

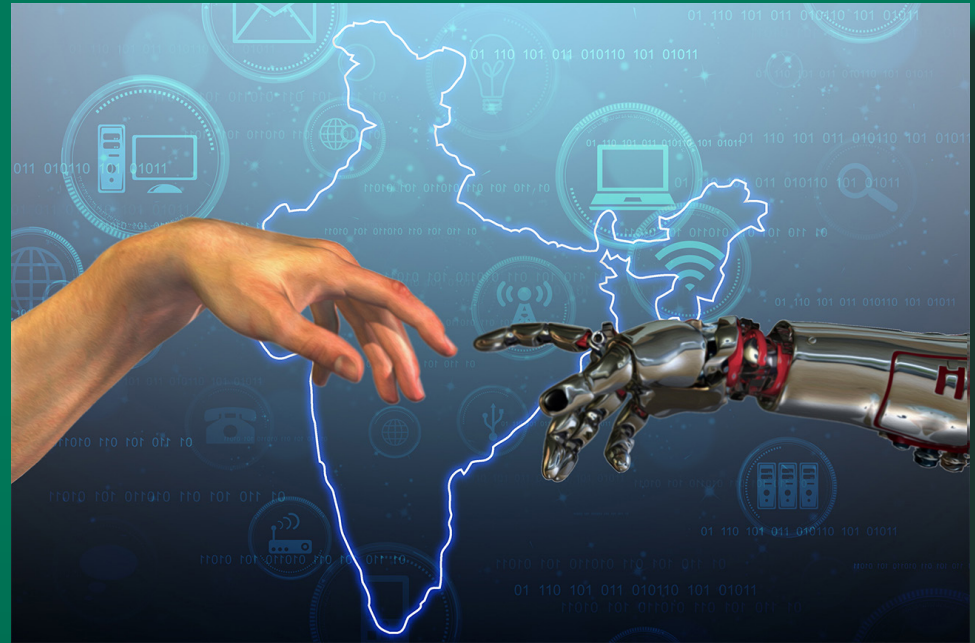
CII 15TH MANUFACTURING SUMMIT 2016

NEXT GENERATION MANUFACTURING

WINNING THROUGH TECHNOLOGY
& INNOVATION

ADDENDUM TO
THE BACKGROUND NOTE

NOVEMBER 2016



BCG

THE BOSTON CONSULTING GROUP



Confederation of Indian Industry

The Boston Consulting Group (BCG) is a global management consulting firm and the world's leading advisor on business strategy. We partner with clients from the private, public, and not-for-profit sectors in all regions to identify their highest-value opportunities, address their most critical challenges, and transform their enterprises. Our customized approach combines deep insight into the dynamics of companies and markets with close collaboration at all levels of the client organization. This ensures that our clients achieve sustainable competitive advantage, build more capable organizations, and secure lasting results. Founded in 1963, BCG is a private company with 85 offices in 48 countries. For more information, please visit bcg.com.



The Confederation of Indian Industry (CII) works to create and sustain an environment conducive to the development of India, partnering industry, Government, and civil society, through advisory and consultative processes.

CII is a non-government, not-for-profit, industry-led and industry-managed organization, playing a proactive role in India's development process. Founded in 1895, India's premier business association has over 7400 members, from the private as well as public sectors, including SMEs and MNCs, and an indirect membership of over 100,000 enterprises from around 250 national and regional sectoral industry bodies. In its 120th year of service to the nation, the CII theme of 'Build India – Invest in Development, A Shared responsibility', reiterates Industry's role as a partner in national development.

With 64 offices, including 9 Centres of Excellence, in India, and 7 overseas offices in Australia, China, Egypt, France, Singapore, UK, and USA, as well as institutional partnerships with 300 counterpart organizations in 106 countries, CII serves as a reference point for Indian industry and the international business community.

Note to the Reader

The CII-BCG Manufacturing Leadership Survey 2016 was launched to gauge the pulse of the industry leaders on current scenario and future prospects for the Indian manufacturing sector. The survey was hosted online and sent through email to top management of CII member companies in the manufacturing sector.

The survey results, compiled from 70 responses, have been selectively incorporated in the background note for the summit. We would like to thank all the respondents to the survey for their valuable inputs.

The following pages contain summarized responses for select questions in the survey. The results have been compiled from the survey responses received and do not necessarily reflect BCG's view on the subject.

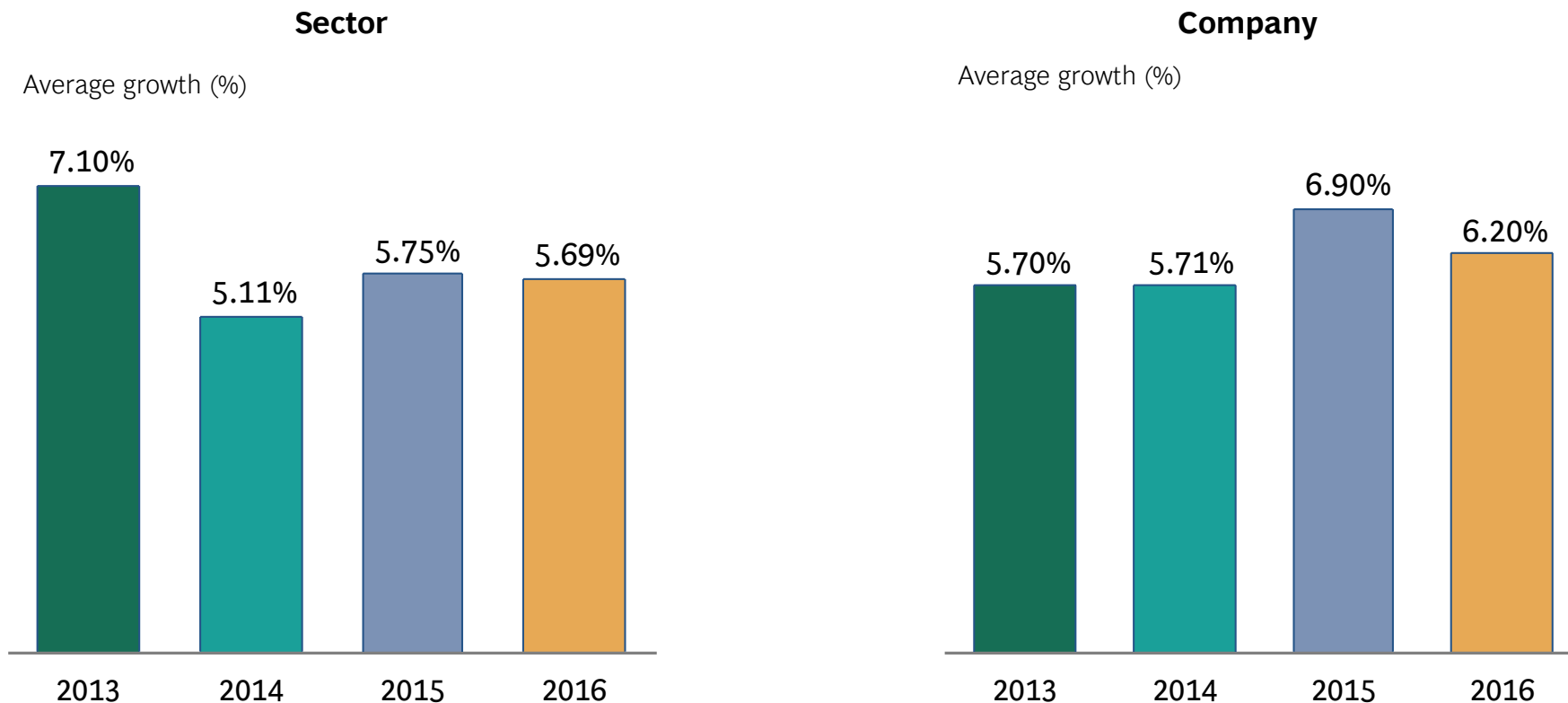
Company and Sector performance

Make in India

Industry 4.0

Companies and sectors have witnessed slower growth this year than the year before

What was the growth of your sector and company for the last year?



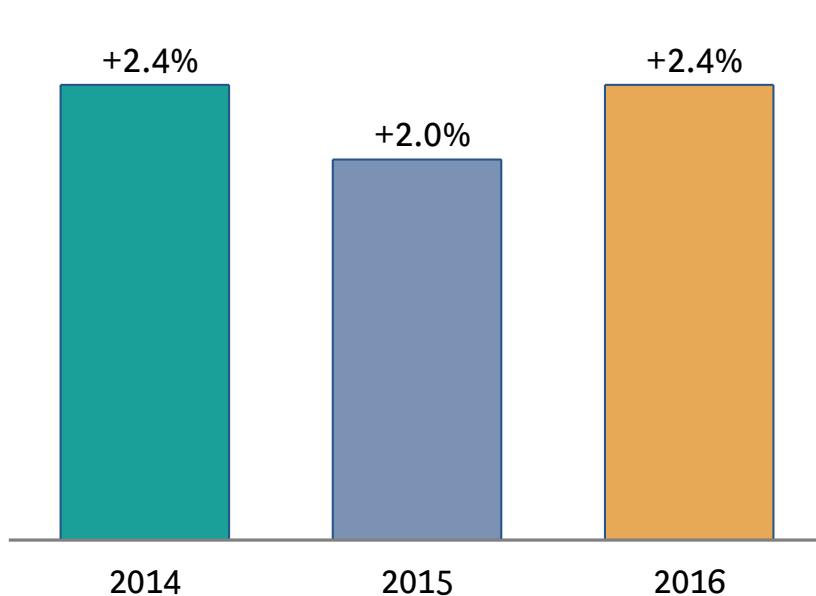
Sources: CII-BCG Manufacturing Leadership Survey 2013, 2014, 2015 and 2016.

Higher growth expected over next five years than the previous five years, more optimism than last year

Do you see stronger growth over the next five years compared to the last five years?

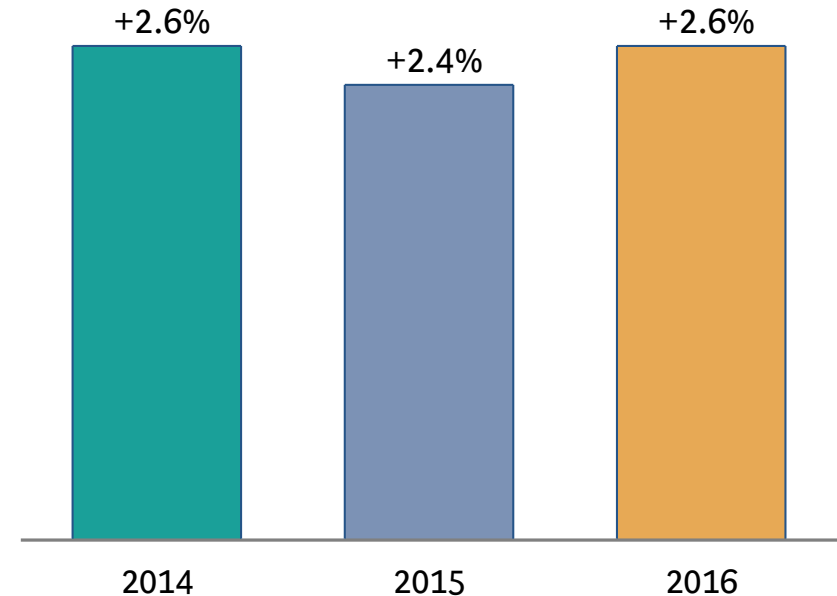
For your sector?

