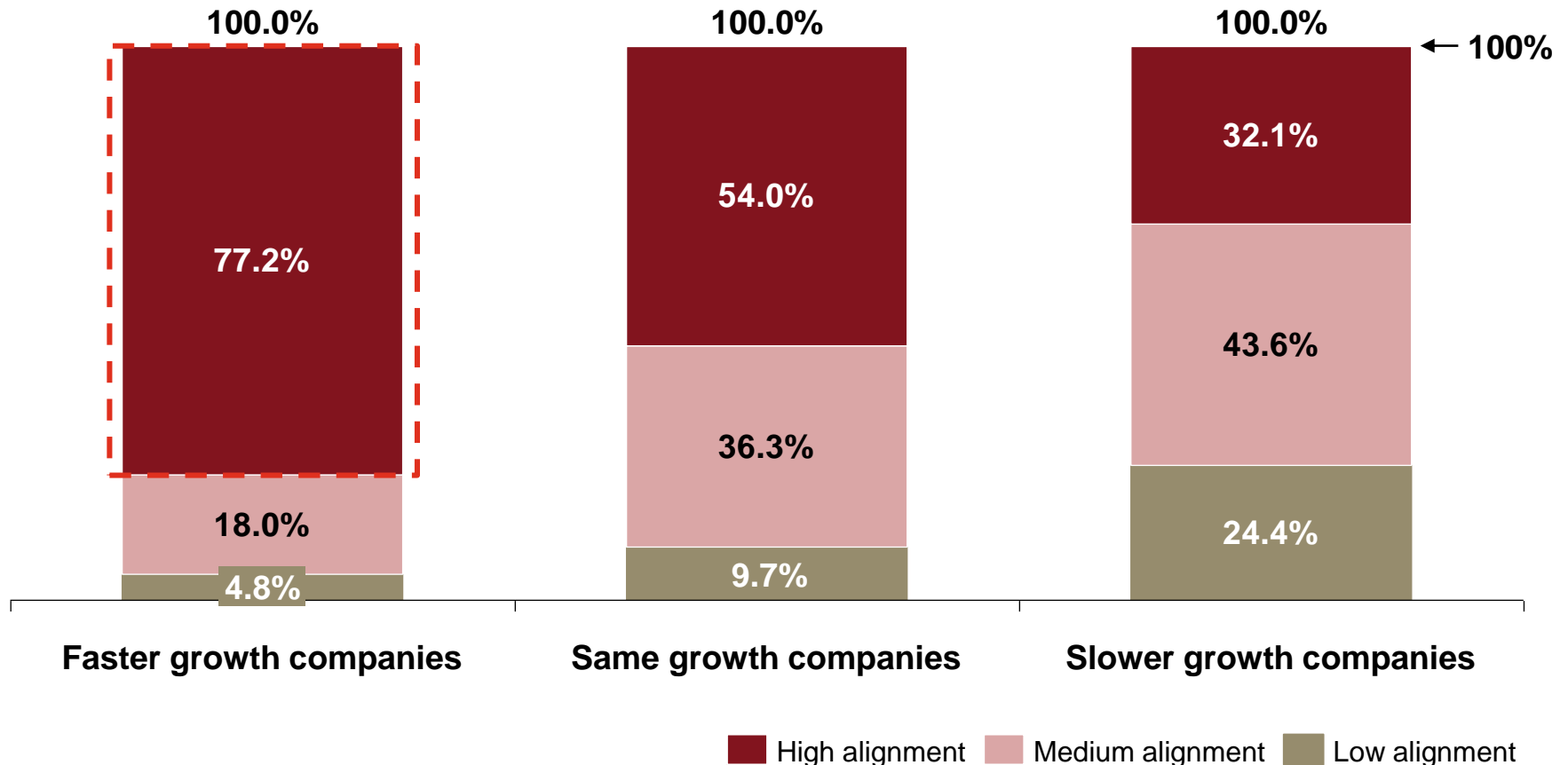


Notes: 2007 – 118 HLI companies, 882 rest of Top 1000 companies, 2012 – 95 HLI companies, 905 rest of Top 1000 companies, 2017 – 88 HLI companies, 912 rest of Top 1000 companies. In 2012, the 905 companies that did not make the HLI list saw very low TSR compared to the 95 HLI companies. Gross Profit Growth, Operating Income Growth, and Relative TSR are the metrics shown here vs. all 7 due to the significant performance of HLI companies in 2012

Source: 2007 Global Innovation 1000 study, 2012 Global Innovation study, 2017 Global Innovation 1000 study, Bloomberg data, Capital IQ data

# *Faster growth companies have tighter alignment between their innovation and business strategies*

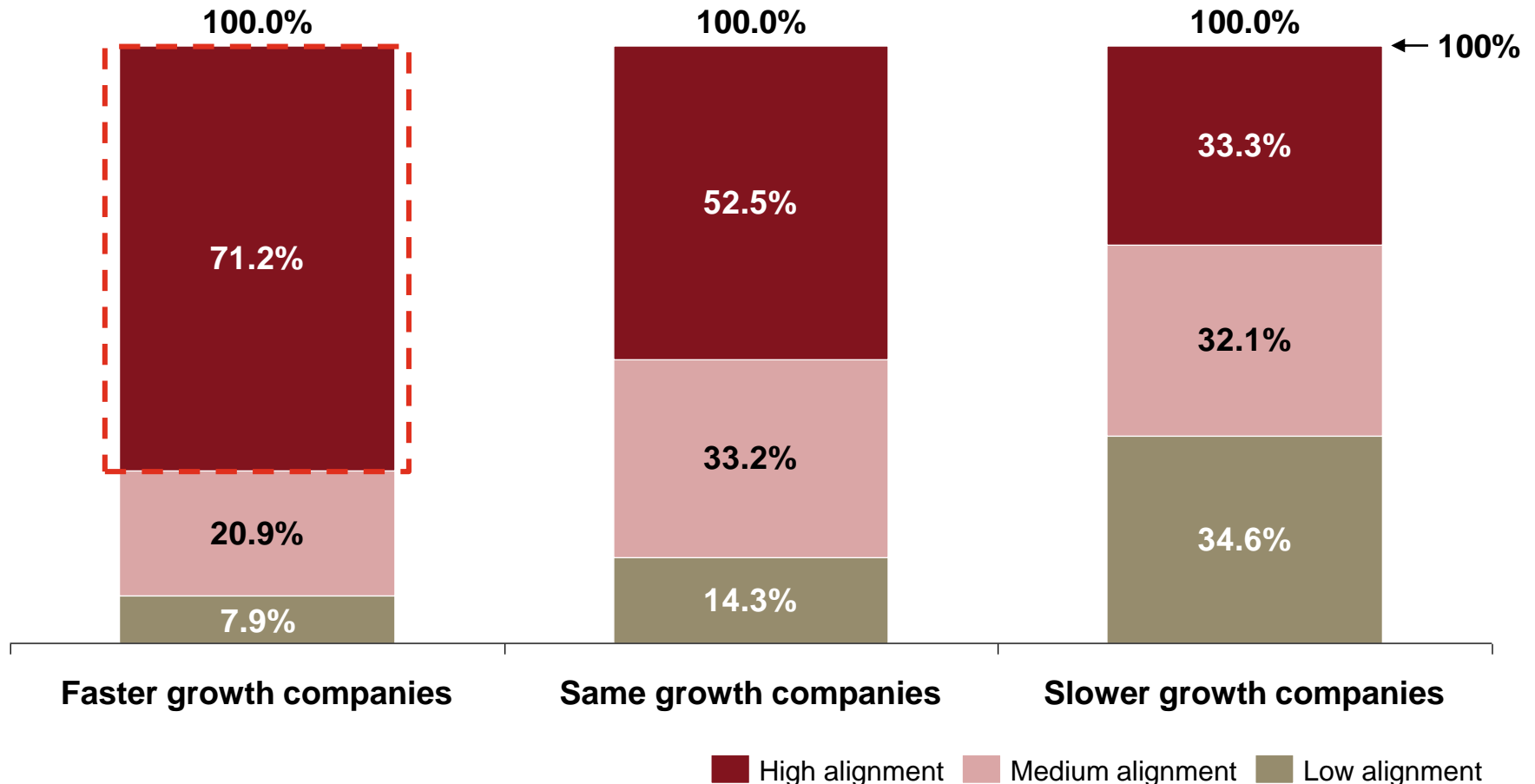
**Alignment of innovation strategy with business strategy (by revenue growth type)**



Source: 2018 Global Innovation 1000 Study

# *Faster growth companies see tighter alignment between their culture and their innovation strategy*

**Alignment of company culture support of innovation strategy (by revenue growth type)**

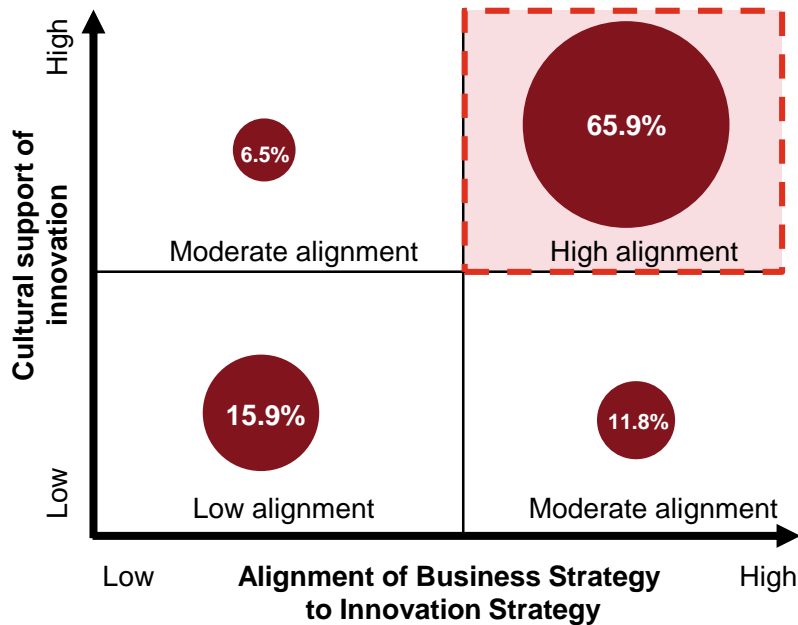


Source: 2018 Global Innovation 1000 Study

***Not only did faster revenue growth companies have high alignment of business and innovation strategy, they were also more likely to have high cultural support of innovation***

