5G Economy Global Public Survey Report Commissioned by Qualcomm

PSB

December 2016

www.psbresearch.com

Objectives for the Study

1. **Measure awareness of 5G and its potential impact** on stakeholders' lives, the economy, and our global society

2. **Assess the 5G landscape** and what it would take for a company to be a leader in 5G

3. **Explore barriers to adoption of 5G** and opportunities for growth

Methodology

Between October 28th and December 8th, 2016 PSB conducted 3,588 interviews in 7 countries online. The audiences include:

- Business Decision Makers (BDMs): Individuals who have decision making power over multiple departments or divisions within their company (if applicable), split across small, medium, and large companies.
  - Oversample of Vertical BDMs in the Telecom, Cloud Computing, Healthcare, and Automotive industries
  - Small and Medium Enterprises (SME): BDMs who work at a company with fewer than 500 employees. Includes oversample vertical BDMs
- Tech Innovators: Tech sector employees developing or managing products or services related to innovation
- Opinion Leaders: Analysts and media stakeholders who are influential in key industries (Telecom, cloud computing, healthcare, and automotive)
- Broad Elites: Highly educated, high income individuals who are active in public affairs and read major news publications.
- Tech Enthusiasts: Subset of GP who is highly engaged in technology and likely to adopt new technology

Note: We have included an "All" data point for questions asked of all respondents across audiences. Results for the "All" point can be generalized only to the respondents in our sample and are not representative of global sentiment.

Data in this report is largely reported at the regional level, with exceptions for certain questions.

- EMEA includes the United Kingdom, Germany, France
- Asia includes China, South Korea, Japan

N sizes are specified throughout the report. All numbers are showing percentages unless otherwise specified.

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
N size	3588	1035	150	226	225	150	227	225	75	75	75	150	225	225	151	226	225

	BDMs															
	Telecom BDMs				Cloud Computing BDMs				Healthcare BDMs				Automotive BDMs			
	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
N size	75	76	75	75	75	76	75	75	75	75	75	75	76	75	75	75

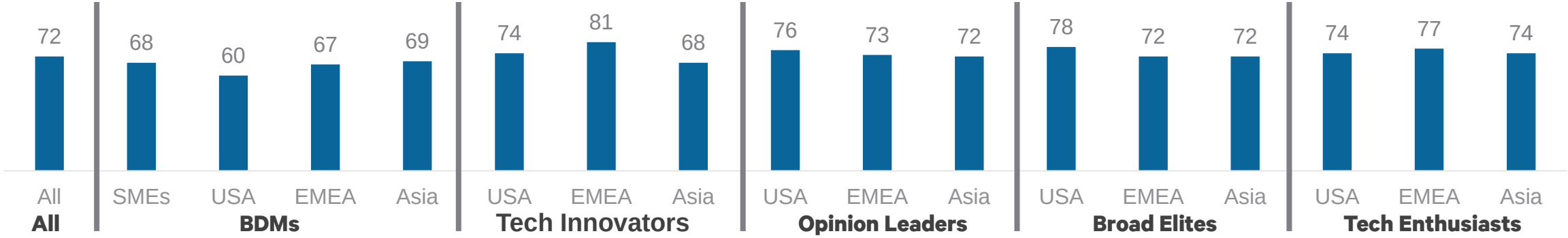
EXECUTIVE SUMMARY

Key Findings

1. While awareness of 5G is low, respondents believe the transition from 4G/LTE to 5G will be seamless
2. BDMs and Opinion Leaders are more likely to say 5G will have ‘a great deal’ of impact on their businesses and the economy than 4G/LTE
3. 5G is expected to have widespread benefits for society and the economy overall, including enabling new products and services, increasing productivity, and allowing for new industries to emerge
4. It’s critical for 5G to deliver cybersecurity and data protections, ultra-high reliability, and extreme data speeds
5. Companies with past experience developing and delivering wireless connectivity solutions are seen as best equipped to be leaders in 5G
6. If 5G was not made available in their country, respondents fear there would be widespread consequences, worrying their country would be less globally competitive and more susceptible to data security threats, and ultimately suffer an economic downturn
7. Respondents say both technology industry standards and IP rights protections are key in helping companies deliver the full benefits of 5G
8. More than 2 in 3 believe new technologies can greatly improve mission critical services in their country
9. Half of respondents feel patients and healthcare professionals will benefit from using virtual reality technologies
10. Autonomous cars are expected to reduce traffic incidents, congestion, and distracted driving, and increase access to transportation for the disabled or elderly