Expected increase in growth (%)
over the next 5 years



For your company?

Expected increase in growth (%)
over the next 5 years

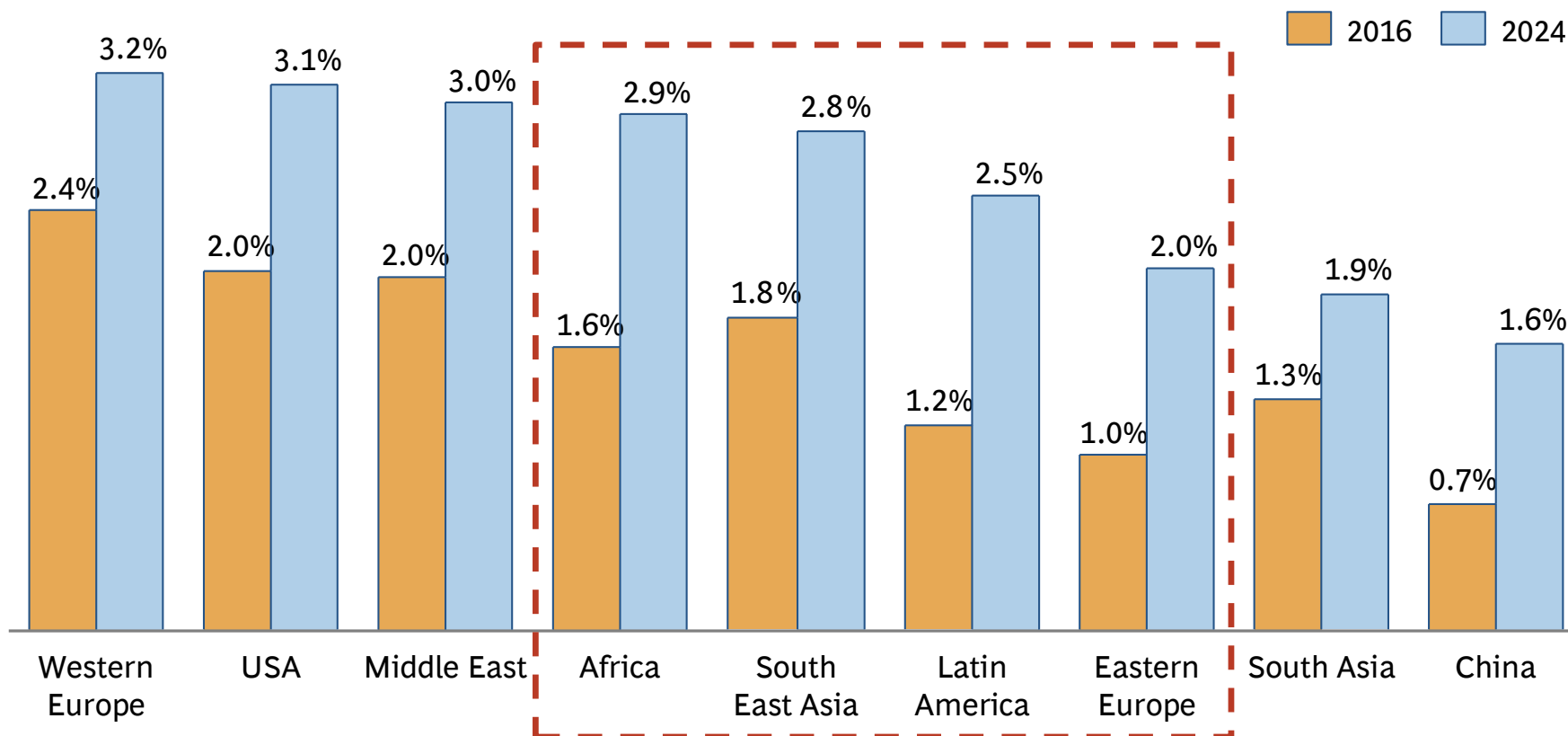


Sources: CII-BCG Manufacturing Leadership Survey 2014, 2015 and 2016.

Companies aspire to increase contribution of exports, especially to developing economies

What is your share of revenue coming from the following geographies? (Current Vs Aspiration for 2024)

Average share of revenue (%)

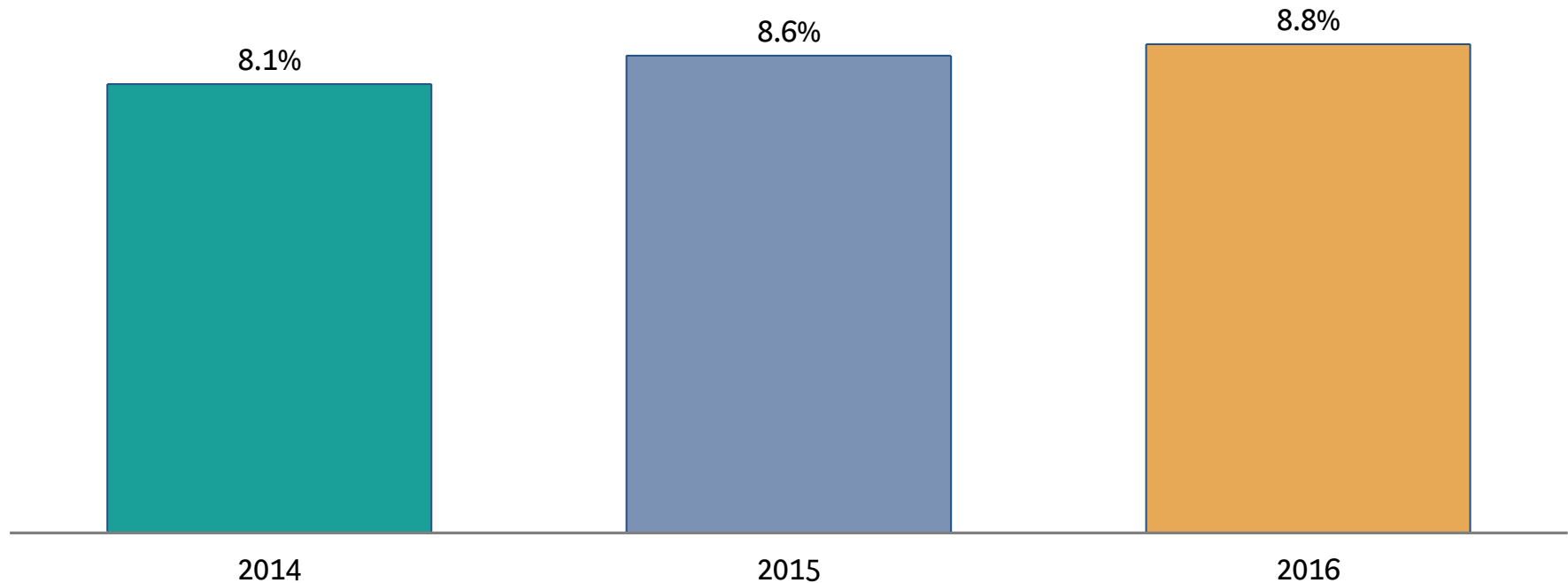


Sources: CII-BCG Manufacturing Leadership Survey 2016.

Expectations of growth in manufacturing for the next five years remain high

Given the recent announcements and the Government's intent to drive manufacturing growth, how do you see the manufacturing sector's growth in India over the next five years?

Growth expected over the next five years

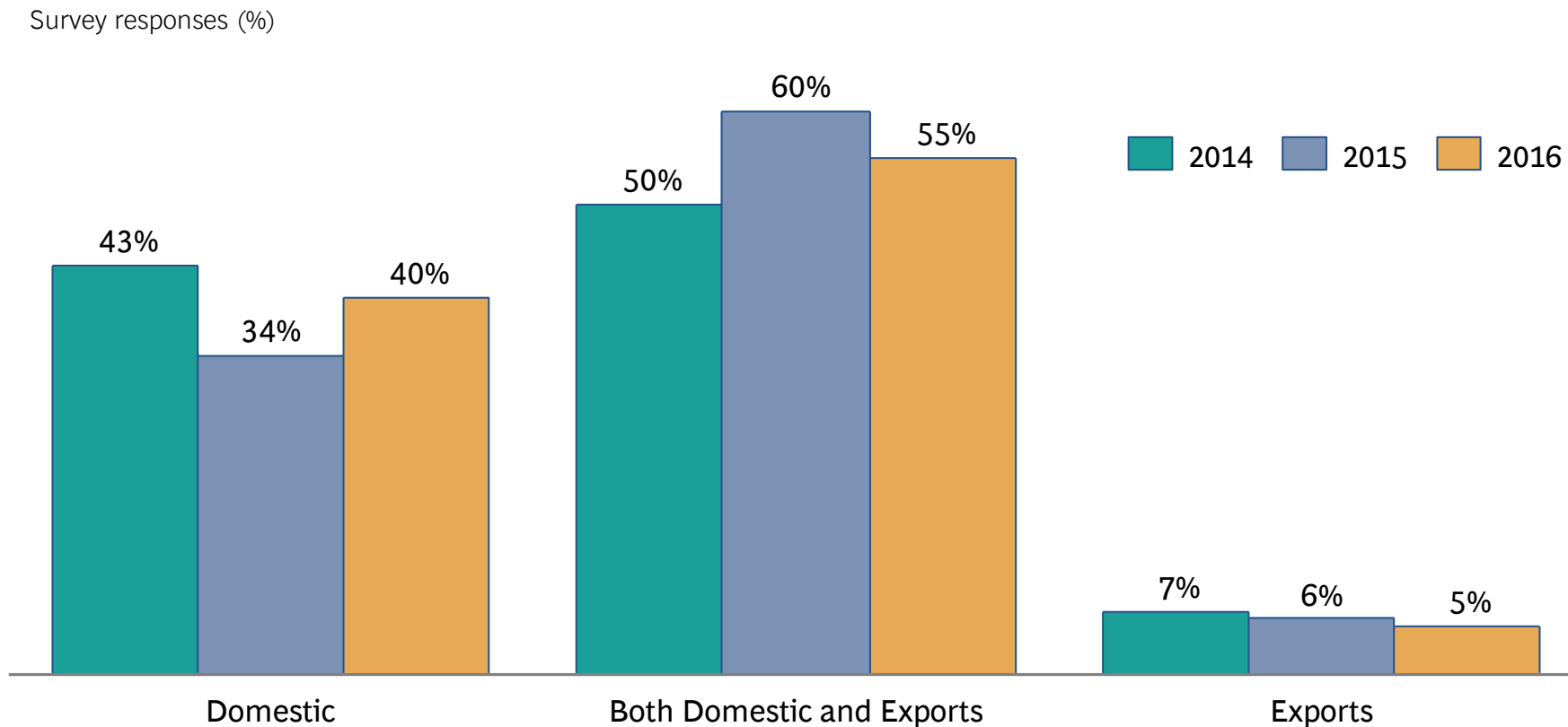


Sources: CII-BCG Manufacturing Leadership Survey 2014, 2015 and 2016.