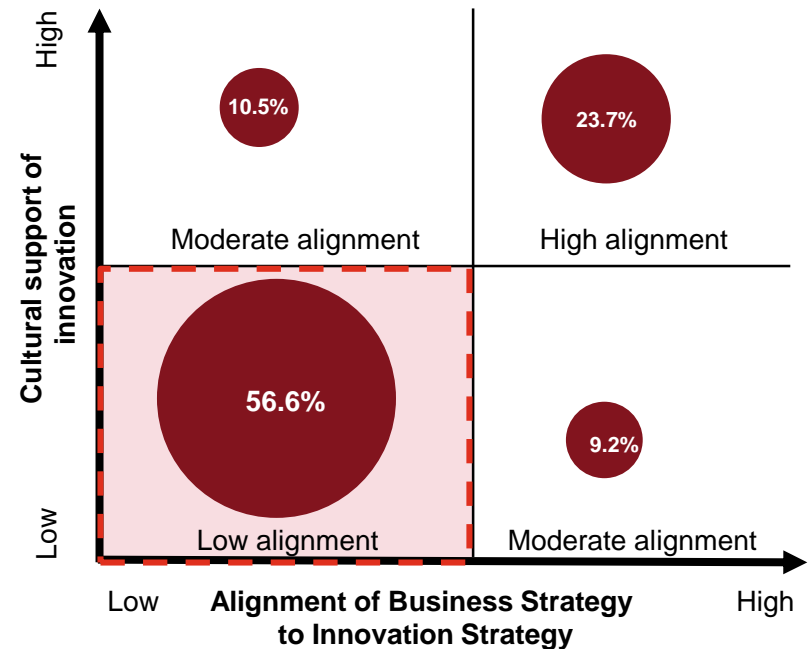
**Fast revenue growth companies**


Cultural support of innovation x Alignment of business strategy to innovation strategy



**Slow revenue growth companies**

Cultural support of innovation x Alignment of business strategy to innovation strategy

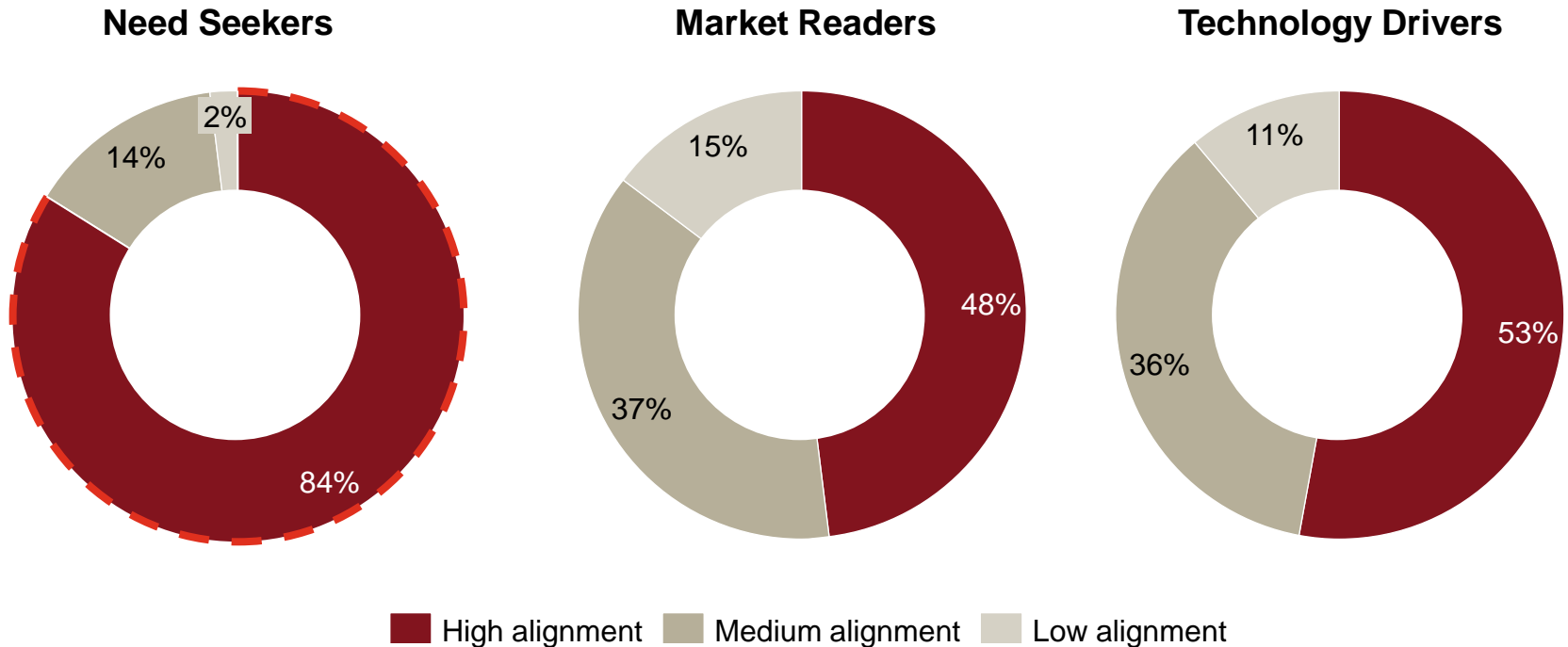


 = represents the % of survey respondents that reported specific revenue growth type (fast, slow)

Source: 2018 Global Innovation 1000 Study

***Need Seekers' innovation strategies were almost twice as likely to be highly aligned with their business strategies vs. other models***