1 More than 6 in 10 respondents across audiences say 5G services will complement 4G/LTE capabilities, delivering seamless and consistent experiences

Which of the following is closer to your view?
% 'As they are introduced, 5G services will complement 4G/LTE capabilities to deliver consistent and seamless experiences'



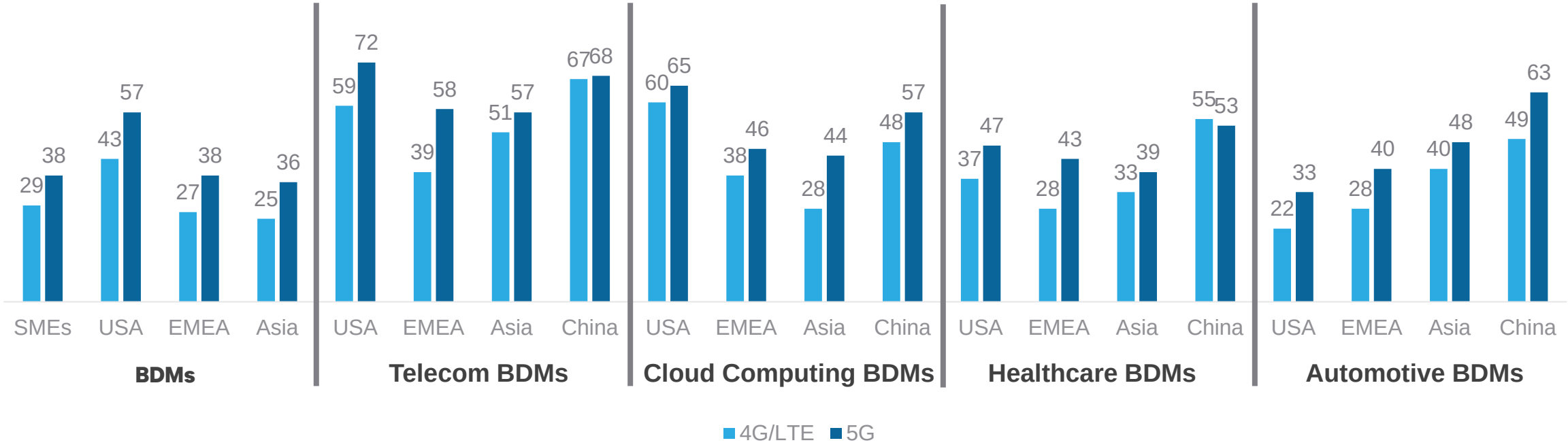
	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
As they are introduced, 5G services will complement 4G/LTE capabilities to deliver consistent and seamless experiences	72	68	60	67	69	74	81	68	76	73	72	78	72	72	74	77	74
5G services and capabilities will be fundamentally separate from 4G/LTE capabilities	28	32	40	33	31	26	19	32	24	27	28	22	28	28	26	23	26

Q53: Which of the following is closer to your view?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

2 BDMs feel 5G will have more of an impact on their businesses than 4G/LTE

- Roughly 6 in 10 Telecom BDMs say 5G will impact their business ‘a great deal’
- US and Chinese respondents tend to be the most appreciative of the impact of 4G/LTE and 5G