Note: Average of growth expected by the respondents.

Both domestic demand and exports jointly expected to drive manufacturing growth; however, higher optimism from domestic demand







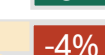















What would be the key demand-side driver for manufacturing growth in India for the next five years?



Sources: CII-BCG Manufacturing Leadership Survey 2014, 2015 and 2016.

Infrastructure and implementation of policies are seen as challenges to growth

What do you foresee as the biggest challenge for manufacturing growth in India over the next five years? (Top three)

Concern	2014		2015		2016	
	Rank	Survey responses (in %)	Rank	Survey responses (in %)	Rank	Survey responses (in %)
Infrastructural constraints	1	17	2	19 	1	22 
Instability of bureaucracy to implement industry-friendly policies appropriately	2	16	1	25 	2	15 
Lack of translation of PM/ central vision into the right policies	3	12	3	15 	3	14 
High cost of capital	4	12	4	8 	4	11 
Low/ no innovation	6	7	6	7 	5	9 
Unstable polity	5	9	7	6 	6	8 
Rising labor costs	7	7	9	4 	7	7 
Currency fluctuations	8	7	8	4 	8	4 
Demand slowdown	9	7	5	7 	9	4 
Manufacturing over capacity	10	4	11	2 	10	4 
Others	11	2	10	3 	11	2 

Sources: CII-BCG Manufacturing Leadership Survey 2014, 2015 and 2016.

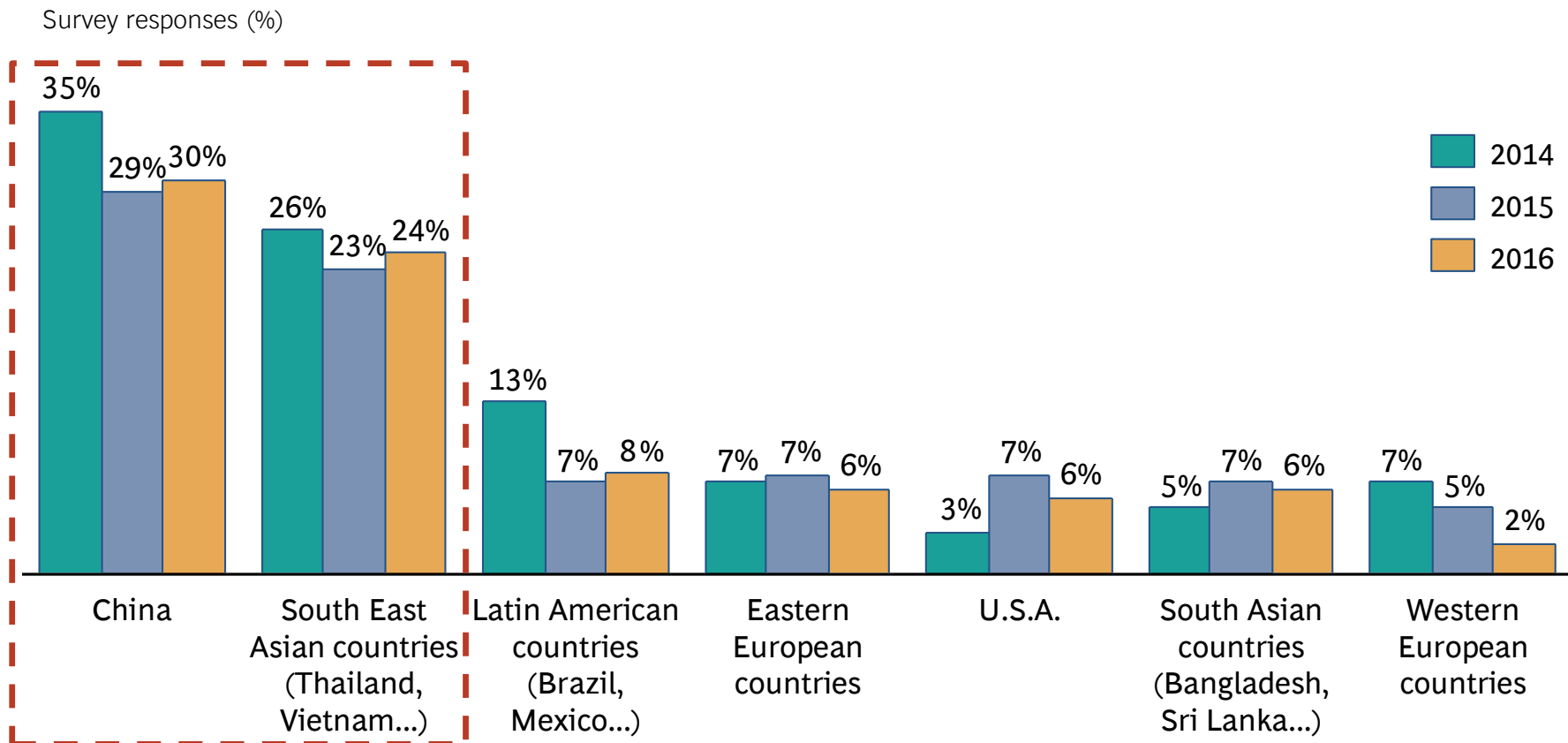
Note: Percentage of responses identifying the concern to be one among the top three concerns.



change over survey results from previous year

China and South East Asian countries continue to be seen as key threats in export markets

Which countries will be our biggest competitors in the export markets, between now and 2020? (select top three)

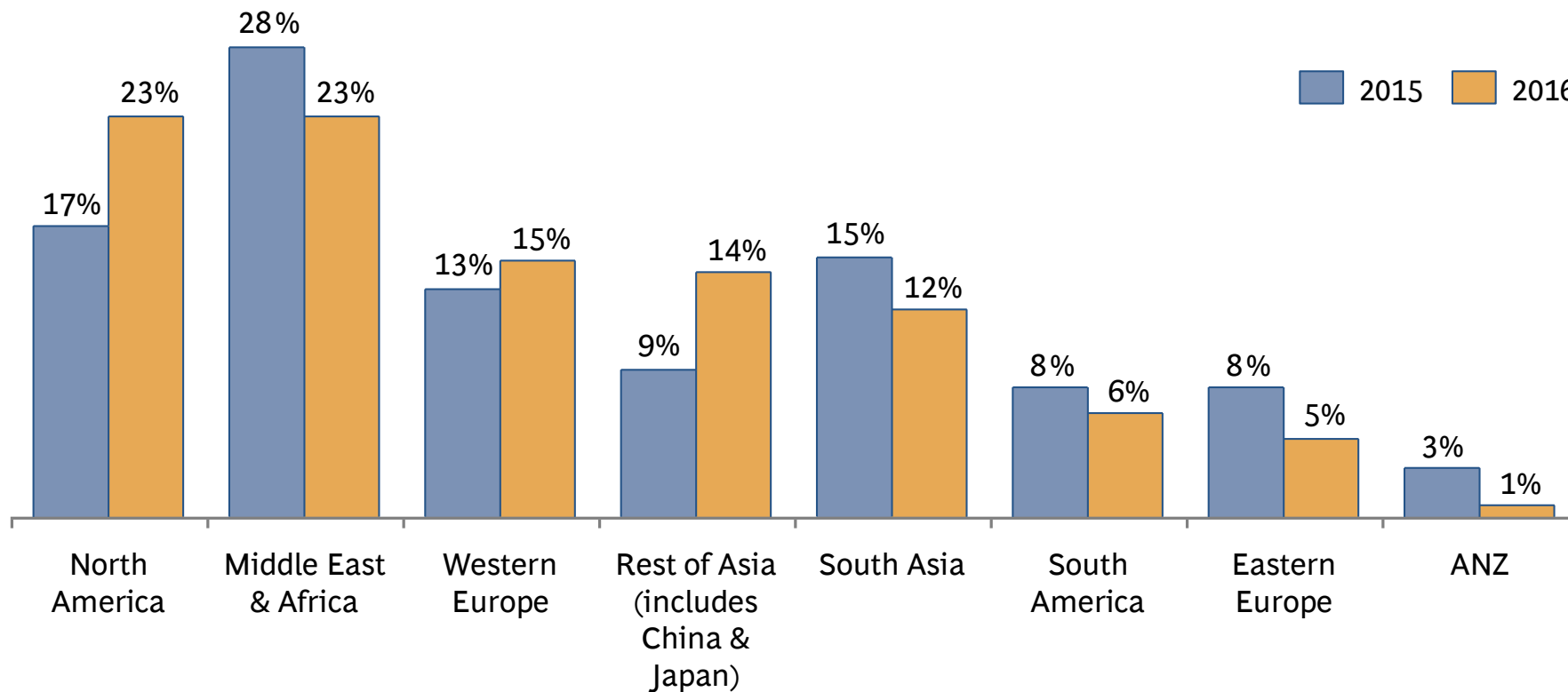


Sources: CII-BCG Manufacturing Leadership Survey 2014, 2015 and 2016.

North America, Middle East and Western Europe seen as key geographies to drive exports

What are the key geographies to drive exports in, over the next five years (select top two)?

Survey responses (%)



Source: CII-BCG Manufacturing Leadership Survey 2015, 2016.

Note: Identified as either top one or top two.