**Alignment of innovation strategy with business strategy**

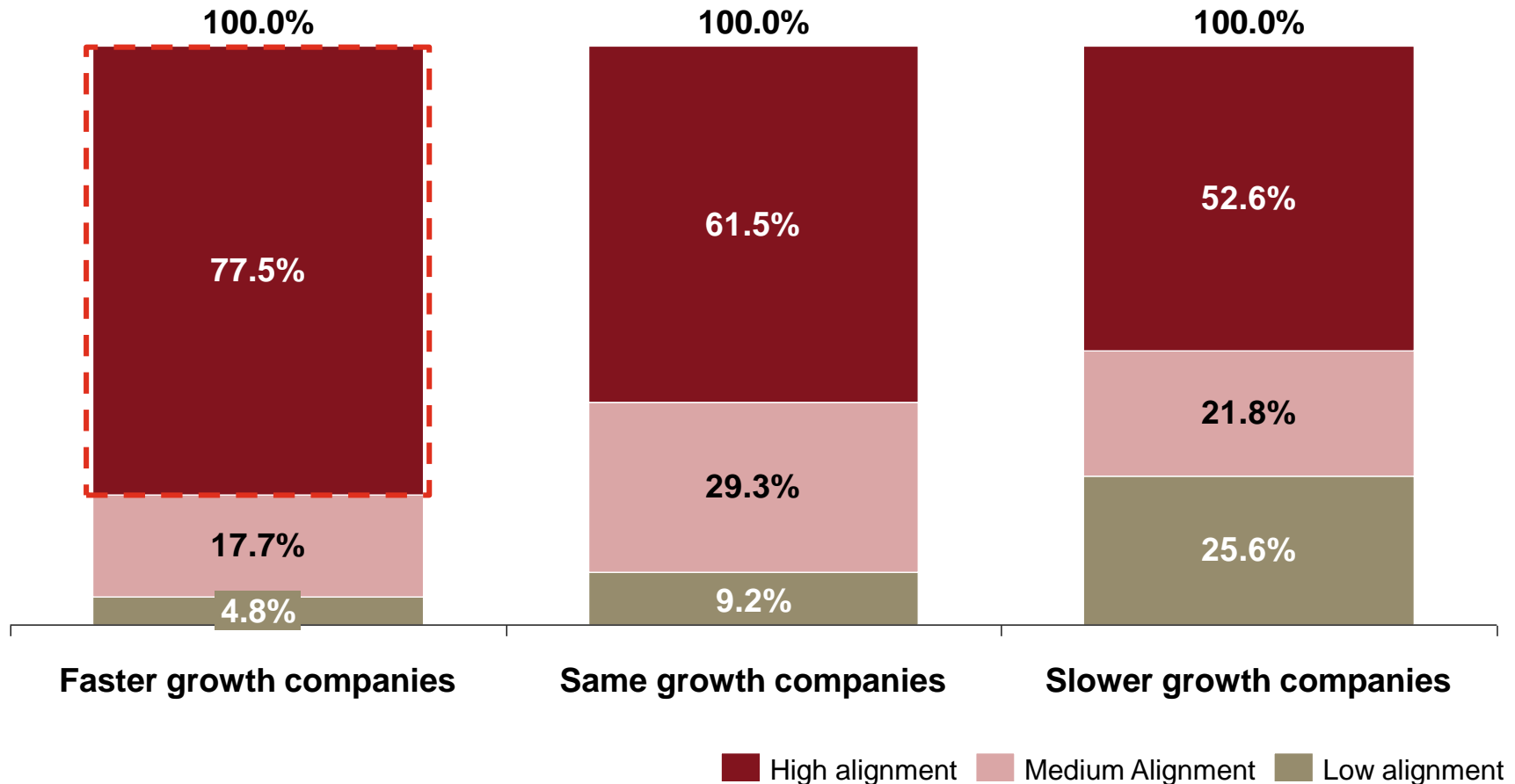


Source: 2018 Global Innovation 1000 Study



# *Fast revenue growth companies see the most involvement of the executive team with R&D investment and strategy*

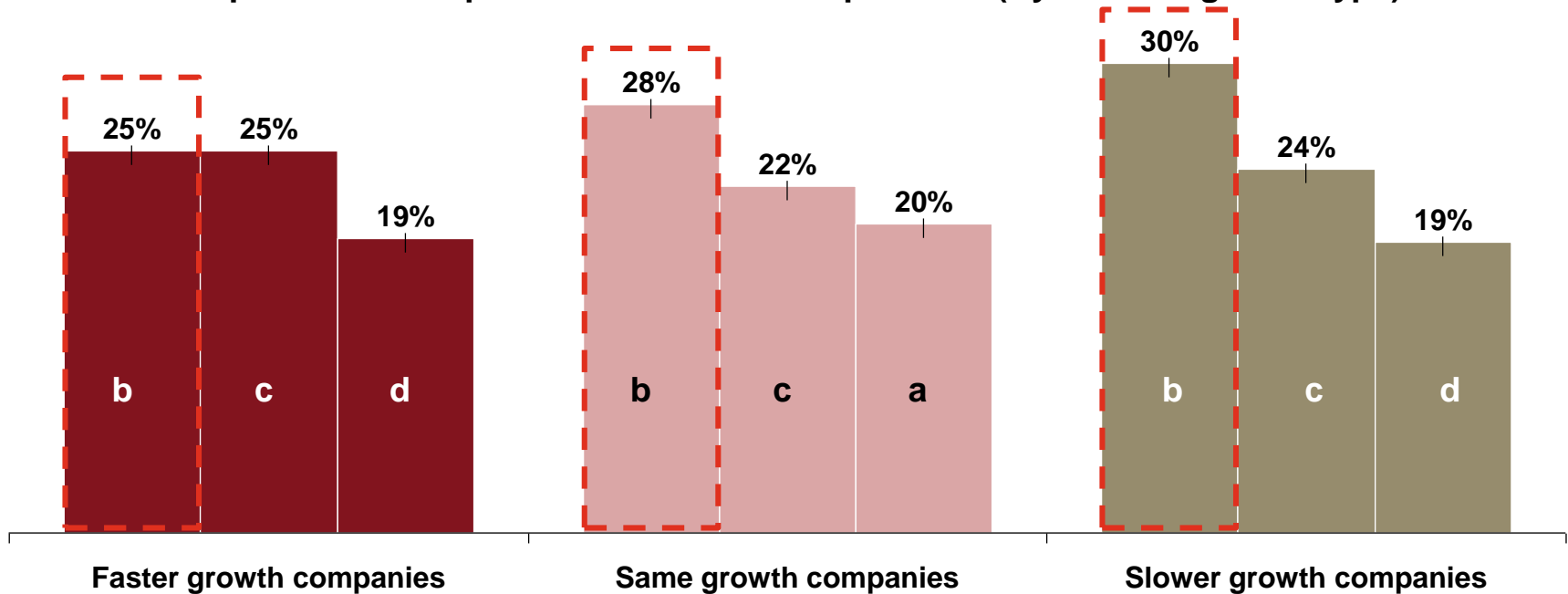
Involvement of executive team in R&D investment and strategy (by revenue growth type)



Source: 2018 Global Innovation 1000 Study

# All revenue growth type companies ranked deep customer insights as the most important ideation capability

Top 3 ideation capabilities in terms of importance (By revenue growth type)



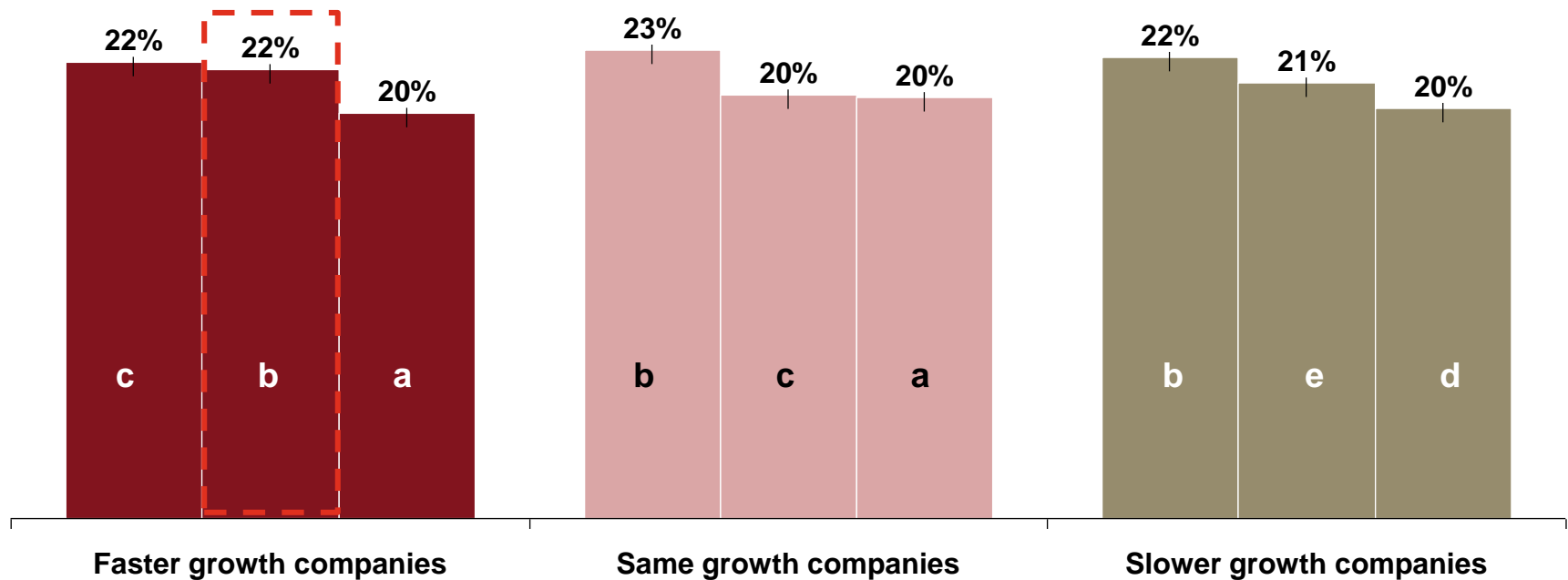
## Ideation capability coding for bar chart above:

- a) Open innovation/capturing ideas at any point in the process from external sources
- b) Deep consumer and customer insights and analytics**
- c) Detailed understanding of emerging technologies and trends
- d) Independent competitive insights from the marketplace including competitor analysis and teardowns
- e) Supplier and distributor engagement in ideation process

Source: 2018 Global Innovation 1000 Study

## *However, fast revenue growth companies do not see themselves as being the most competent in deep customer insights*

Top 3 ideation capabilities in terms of competency (By revenue growth type)



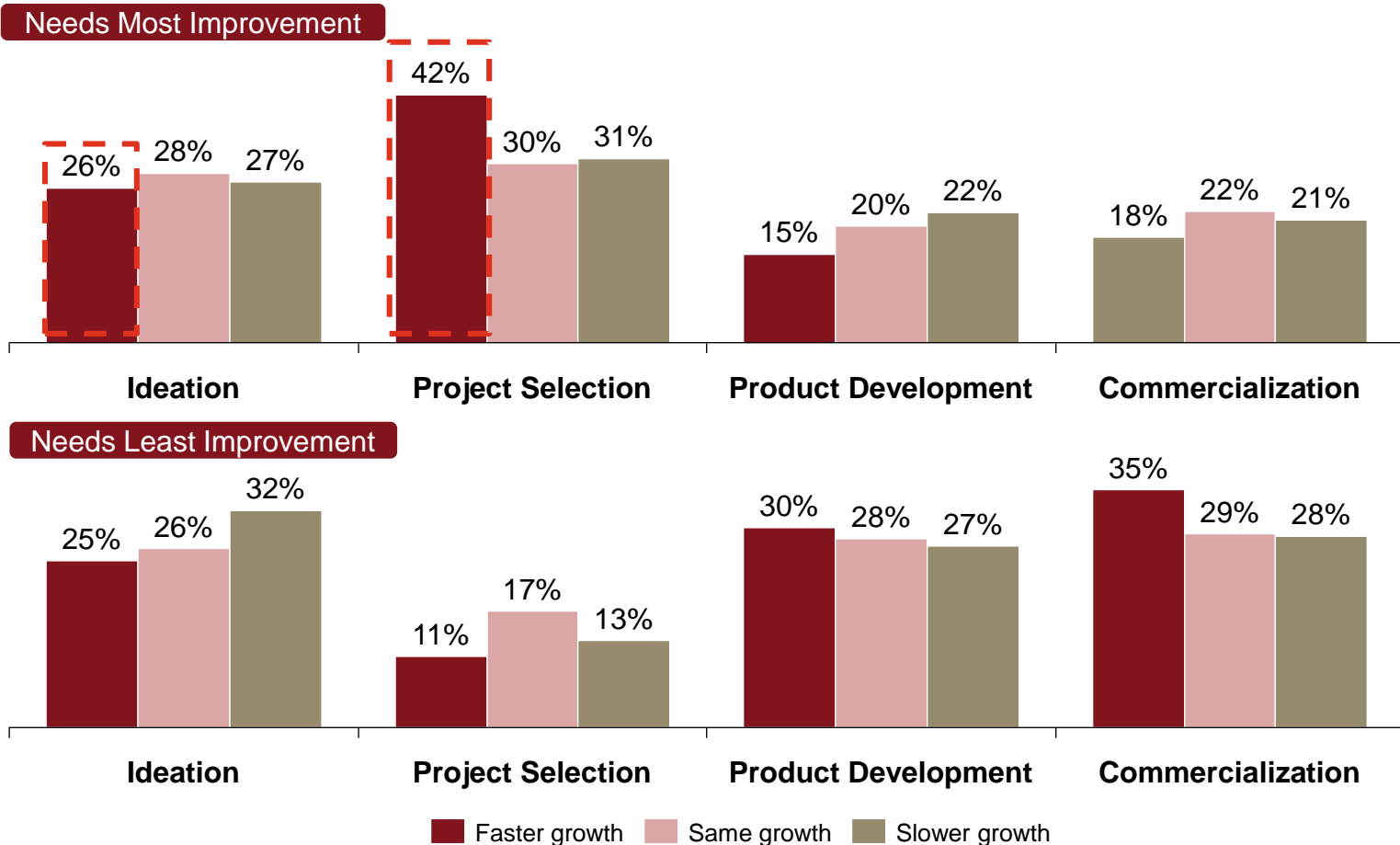
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Source: 2018 Global Innovation 1000 Study