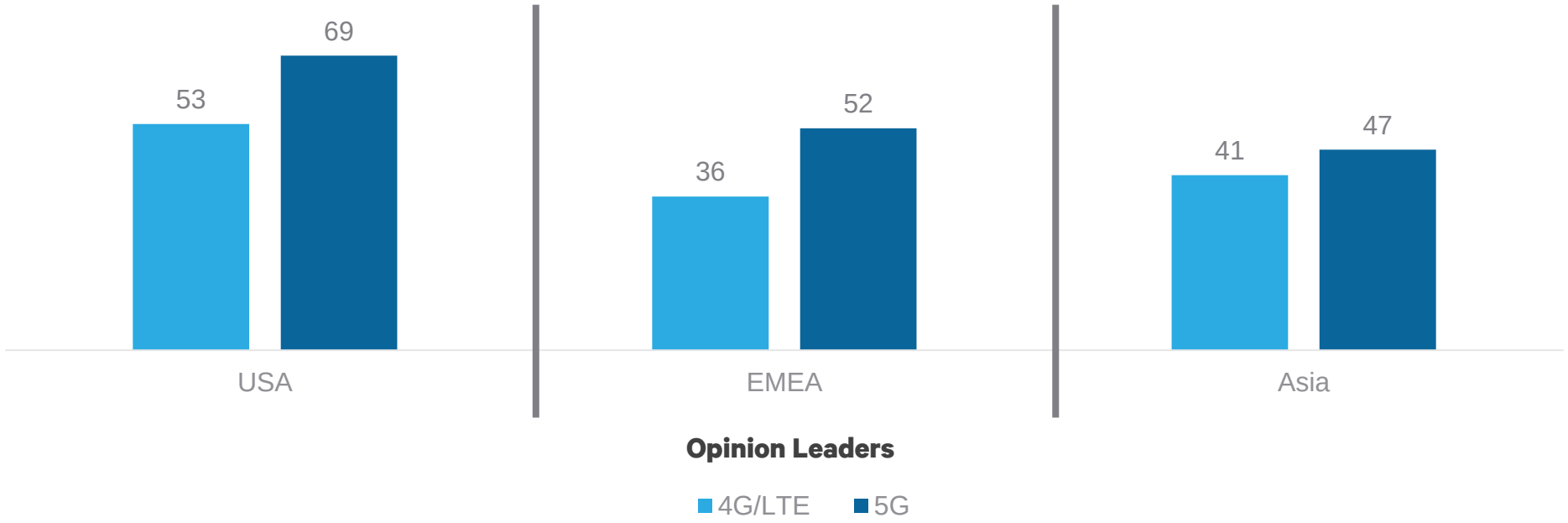
How much of an impact has 4G/LTE had on your business? / How much of an impact do you expect 5G will have on your business?
% ‘A great deal’



Q4GImpact1. How much of an impact has 4G/LTE had on your business? / Q5GImpact1. How much of an impact do you expect 5G will have on your business?
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

2 Opinion Leaders believe 5G will have more of an impact on the economy than 4G/LTE

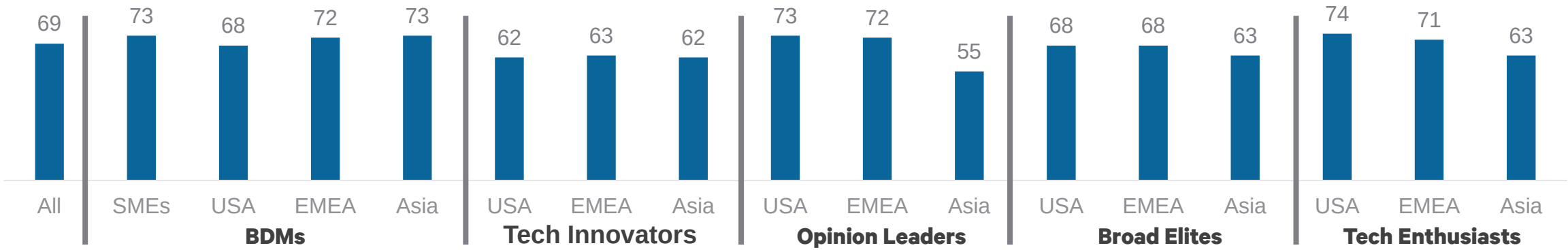
How much of an impact has 4G/LTE had on the economy in your country? / How much of an impact do you expect 5G will have on the economy in your country?
% 'A great deal'



4GImpact3: How much of an impact has 4G/LTE had on the economy in your country? / Q5GImpact2: How much of an impact do you expect 5G will have on the economy in your country? Showing 'a great deal' Opinion Leaders (US n=75, EMEA n=75, Asia n=75)

3 Respondents across audiences believe 5G will have widespread benefits for society and the economy, not just consumers

Which of the following is closer to your view?
% '5G will have widespread benefits for society and the economy, not just consumers'