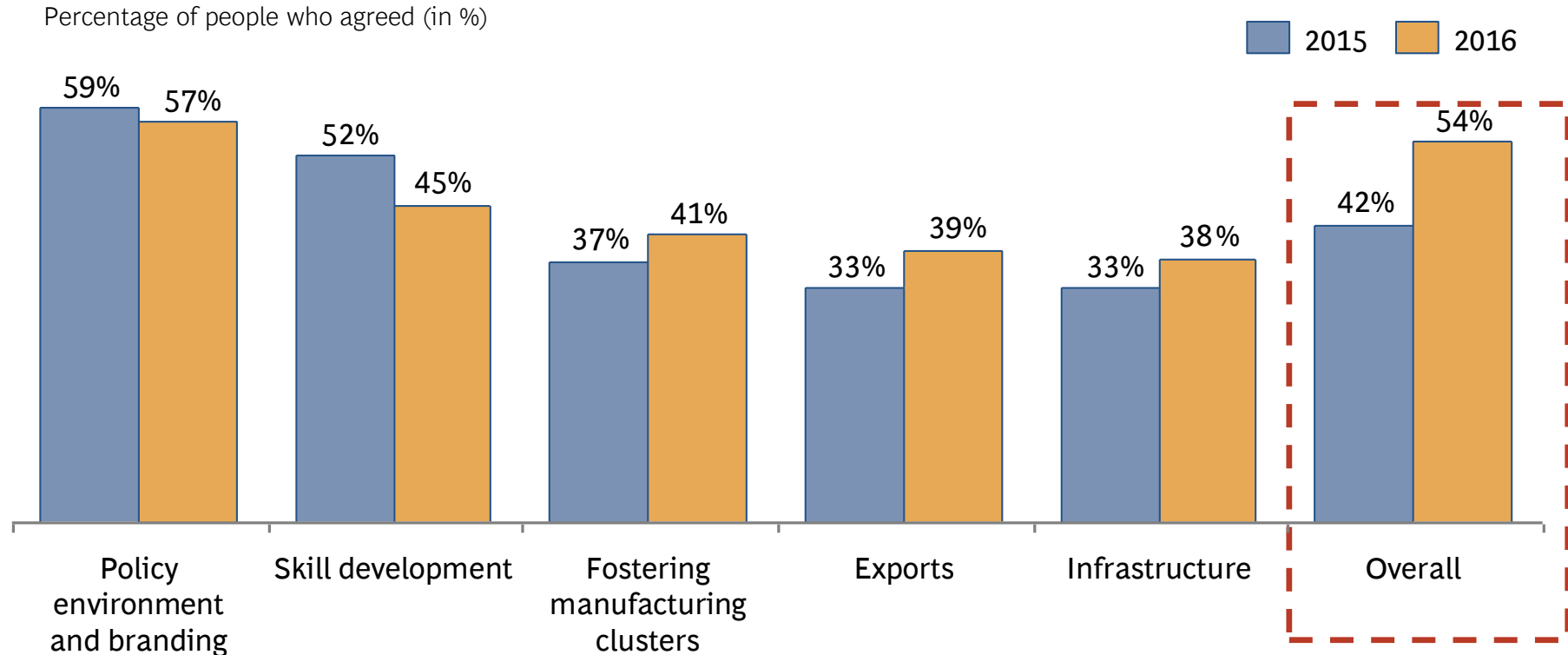
Company and Sector performance

Make in India

Industry 4.0

Over half of the respondents believe that the government drive to improve manufacturing has been effective

Government's drive to improve manufacturing sector has been effective

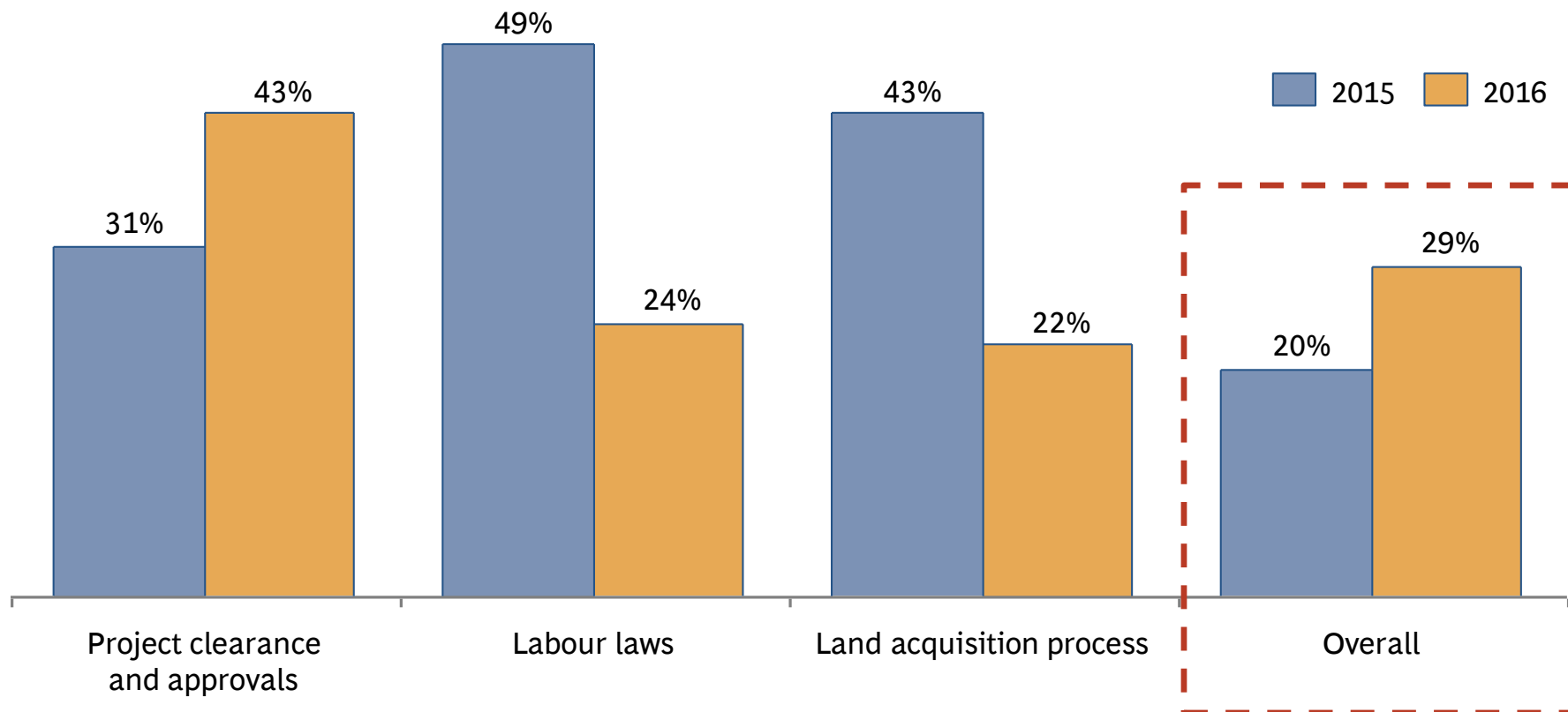


Source: CII-BCG Manufacturing Leadership Survey 2015, 2016.

Close to 30 percent respondents feel that the Ease of doing business has improved

Has 'Ease of doing business' improved in your industry, state?

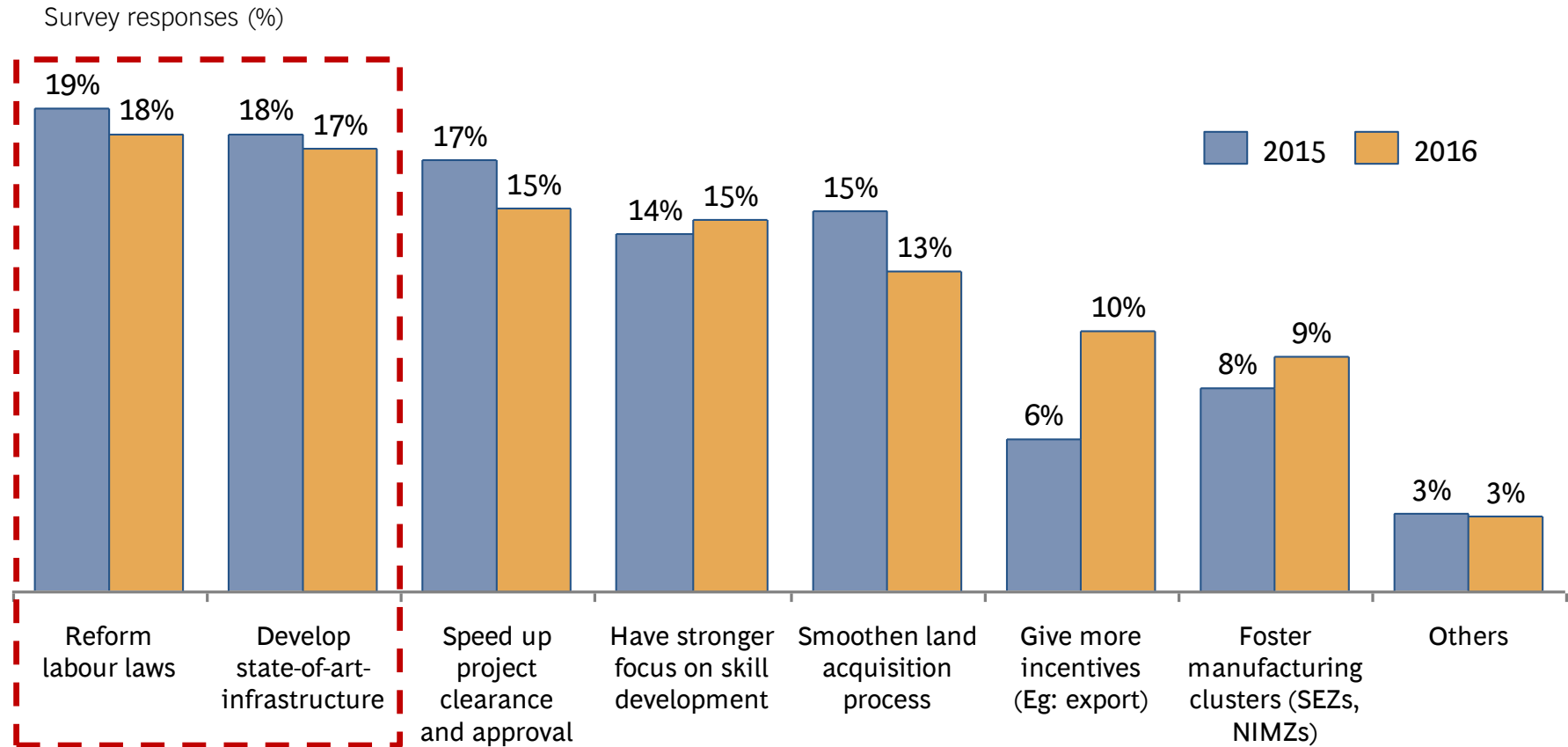
Percentage of people who agreed (in %)



Source: CII-BCG Manufacturing Leadership Survey 2015, 2016.

Labor law reform and infrastructure continue to be the top two issues that the industry wants the government to focus more on

What more should the government do to drive growth in the manufacturing sector?