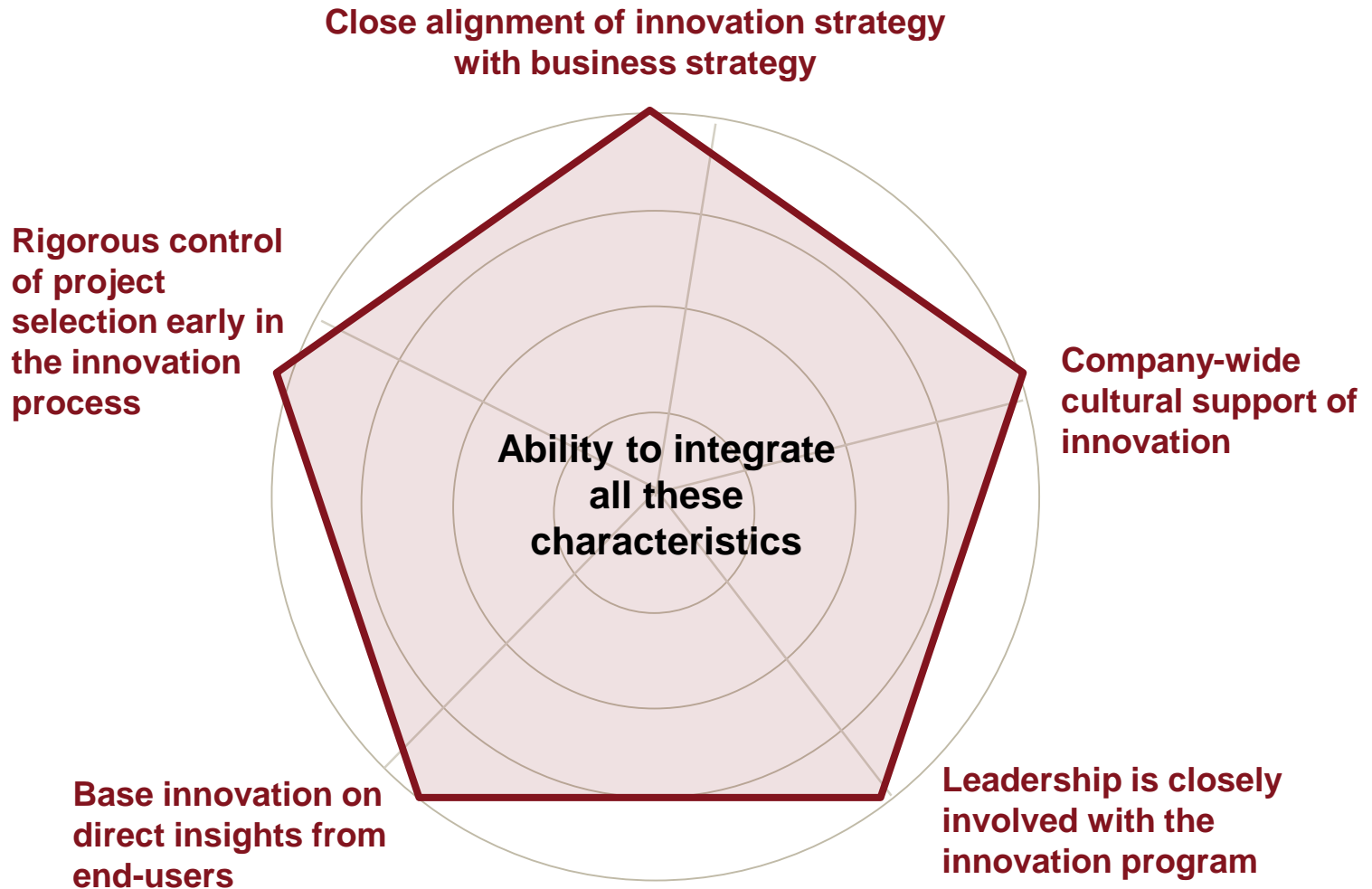
# *Faster growth companies selected the ideation and project selection stages as areas of opportunity to improve*

Innovation stages where most/least improvement is needed (By revenue growth type)



Source: 2018 Global Innovation 1000 Study

***HLIs excel at each of these 5 characteristics and have been able to integrate them***



Source: 2018 Global Innovation 1000 Study

*Introduction*

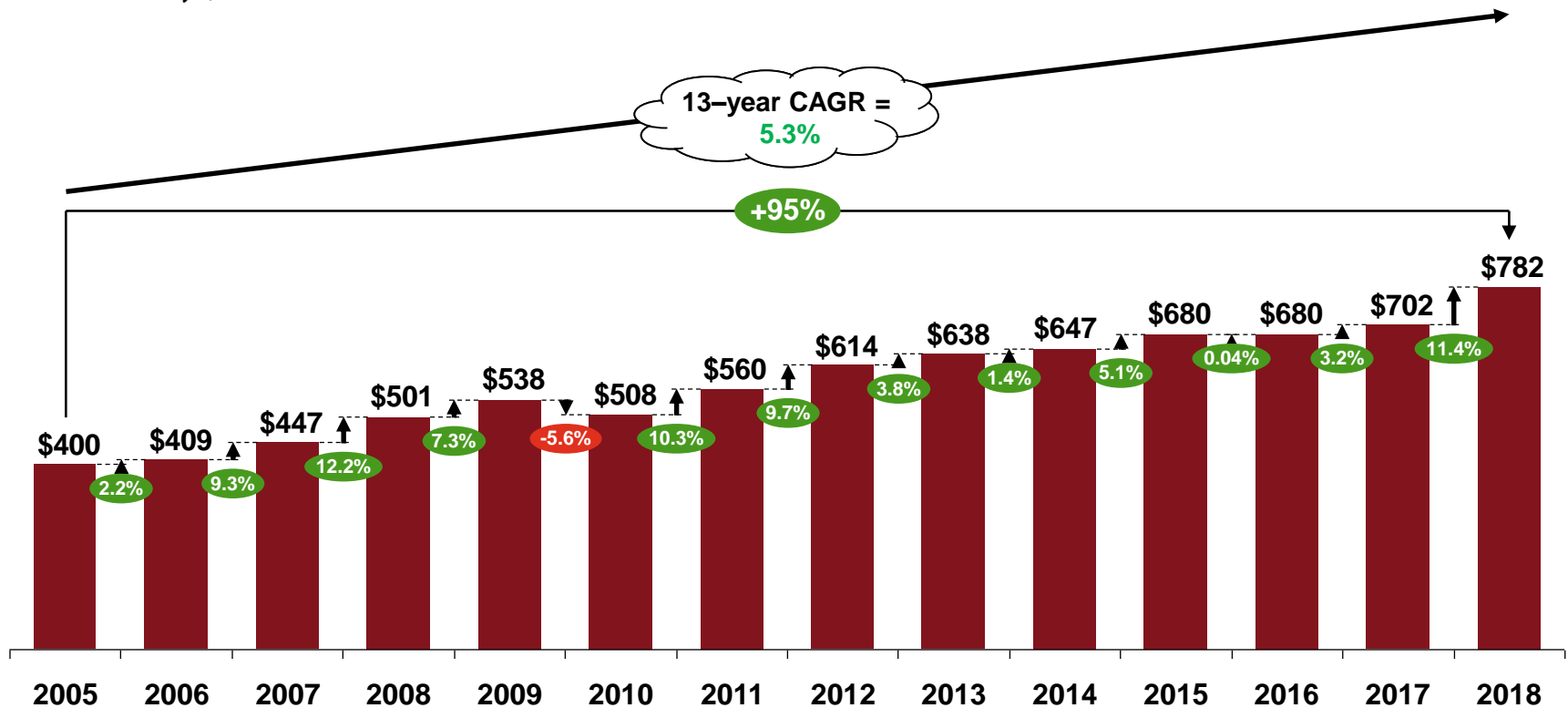
*What the Top Innovators Get Right*

*Innovation 1000 update*

***In 2018, R&D spending by the Top 1000 companies accelerated 11.4% from 2017 spending levels, the highest growth since 2007***