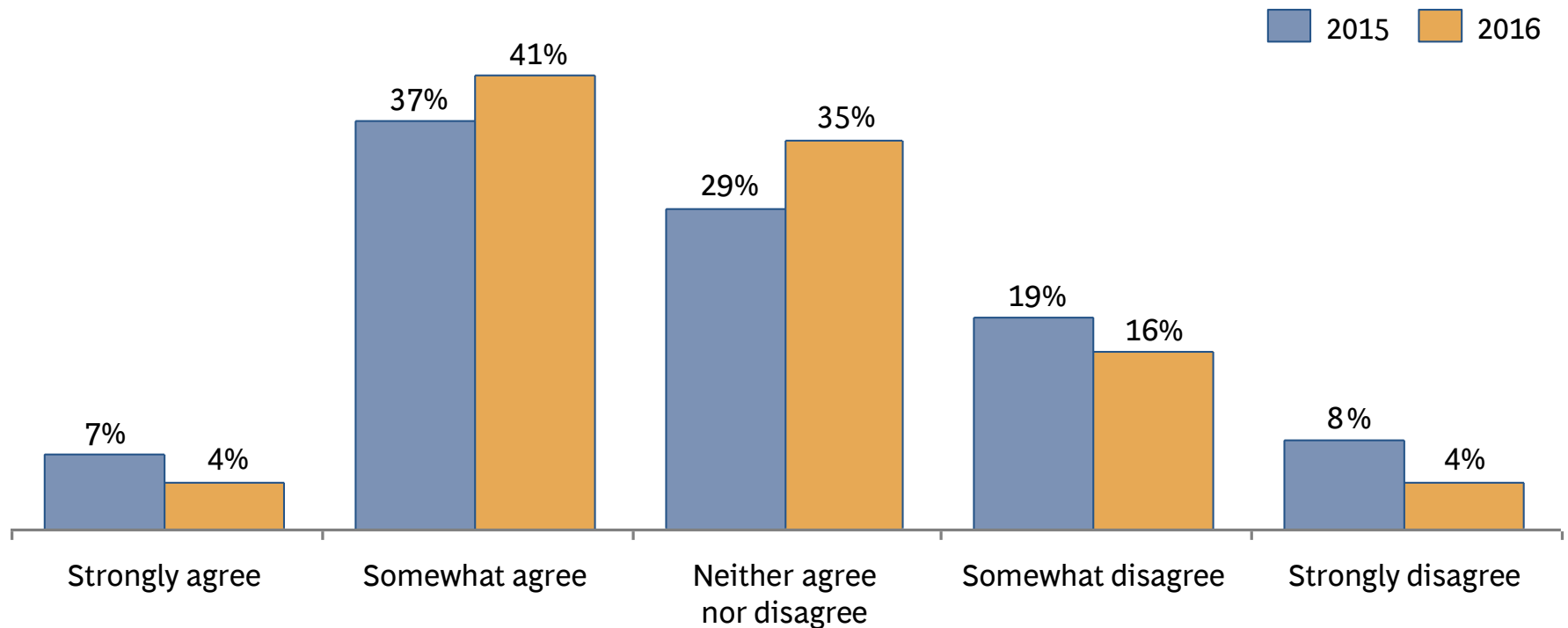


Source: CII-BCG Manufacturing Leadership Survey 2015, 2016.

About 45 percent executives surveyed think Make-in-India has been closer to reality in 2016 as compared to 2015

Has Make in India become closer to reality as compared to the previous year?

Survey responses (%)



Source: CII-BCG Manufacturing Leadership Survey 2015, 2016.

Company and Sector performance

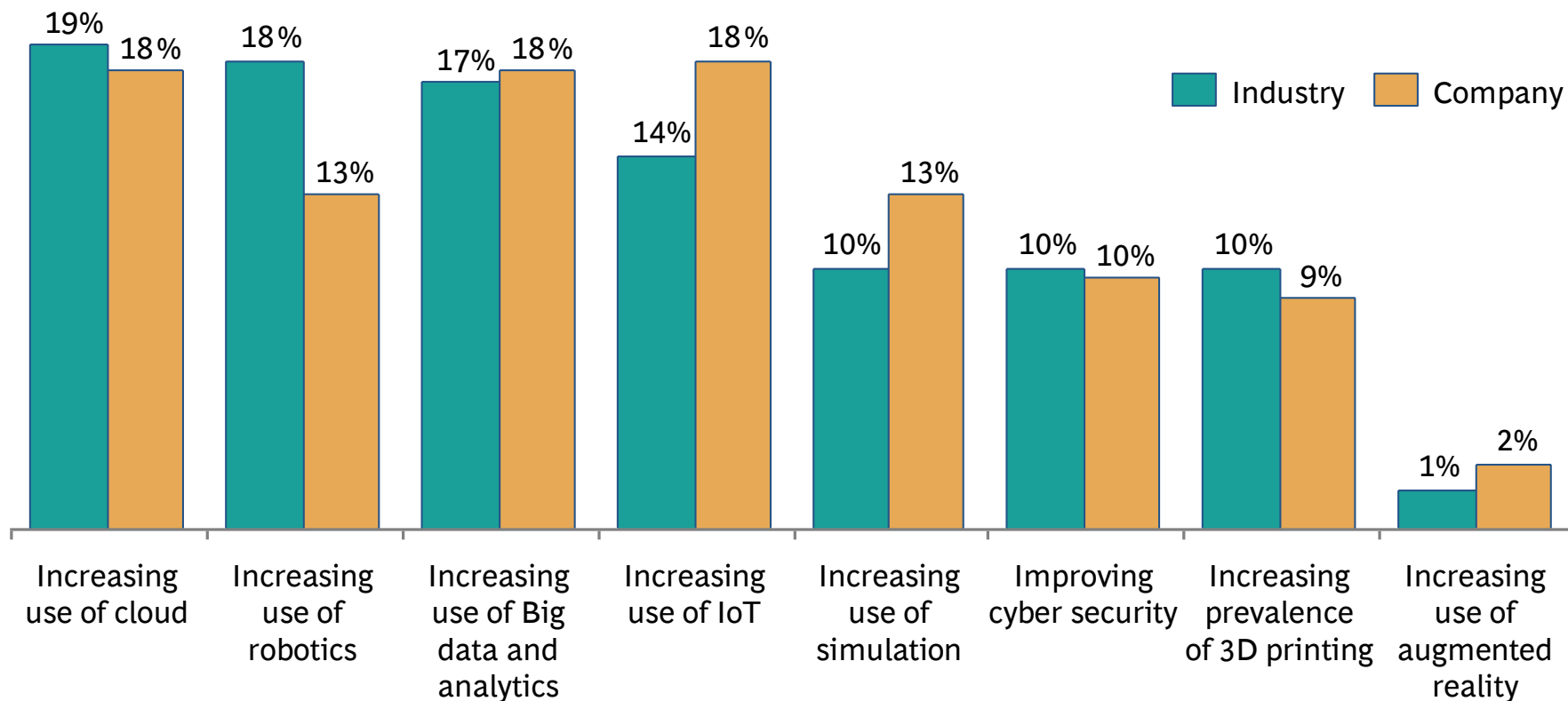
Make in India

Industry 4.0

Cloud, robotics and big data believed to be exerting greater influence on the industry and ~50% of companies have adopted Big data, IoT and cloud services

Which of the trends below have seen increasing impact in your industry/company over the last 2 years?

Survey responses (%)

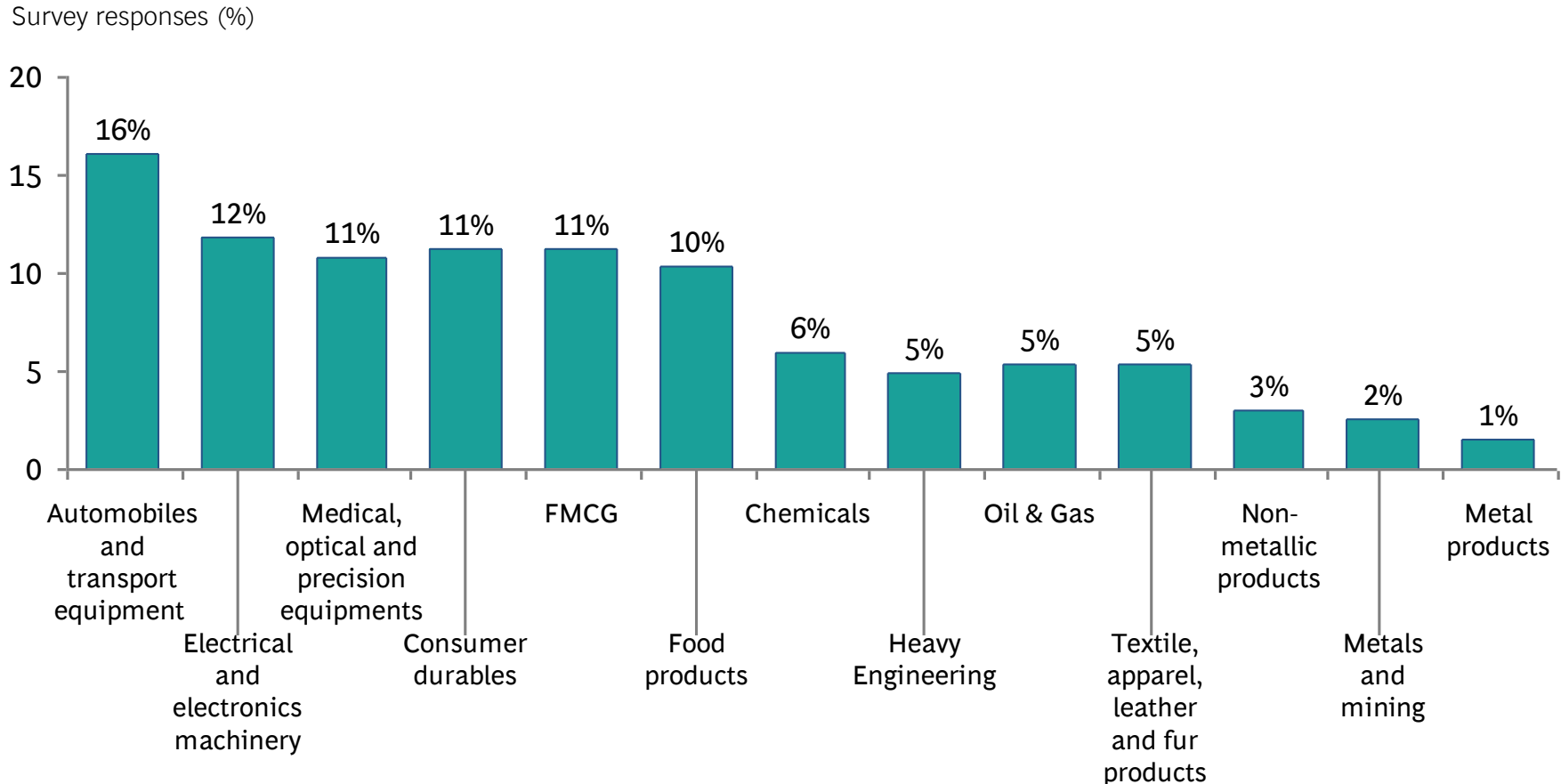


Source: CII-BCG Manufacturing Leadership Survey 2016.

Note: Identified as either top 1 or top 2 reasons.