## Global Innovation 1000 R&D Spending

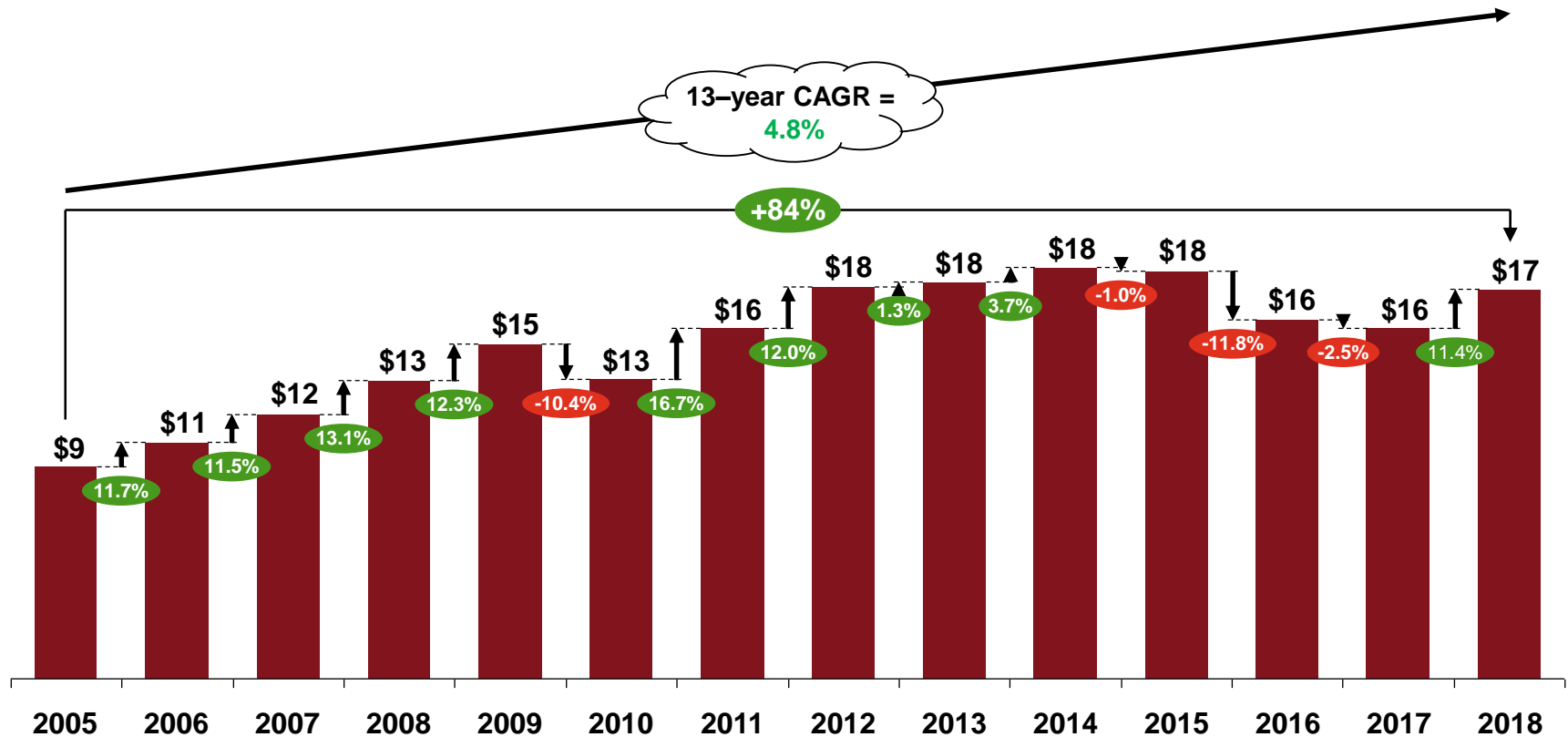
2005–2018, \$US Billion



Source: 2018 Global Innovation 1000 Study, Bloomberg data, Capital IQ data, Thomson Reuters Eikon data

# Total revenue of the Innovation 1,000 also rose by 11.4% from 2017 to 2018

**Global Innovation 1000 Revenue**  
2005–2018, \$US Trillion

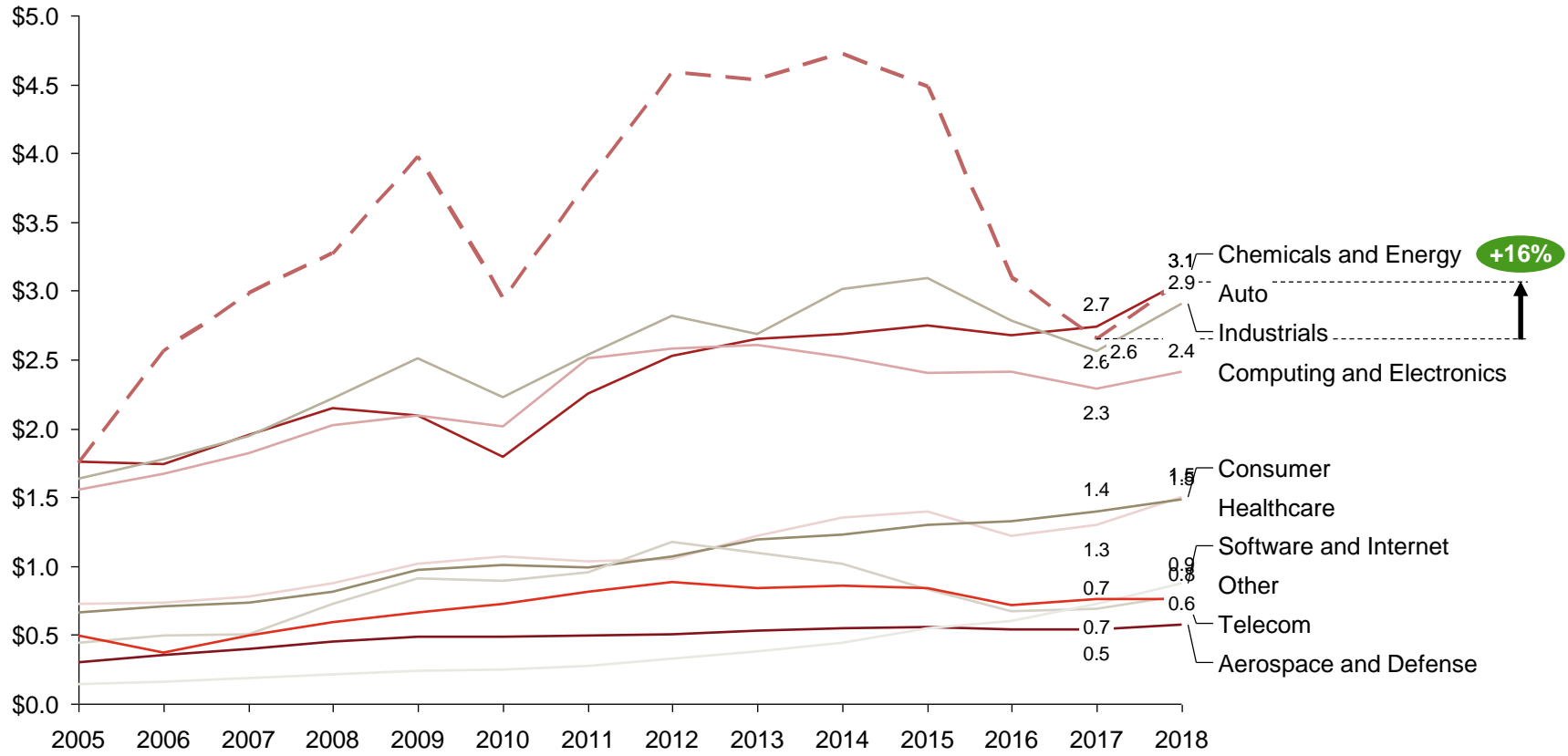


Source: 2018 Global Innovation 1000 Study, Bloomberg data, Capital IQ data, Thomson Reuters Eikon data



# *This was due to a rise in revenue across all industries, but in particular from growth in Energy*

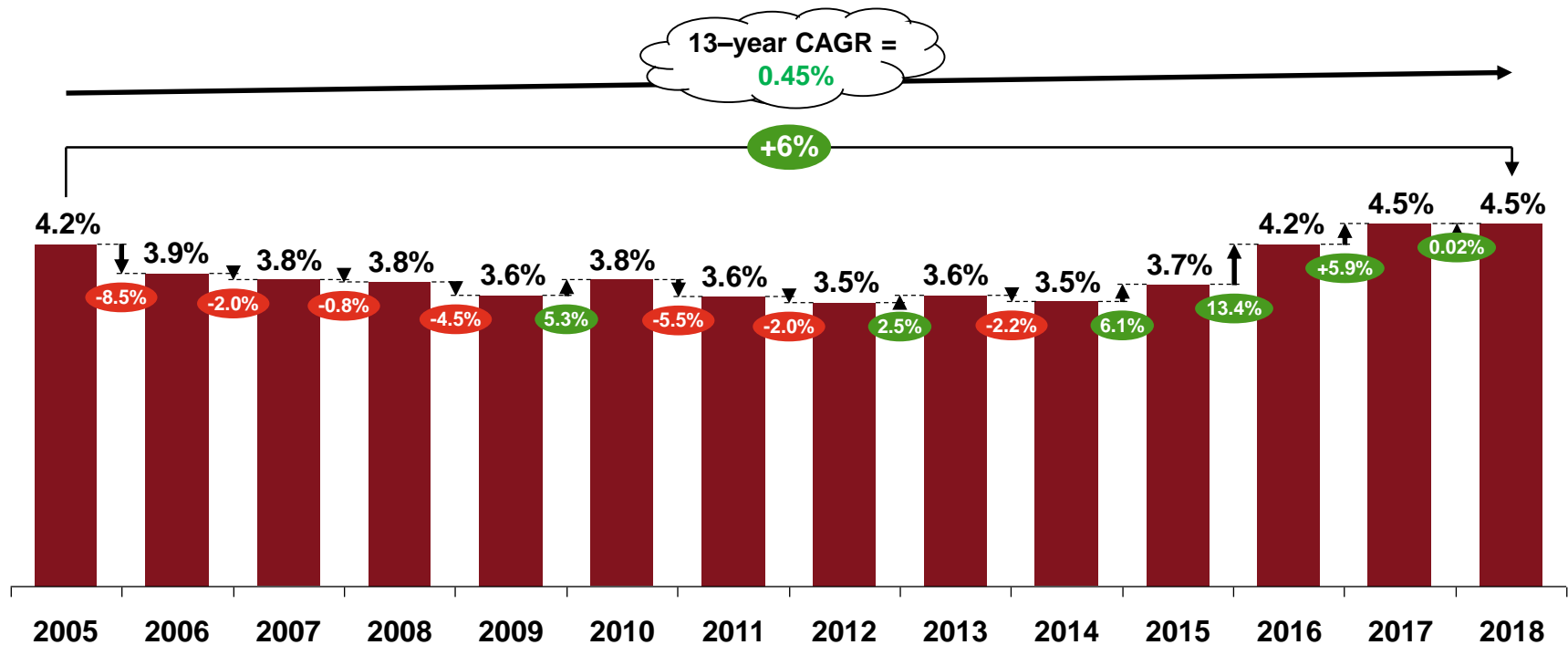
**Revenue by Industry**  
2005–2018, \$US Trillion



Source: 2018 Global Innovation 1000 Study, Bloomberg data, Capital IQ data, Thomson Reuters Eikon data

# R&D intensity remains at an all-time high

## Global Innovation 1000 R&D Intensity 2005–2018

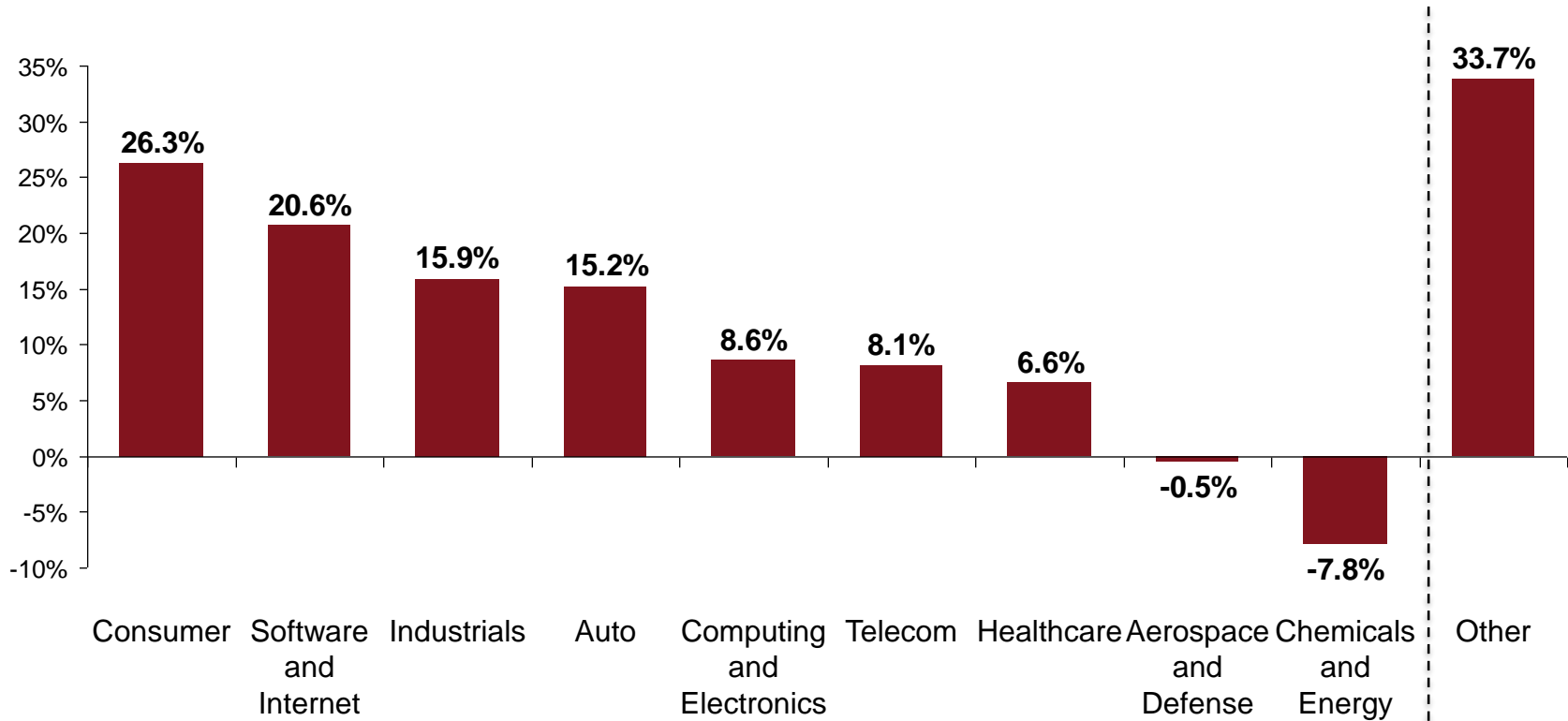


Source: 2018 Global Innovation 1000 Study, Bloomberg data, Capital IQ data, Thomson Reuters Eikon data

# The Consumer industry overtook Software & Internet for the first time in 5 years as the fastest growth in R&D spending

## Change in R&D Spending by Industry

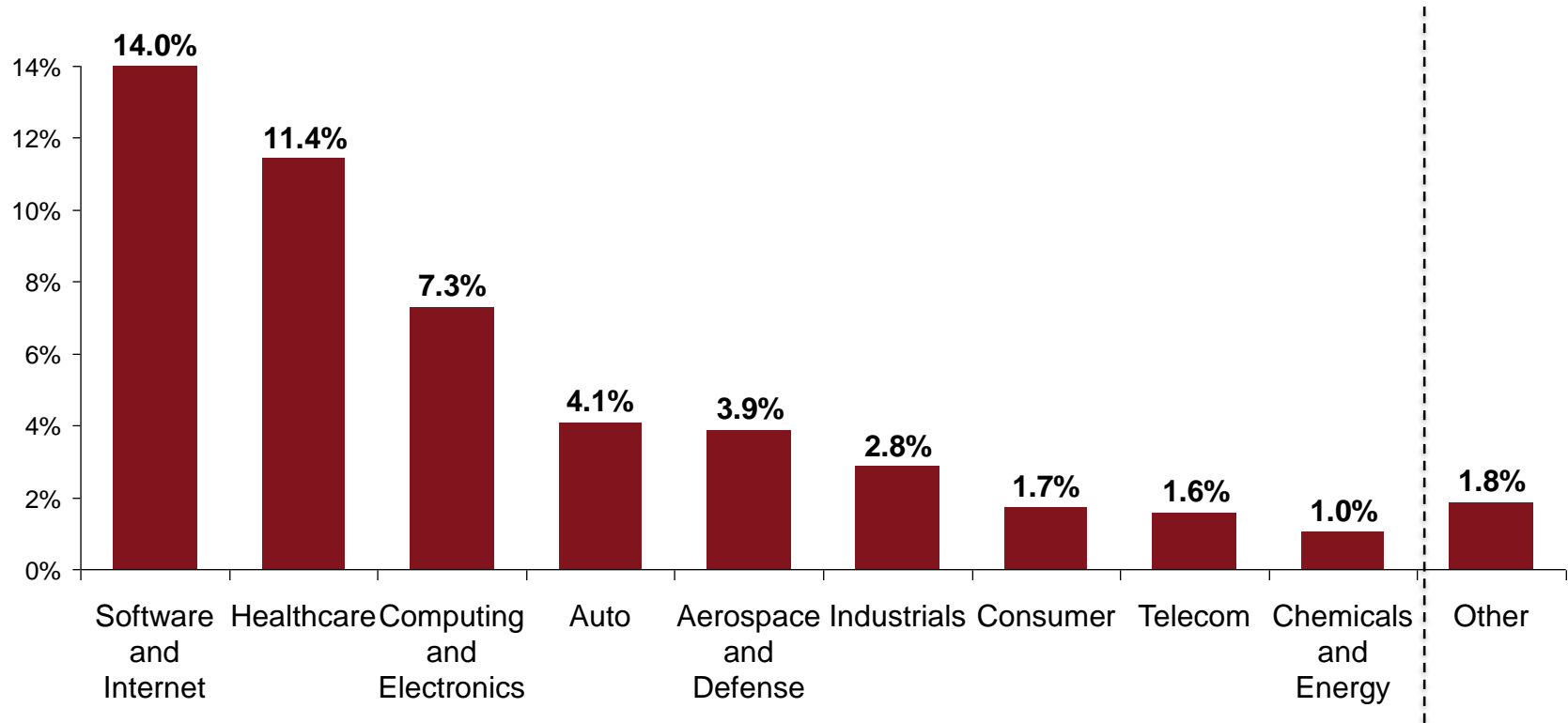
2017–2018



Source: 2018 Global Innovation 1000 Study, Bloomberg data, Capital IQ data, Thomson Reuters Eikon data

## *Software & Internet and Healthcare have the largest R&D intensities of all industries*

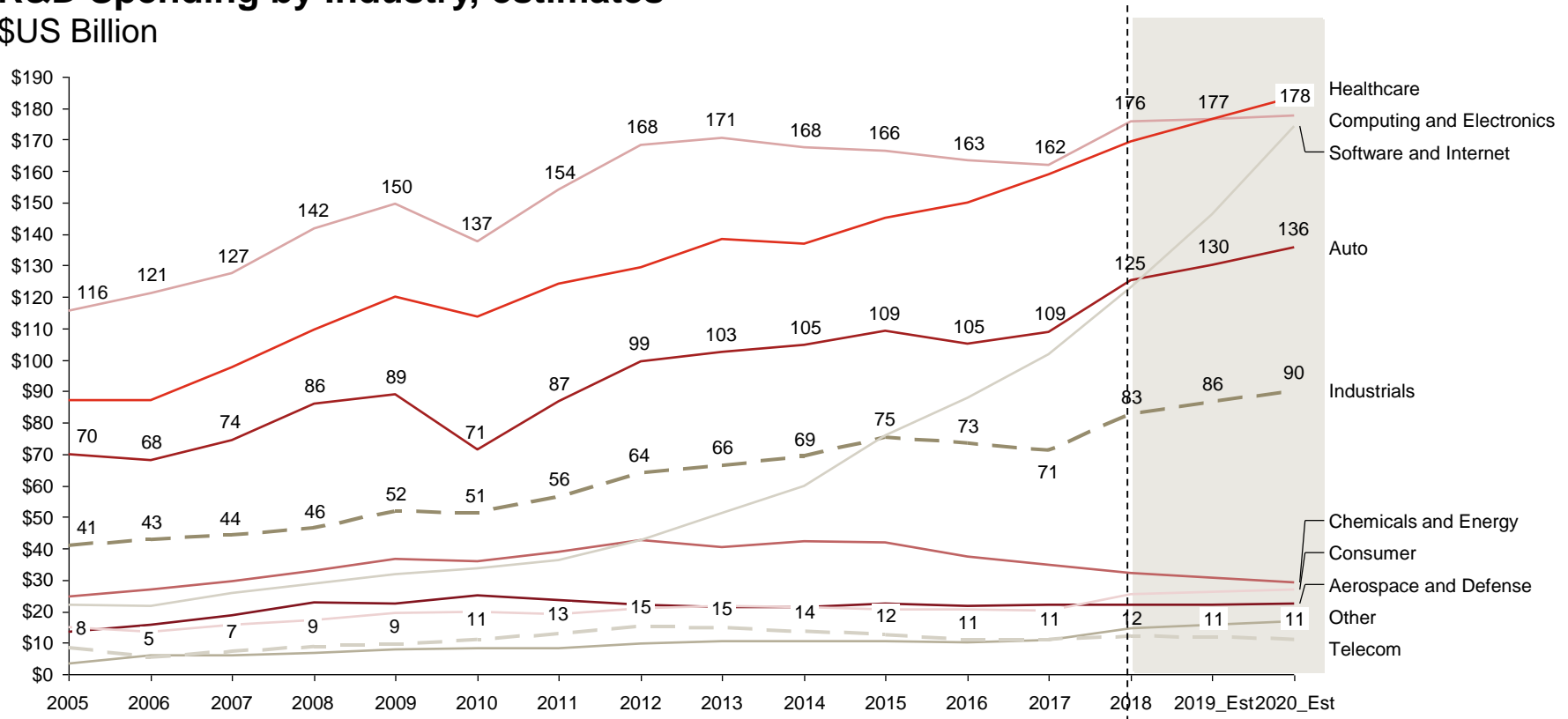
**R&D intensity (Total R&D expenditure/Total revenue) by Industry**  
2018