Automobile industry seen as the industry with highest potential in making Industry 4.0 advancements

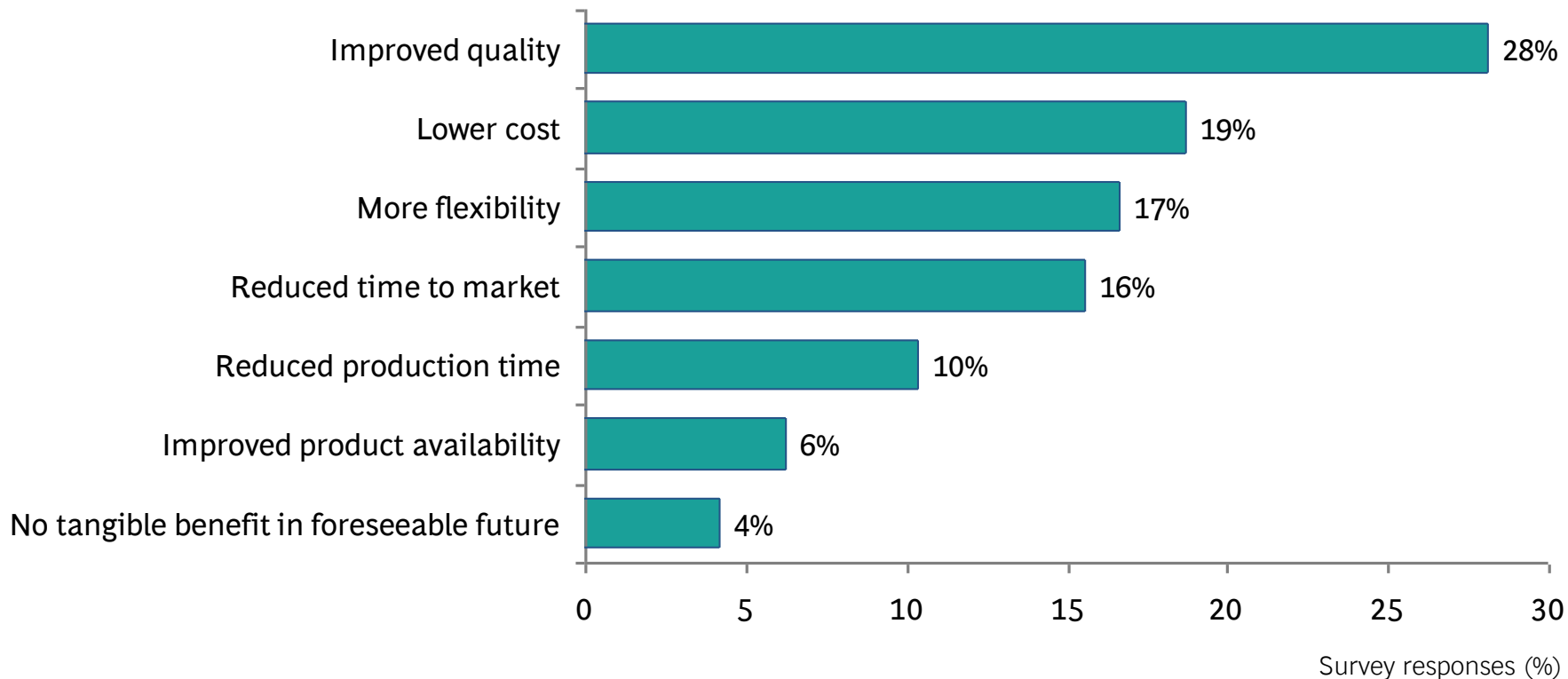
Which industry sector do you think possesses highest potential in making Industry 4.0 advancements?



Source: CII-BCG Manufacturing Leadership Survey 2016.

Improved quality is the primary benefit people see from Industry 4.0, a marked change from just assessing it as a cost benefit

What are the benefits you see coming out of Industry 4.0 advancement?

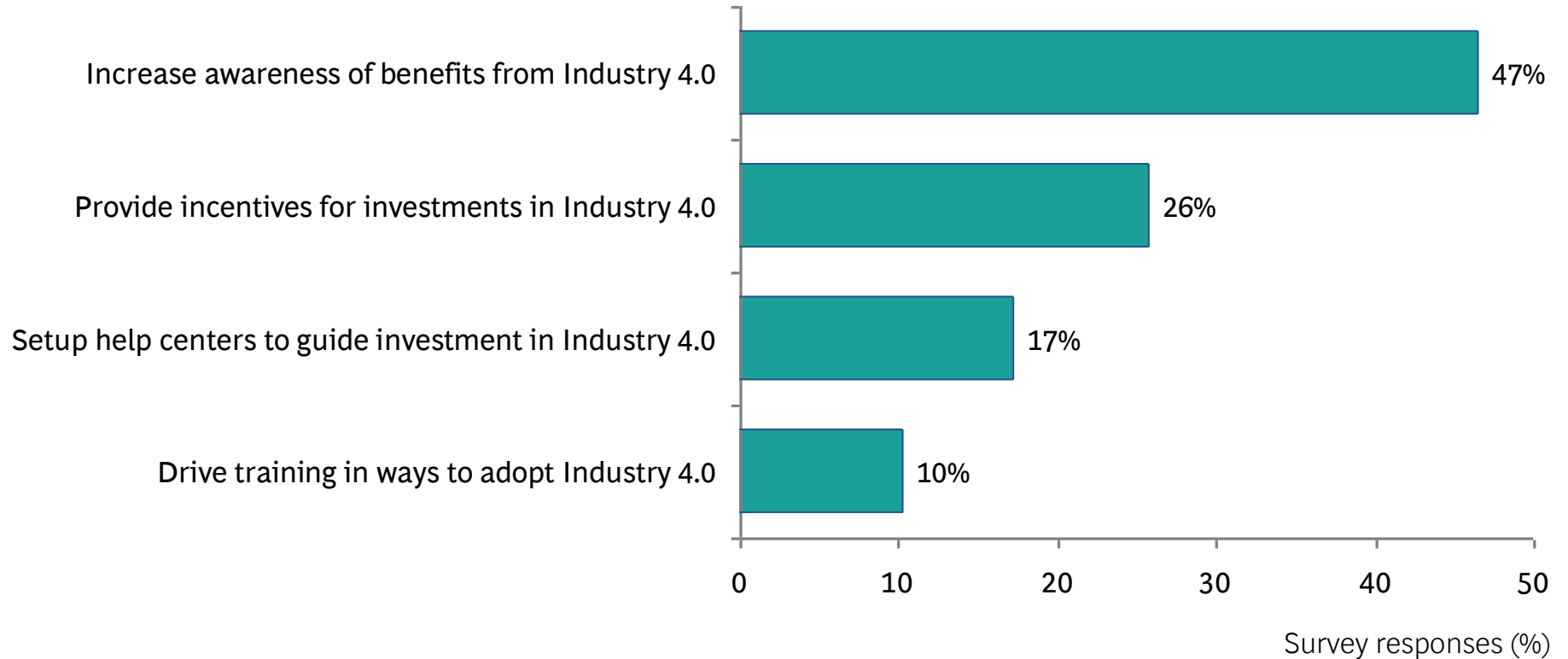


Source: CII-BCG Manufacturing Leadership Survey 2016.

Note: Identified as either top 1 or top 2 reasons.

Industry seeks awareness and guidance, not incentives to adopt Industry 4.0

What can the government do to drive adoption of technology and other Industry 4.0 trends?

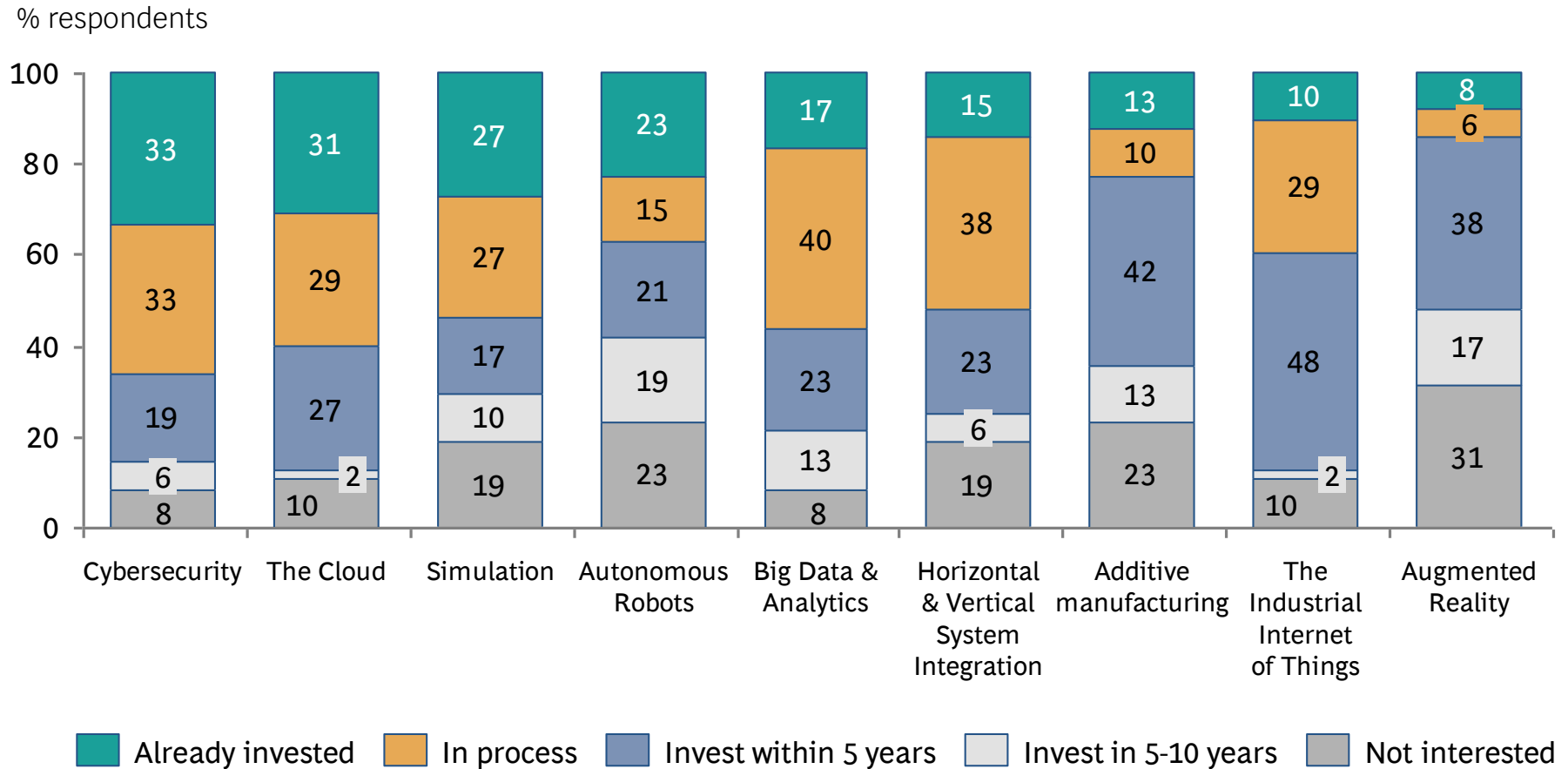


Source: CII-BCG Manufacturing Leadership Survey 2016.

Note: Identified as either top 1 or top 2 reasons.

Big data, cyber security, simulation and cloud are the pillars more than half the respondents have already invested in; Robots to take 5-10 years to reach similar levels

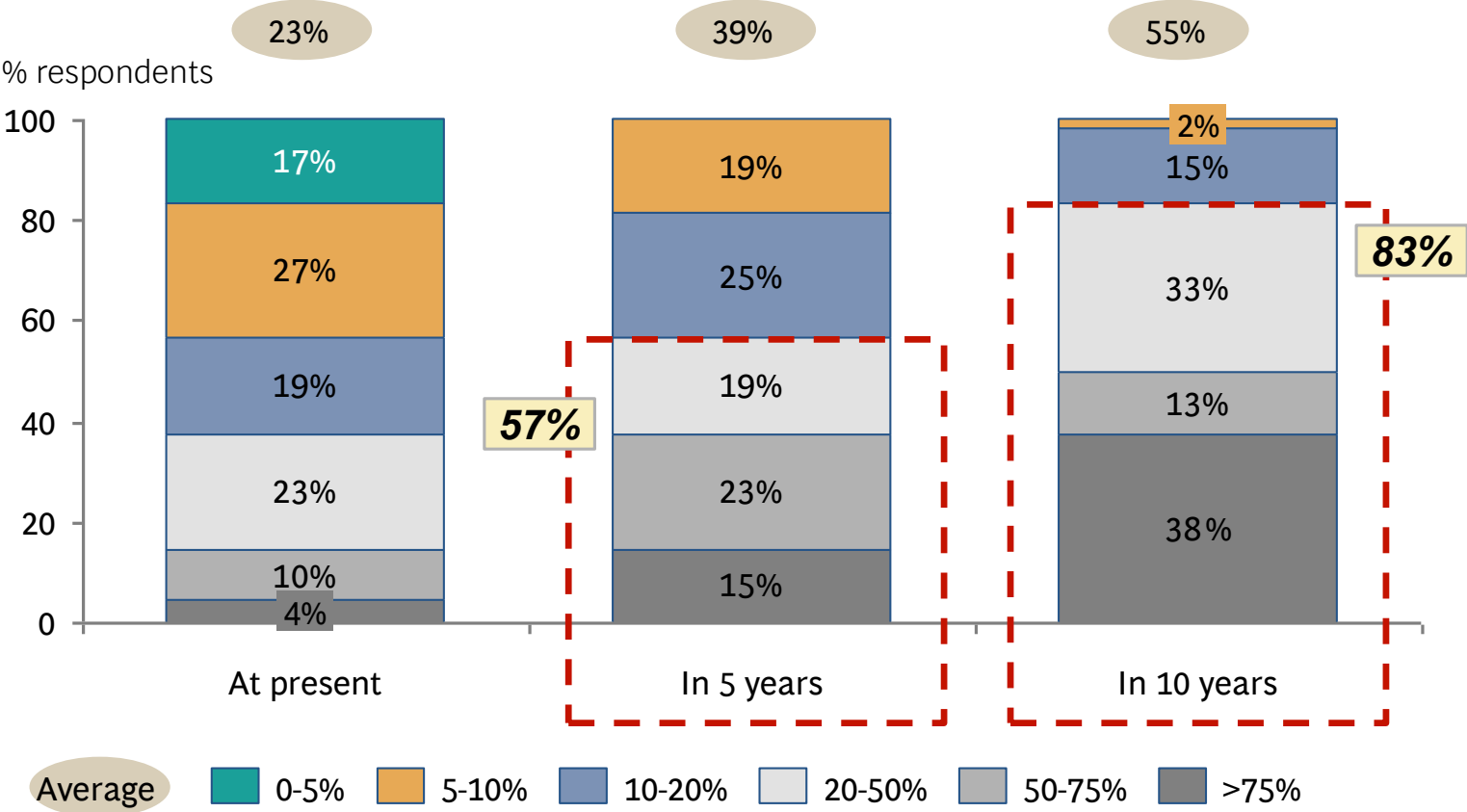
What is your strategy in investing in the following pillars of technical advancement in Industry 4.0?



Source: CII-BCG Manufacturing Leadership Survey 2016.

Respondents expect rapid increase in process automation over next 10 years

4.8. What percentage of your processes are currently automated and is expected to be automated in 5 and 10 years?



Source: CII-BCG Manufacturing Leadership Survey 2016.

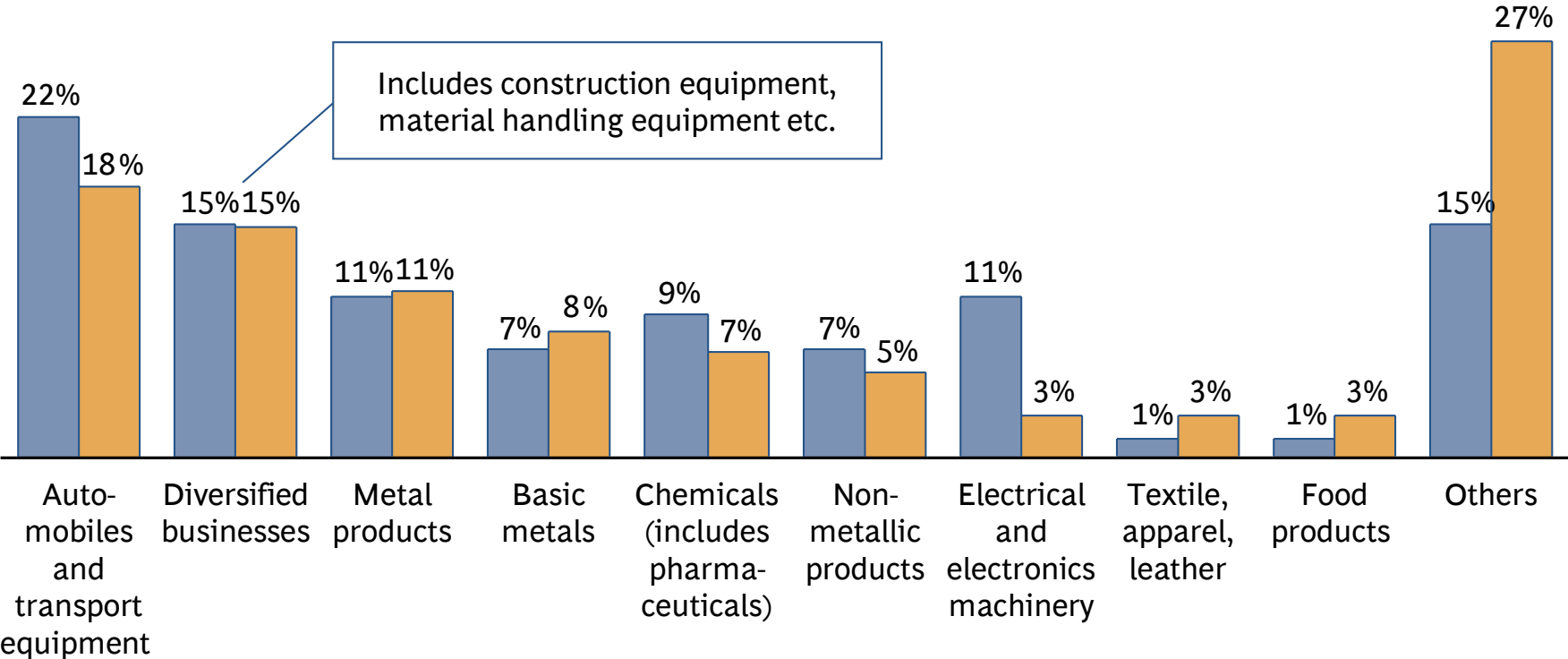
Appendix—Respondent profiles

Respondents spread across all industries including diversified businesses

Please specify the (major) sector of operation for your company

2015 2016

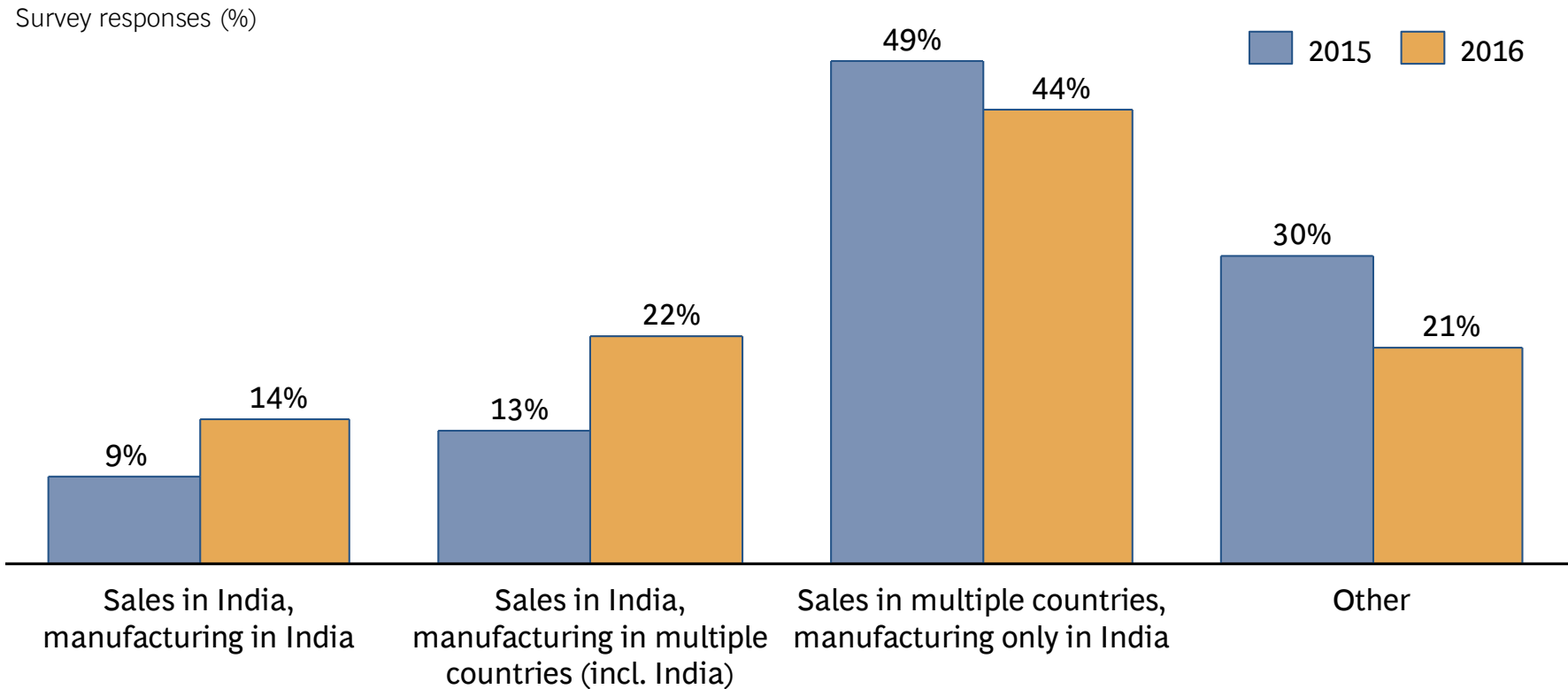
Survey responses (%)



Sources: CII-BCG Manufacturing Leadership Survey 2015, 2016.