Source: 2018 Global Innovation 1000 Study, Bloomberg data, Capital IQ data, Thomson Reuters Eikon data

# By 2019, Healthcare will pass Computing & Electronics to become the largest R&D spending industry

## R&D Spending by Industry, estimates \$US Billion



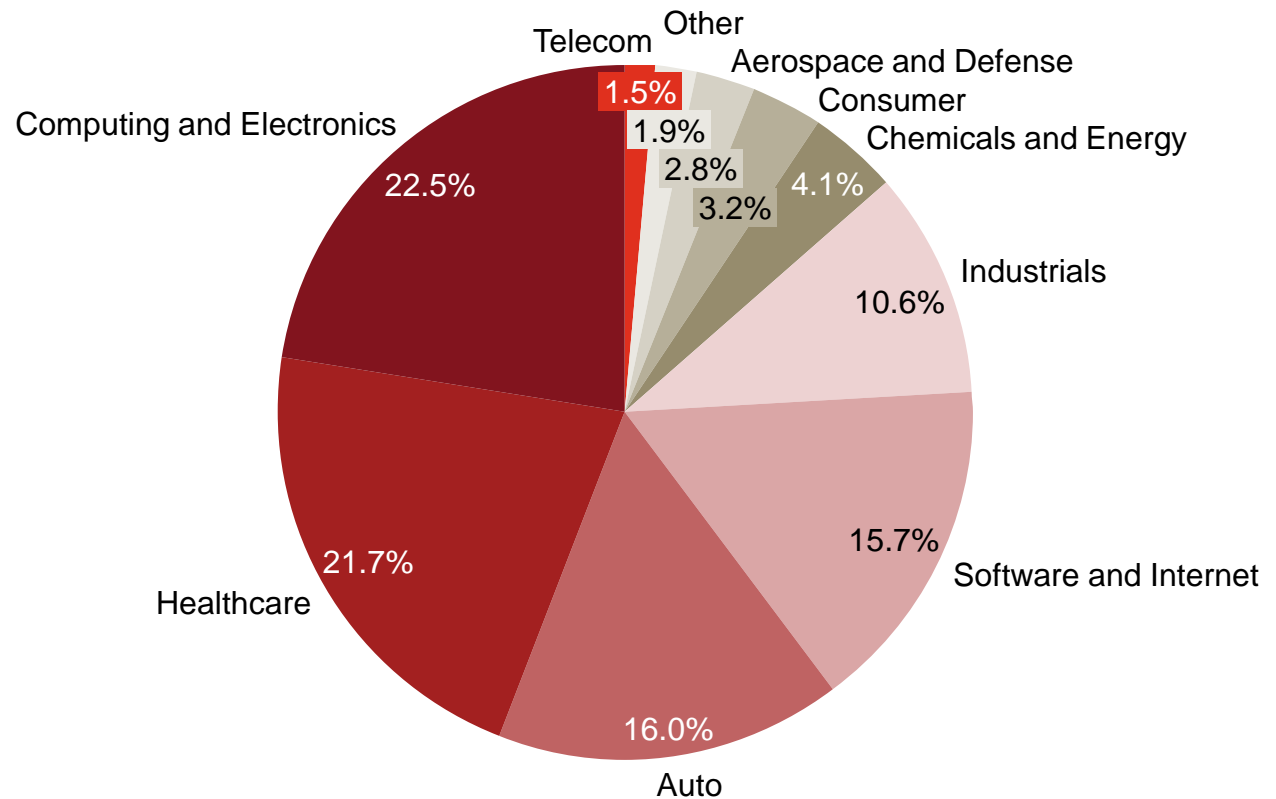
\* CAGR Value is calculated for last 5 years span from 2013 to 2018

Source: 2018 Global Innovation 1000 Study, Bloomberg data, Capital IQ data, Thomson Reuters Eikon data

# ***Computing & Electronics, Healthcare, and Auto represent 60% of all R&D spending in 2018, a slight contraction from 2017***

## **2018 R&D Spending by Industry**

Total = \$US 781.8 Billion

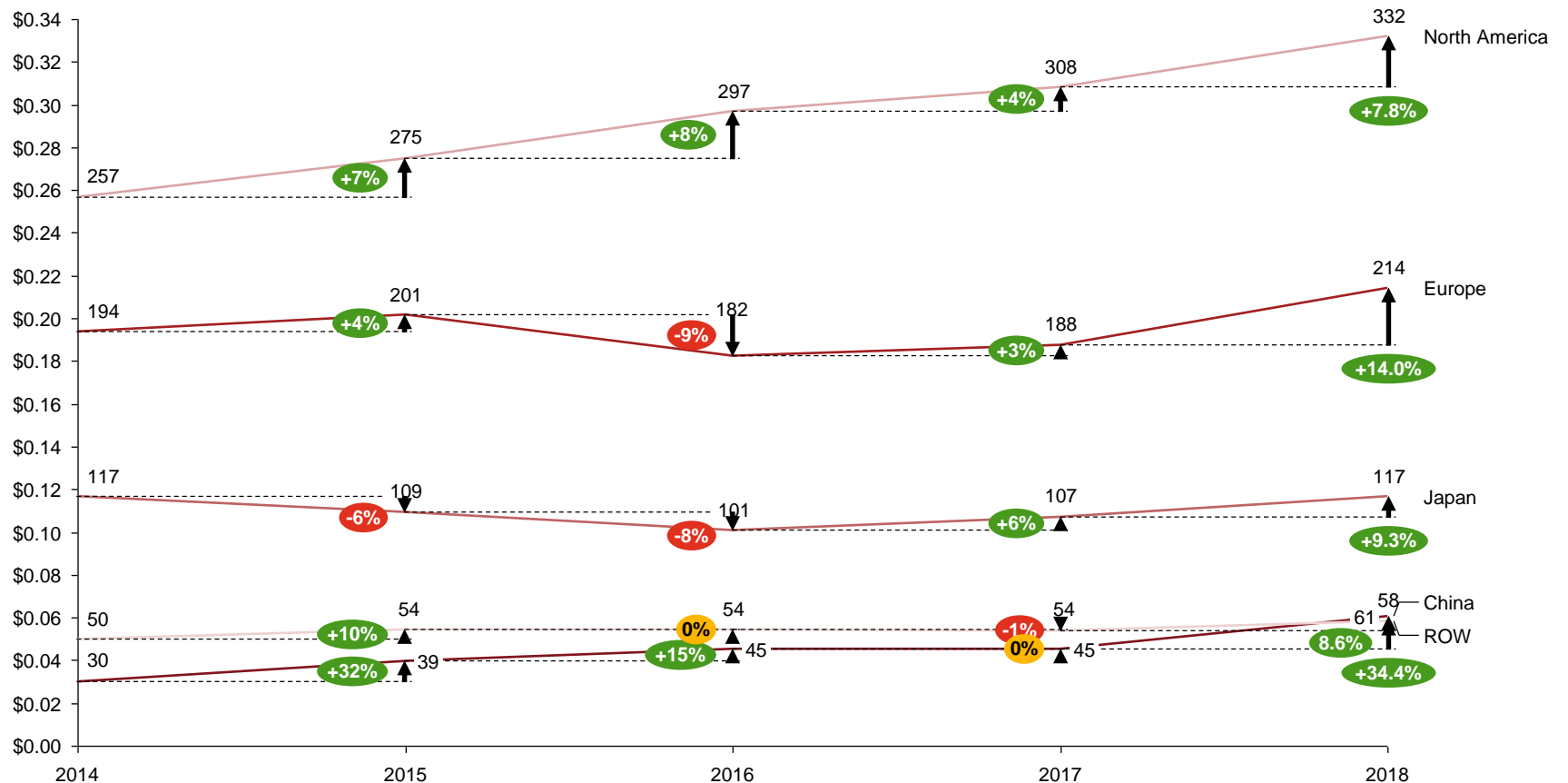


Source: 2018 Global Innovation 1000 Study, Capital IQ data, Thomson Reuters Eikon data