Most respondents have a global footprint while manufacturing only in India

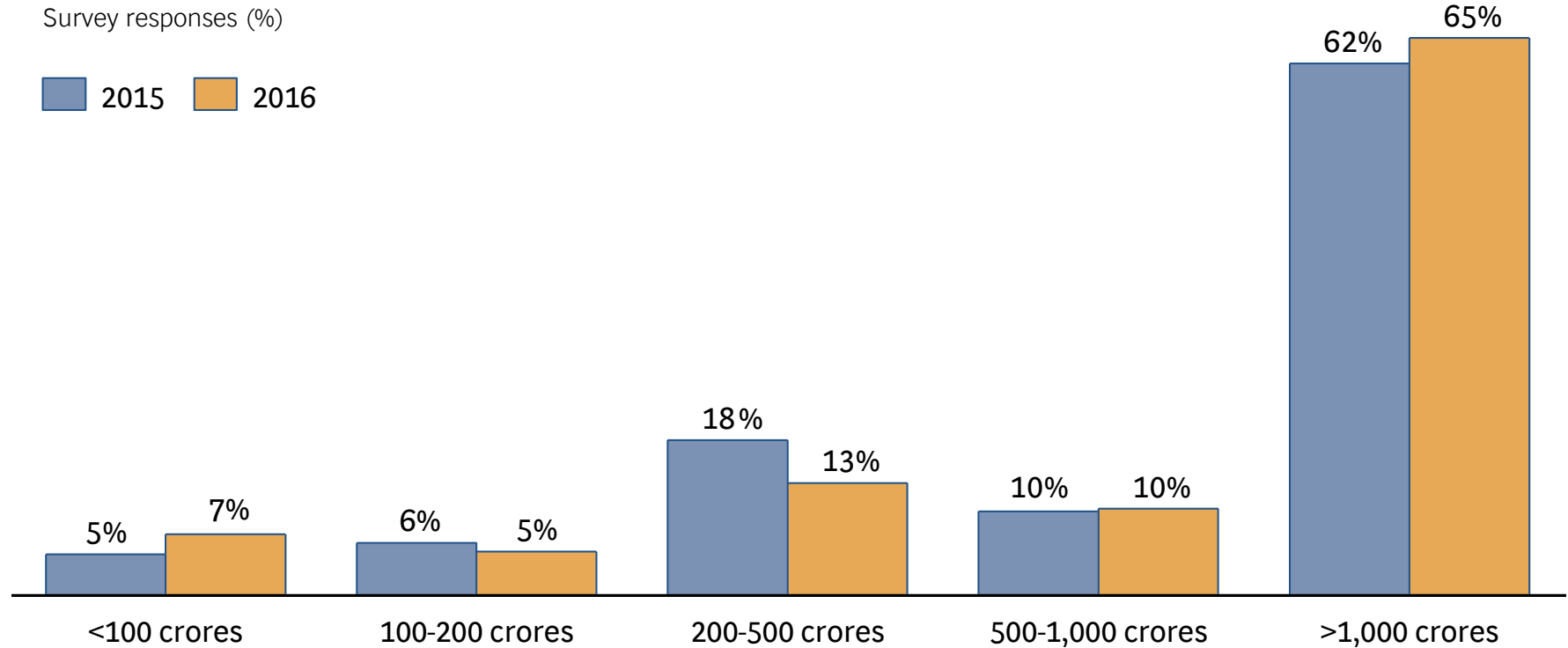
Please specify your company's footprint (Indian / global)



Sources: CII-BCG Manufacturing Leadership Survey 2015, 2016.

Respondents across various company sizes with majority from businesses of more than Rs. 1,000 crores in revenue

What is the size of your company's India operations? (in terms of annual turnover in Rs. Crore)



Sources: CII-BCG Manufacturing Leadership Survey 2015, 2016.

Acknowledgements

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Group Talent Mentor
Aditya Birla Management Co.

C.P Gupta
Managing Director
Ambica Steels Limited

Amandeep Singh
Head, Defense
Ashok Leyland Limited

Vivek
Country Manager
Caterpillar

Sunil Munjal
Chairman
Hero Corporate Service

Mahendra Singhi
Group CEO, Director
Dalmia Cement Limited

K K Kaul
Director
DCM Shriram Limited

Yashwant Gharpure
Chairman, Managing Director
Gharpure Consulting Engineers

Blaise Costabir
Managing Director
GMI Zarhak Moulders

Atul Sohani
Associate Vice President
Godrej & Boyce

Kaustubh Shukla
COO, Industrial Products Division
Godrej & Boyce

Mahesh Kaikini
Plant Head - Gurgaon
Hero MotorCorp

Dara Byramjee
Executive Vice President
Godrej & Boyce

Madhusudan
Director
Greenlight Technologies Limited

Mohini Kelkar
Managing Director
Grind Master Machines Limited

Hande Diltemiz
Executive Director
Hennes & Mauritz India

Pankaj Jhunjunwala
Managing Director
H M Cements Limited

Channabasappa Mugali
Asst. Manager – Business Planning
Harita Fehrer Limited

Vijay Sethi
CIO, Head CSR
Hero MotorCorp

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Jayachandran
COO
HIL Limited

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Deputy CMO
Hindustan Zinc Limited

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Managing Director, CEO
Imerys Minerals Limited

Yogesh Saxena
Vice President
Isgec Heavy Engineering Limited

Subir Kumar Chowdhury
Exec. Vice President – India Ops
JCB India Limited

Ashok Bharadwaj
Senior Vice President
JSW Steel Limited

Ashok Roy Chowdhury
Deputy General Manager
KC Cottrell India Limited

Sanjay Kirloskar
Chairman, Managing Director
Kirloskar Brothers Limited

Anotny Cherukara
VP Corporate Strategy
Kirloskar Oil Engines Limited

Pavan Khaitan
Managing Director
Kuantum Papers Limited

R Rajendran
Managing Advisor
Lakshmi Machine Works Limited

Vilas Satpute
Executive VP - Manufacturing
Lupin Limited

Nishikant Ahire
CMD
Machine House Limited

Vijay Kalra
CMO – Automotive Division
Mahindra & Mahindra Limited

K G Mantri
Senior Vice President
Man Industries India Limited

Sudhir Mehta
Chairman and Managing Director
Pinnacle Industries

R R Tripathi
Executive Vice President - CPES
Praj Industries Limited

Vikram Pandit
President
Praj Industries Limited

Ashok Wadhwan
President
Punj Lloyd

Harsh Goenka
Chairman
RPG Enterprises

Jayant Davar
Co-Chairman
Sandhar Technologies Limited

Acknowledgements

Parag Satpute
Managing Director
Sandvik Asia Limited

Shankar Krishnan
Group Head, Strategy
Shapoorji Pallonji Group

Vandan Shah
Managing Director
Sipra Engineers Private Limited

M Chandrashekar
Managing Director
SKM Animal Feeds and Foods

G G Trivedi
CEO
Somany Ceramics Limited

Ashish Bharatam
Managing Director
SRF Limited

P Ramnath
CEO
Sterlite Copper

Sarangarajan
Senior Vice President
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Swithun Manoharan
Senior Vice President
TAFE

Abraham George Stephanos
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TATA Steel Processing & Distribution

Sharad Kumar Saraf
Chairman
Technocraft Industries Limited

Asish Vaishnav
Business Head – Cooling SBU
Thermax Limited

Nikhil Sawhane
Managing Director
Triveni Turbine

Sharad Kumar Sharma
Executive Vice President
TRL Krosaki Limited

Audhut Borkar
Head Business Excellence
Vedanta Limited

Gyanesh Chaudhary
MD & CEO
Vikram Solar

M Gopi Krishna
COO – Domestic Projects Group
Voltas Limited

Ashwini Malhotra
Managing Director
Weikfield Foods Limited

For Further Reading

The Boston Consulting Group publishes other reports and articles on related topics that may be of interest to senior executives. Recent examples include:

Industry 4.0: The Future of Productivity and Growth in Manufacturing Industries

A focus by the Boston Consulting Group, April 2015

Man and Machine in Industry 4.0

A report by the Boston Consulting Group, September 2015

Time to Accelerate in the Race Toward Industry 4.0

A perspective by The Boston Consulting Group, May 2016

Three Ways for Companies to Succeed in the Fourth Industrial Revolution

A perspective by The Boston Consulting Group, January 2016

Manufacturing for the 21st century

An article by the Boston Consulting Group, November 2016

Why Advanced Manufacturing Will Boost Productivity

A report by The Boston Consulting Group, January 2015

Future of Indian Manufacturing: Bridging the Gap

A report by The Boston Consulting Group in association with Confederation of Indian Industry, August 2015

Forks in the Road: Navigating Industry Disruption

A report by The Boston Consulting Group, May 2016

The Robotics Revolution: The Next Great Leap in Manufacturing

An article by the Boston Consulting Group, September 2015

The Evolution of Robotics

An interactive by The Boston Consulting Group, November 2014

The Rise of Robotics

An article by The Boston Consulting Group, August 2014

3D Printing Will Change the Game: Prepare for Impact

An article by the Boston Consulting Group, September 2013

Make in India: Turning Vision Into Reality

A report by The Boston Consulting Group in association with Confederation of Indian Industry, October 2014

Acting on the Digital Imperative

An article by The Boston Consulting Group, September 2016

The Proximity Paradox: Balancing Auto Suppliers' Manufacturing Networks

A report by The Boston Consulting Group, March 2015

People Productivity: Key to Indian Manufacturing Competitiveness

A report by The Boston Consulting Group, March 2013

The shifting Economics of Global Manufacturing – How Cost Competitiveness Is Changing Worldwide

A report by The Boston Consulting Group, August 2014

Note to the Reader

About the Authors

Dr. Arindam Bhattacharya is a Senior Partner and Director in the New Delhi office of The Boston Consulting Group.

Arun Bruce is a Partner and Director in the Mumbai office of The Boston Consulting Group.

Anirudh Tara is a Principal in the New Delhi office of The Boston Consulting Group.

Mani Singhal is a Principal in the New Delhi office of The Boston Consulting group.

For Further Contact

If you would like to discuss the themes and content of this report, please contact:

BCG

Dr. Arindam Bhattacharya

Senior Partner and Director

BCG New Delhi

+91 124 459 7093

bhattacharya.arindam@bcg.com

Arun Bruce

Partner and Director

BCG Mumbai

+91 22 6749 7101

bruce.arun@bcg.com

Anirudh Tara

Principal

BCG New Delhi

+91 124 459 7178

tara.anirudh@bcg.com

Mani Singhal

Principal

BCG New Delhi

+91 124 459 7146

singhal.mani@bcg.com

CII

Dr. Saugat Mukherjee

Regional Director

CII – Western Region

+91 22 2493 9747

s.mukherjee@cii.in

Alpa Antani

Head – International & Special Projects

CII – Western Region

+91 22 2493 1790

alpa.antani@cii.in

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Nariman Bhavan
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Email: ciiwr@cii.in Web: www.cii.in

Tel: +91 22 24931790

Fax: +91 22 24939463/ 24945831

Mail: Confederation of Indian Industry

Western Region
105, Kakad Chambers
1st floor,
132, Dr Annie Besant Road,
Worli,
Mumbai – 400 018
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