# Companies across all regions increased their R&D spending in 2018 with China and Europe showing the highest growth YoY

## R&D Spending by Region

2014–2018, \$US Billion

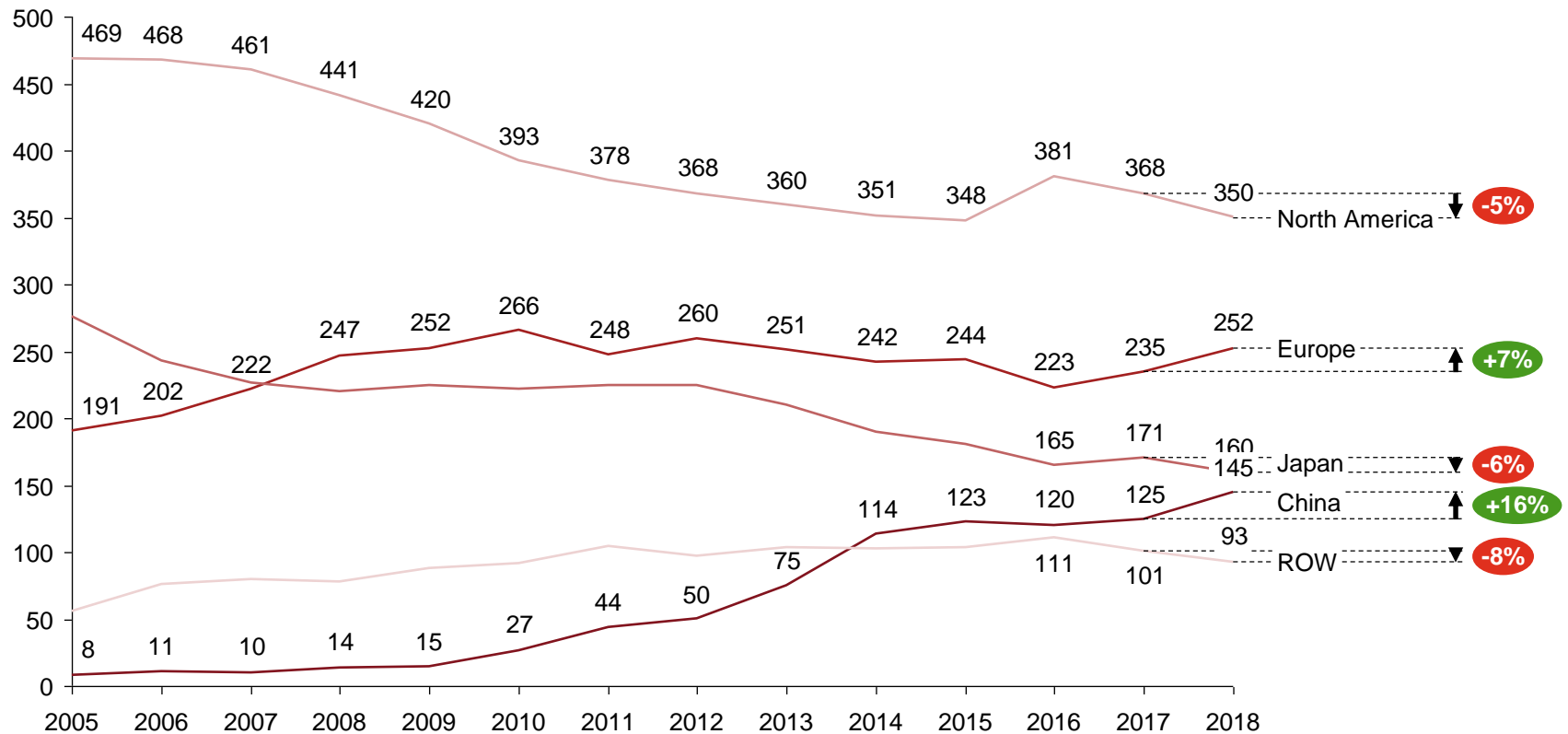


Source: 2018 Global Innovation 1000 Study, Bloomberg data, Capital IQ data, Thomson Reuters Eikon data

# China and Europe increased the number of companies in the Top 1,000, while the other three regions saw a decrease

## Number of Companies in the Top 1,000 by Region

2005–2018



Source: 2018 Global Innovation 1000 Study, Bloomberg data, Capital IQ data, Thomson Reuters Eikon data



# *This is the second consecutive year Amazon is largest R&D spender; Sanofi and Siemens rejoined the Top 20 Spenders*

## Top 20 R&D Spenders

Companies in **RED** have been among the top 20 R&D spenders every year since 2005

Rank in 2018	Rank in 2017	Change	Company	Geography	Industry	R&D spending (US\$ Billions)	R&D Intensity	Change from 2017
1	1	NA	Amazon.com, Inc.	North America	Software and Internet	22.6	12.7%	40.6%
2	2	NA	Alphabet Inc.	North America	Software and Internet	16.2	14.6%	16.3%
3	5	2	Volkswagen	Europe	Auto	15.8	5.7%	14.1%
4	4	NA	Samsung Electronics	ROW	Computing and Electronics	15.3	6.8%	6.8%
5	3	-2	Intel Corporation	North America	Computing and Electronics	13.1	20.9%	2.8%
6	6	NA	Microsoft Corporation	North America	Software and Internet	12.3	13.7%	-5.7%
7	9	2	Apple Inc.	North America	Computing and Electronics	11.6	5.1%	15.3%
8	7	-1	Roche Holding AG	Europe	Healthcare	10.8	18.9%	-8.7%
9	12	3	Johnson & Johnson	North America	Healthcare	10.6	13.8%	16.0%
10	8	-2	Merck & Co., Inc.	North America	Healthcare	10.2	25.4%	0.8%
11	11	NA	Toyota Motor Corporation	Japan	Auto	10.0	3.9%	2.6%
12	10	-2	Novartis AG	Europe	Healthcare	8.5	17.0%	-11.1%
13	15	2	Ford Motor Company	North America	Auto	8.0	5.1%	9.6%
14	20	6	Facebook, Inc.	North America	Software and Internet	7.8	19.1%	31.0%
15	14	-1	Pfizer Inc.	North America	Healthcare	7.7	14.6%	-2.7%
16	13	-3	General Motors Company	North America	Auto	7.3	5.0%	-9.9%
17	16	-1	Daimler AG	Europe	Auto	7.1	3.6%	-9.2%
18	19	1	Honda Motor Co., Ltd.	Japan	Auto	7.1	5.4%	8.7%
19	24	5	Sanofi	Europe	Healthcare	6.6	15.1%	5.8%
20	23	3	Siemens	Europe	Industrials	6.1	6.2%	4.9%
						214.5	11.6%	7.3%

Source: 2018 Global Innovation 1000 Study, Capital IQ data, Thomson Reuters Eikon data

# *Netflix made the top 10 most innovative companies list for the first time while Apple regained the #1 rank from Alphabet*

## 10 Most Innovative Companies

Rank	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	Apple	Apple	Apple	Apple	Apple	Apple	Apple	Alphabet	Apple
2	Google	Google	Google	Google	Google	Google	Alphabet*	Apple	Amazon
3	3M	3M	3M	Samsung	Amazon	Tesla	3M	Amazon	Alphabet
4	General Electric	General Electric	Samsung	Amazon	Samsung	Samsung	Tesla	Tesla	Microsoft
5	Toyota	Microsoft	General Electric	3M	Tesla	Amazon	Amazon	Microsoft	Tesla
6	Microsoft	IBM	Microsoft	General Electric	3M	3M	Samsung	Samsung	Samsung
7	Procter & Gamble	Samsung	Toyota	Microsoft	General Electric	General Electric	Facebook	General Electric	Facebook
8	IBM	Procter & Gamble	Procter & Gamble	IBM	Microsoft	Microsoft	Microsoft	Facebook	General Electric
9	Samsung	Toyota	IBM	Tesla	IBM	IBM	General Electric	IBM	Intel
10	Intel	Facebook	Amazon	Facebook	Procter & Gamble	Toyota	IBM	Alibaba	Netflix

Samsung is the only non US-firm and IBM was absent from the top 10 ranking for the first time this year

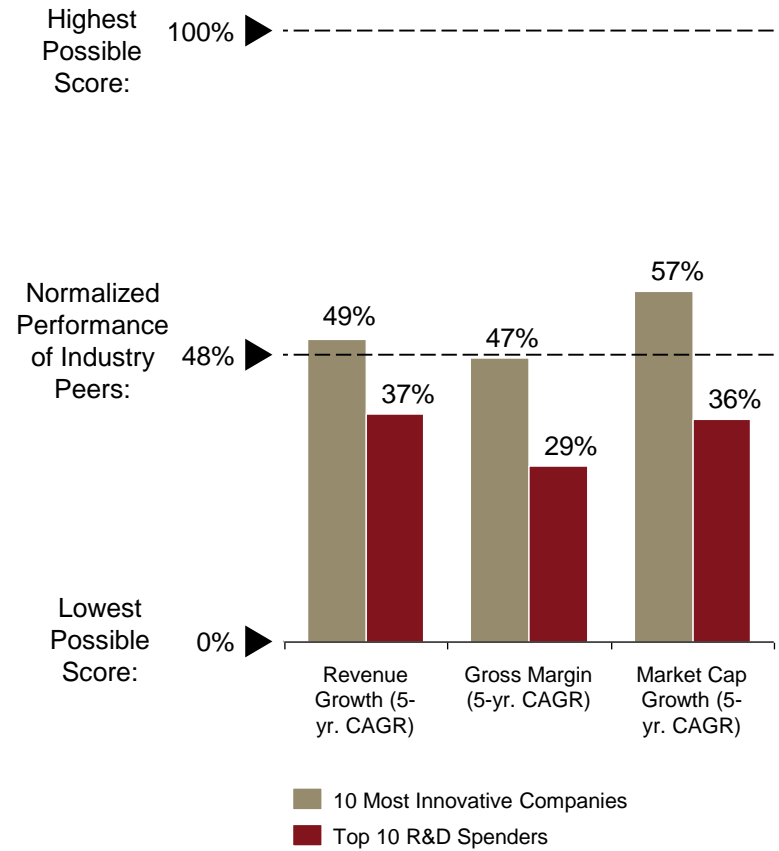
Source: 2018 Global Innovation 1000 Study

\* In 2015, Google announced a corporate restructuring forming an umbrella company called Alphabet

# Once again, the 10 Most Innovative Companies outperform the Top 10 R&D Spenders on a set of financial metrics

## 10 Most Innovative Companies vs. Top 10 R&D Spenders

Rank	10 Most Innovative Companies	2018 R&D spend (US\$ Bn)	R&D intensity	Top 10 R&D Spenders	2018 R&D spend (US\$ Bn)	R&D intensity
1	Apple Inc.	11.6	5.1%	Amazon.com, Inc.	22.6	12.7%
2	Amazon.com, Inc.	22.6	12.7%	Alphabet Inc.	16.2	14.6%
3	Alphabet Inc.	16.2	14.6%	Volkswagen Aktiengesellschaft	15.8	5.7%
4	Microsoft Corporation	12.3	13.7%	Samsung Electronics Co., Ltd.	15.3	6.8%
5	Tesla, Inc.	1.4	11.7%	Intel Corporation	13.1	20.9%
6	Samsung Electronics Co., Ltd.	15.3	6.8%	Microsoft Corporation	12.3	13.7%
7	Facebook, Inc.	7.8	19.1%	Apple Inc.	11.6	5.1%
8	General Electric Company	4.8	4.0%	Roche Holding AG	10.8	18.9%
9	Intel Corporation	13.1	20.9%	Johnson & Johnson	10.6	13.8%
10	Netflix, Inc.	1.1	9.0%	Merck & Co., Inc.	10.2	25.4%



Source: 2018 Global Innovation 1000 Study, Capital IQ data, Thomson Reuters Eikon data

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**For the complete study and more  
information on the annual  
Strategy& Global Innovation 1000 study**

**Please visit:**

**<http://www.strategyand.pwc.com/innovation1000>**

***For media or other inquiries, please contact:***

***Rowena Mearley  
+ 44 7730 598 643  
rowena.mearley@pwc.com***

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