	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
5G will primarily benefit consumers	31	27	32	28	27	38	37	38	27	28	45	32	32	37	26	29	37
5G will have widespread benefits for society and the economy, not just consumers	69	73	68	72	73	62	63	62	73	72	55	68	68	63	74	71	63

Q48: Which of the following is closer to your view?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

3 Respondents believe 5G will enable new products and services that have not been invented yet, increase productivity, and allow new industries to emerge

To what extent do you agree or disagree that innovations enabled by 5G will contribute to each of the following? Top 2 Box % 'Strongly agree or somewhat agree' *Ranked by All (Economic vs. Societal)*

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Economic Benefits																	
Enable new products, services, and use cases that have not been invented yet	91	89	93	86	89	94	89	90	96	85	87	92	92	90	97	87	94
Increase productivity	89	88	91	85	90	87	82	83	96	85	87	97	86	93	94	89	93
Allow for new industries to emerge	87	86	86	84	89	89	80	86	87	85	86	88	88	92	93	84	94
Make companies more globally competitive	85	84	87	84	87	78	76	75	93	80	85	87	82	90	91	83	90
Enable the development and growth of small businesses	82	84	86	84	84	82	71	77	92	77	79	86	82	78	92	82	85
Drive economic growth in my country	82	81	87	78	84	80	74	77	88	82	85	79	73	89	90	77	87
Improve operational cost efficiencies for your business	82	83	87	80	89	78	68	81	-	-	-	-	-	-	-	-	-
Create new jobs	80	79	80	74	82	76	78	78	80	64	82	81	74	88	87	73	82
Support economic growth in developing markets	78	77	80	76	76	79	69	66	90	73	67	81	75	74	89	76	77
Societal Benefits																	
Make the internet accessible to all	85	84	84	83	87	82	81	84	91	80	79	80	84	86	90	89	88
Increase access to education	83	83	88	79	78	79	74	77	89	81	73	85	81	80	93	83	89
Increase access to healthcare to more people in more places	79	79	76	71	80	75	67	76	78	83	79	74	74	85	87	76	87
Improve quality of healthcare and overall life expectancy	74	73	70	61	80	66	58	74	71	77	77	66	71	83	81	68	89
Improve quality of life in cities, including reducing traffic congestion and pollution	73	73	74	65	76	65	62	74	78	65	76	73	67	81	84	64	83
Improve safety/security from natural and man-made threats	73	77	76	68	80	66	52	73	75	68	83	74	61	78	82	62	85
Lower global energy use	70	69	70	66	72	66	56	68	63	62	75	69	67	76	75	68	77
Discover alternative energies	63	65	68	59	69	50	45	57	62	50	54	57	54	64	77	61	71
Increase efficiency of water supply	57	59	55	48	63	47	43	55	52	56	50	53	47	62	63	46	68
Slow climate change	48	49	38	44	54	39	32	47	42	37	40	39	42	53	50	40	58
Reduce world hunger	45	47	40	39	55	34	28	43	35	38	48	33	35	49	53	29	55

G27: To what extent do you agree or disagree that innovations enabled by 5G will contribute to each of the following? *Only asked among BDMs and Tech Innovators
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

4 Strong security and enhanced protections for sensitive data, ultra-high reliability, and extreme data speeds are top benefits for 5G to deliver

Thinking about your company, how important is it for 5G to deliver on each of the following?
% 'Very important'
Ranked by BDM All SMEs

	BDMs																			
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Strong security and enhanced protections for sensitive data	58	67	61	57	55	54	47	53	67	50	61	64	73	68	59	53	61	59	53	56
Ultra-high reliability	53	62	54	47	56	43	55	53	57	51	53	51	63	59	48	56	61	56	53	57
Extreme data speeds	52	62	52	47	64	42	51	56	71	43	55	59	53	53	51	57	62	47	49	51
Extreme user mobility	48	61	51	39	45	46	45	51	60	45	39	44	52	61	36	57	57	41	47	57
Extended coverage to reach challenging locations	46	51	53	31	55	47	47	55	60	49	41	33	49	51	35	47	53	61	47	51
Ultra-low energy consumption – certain types of sensors would have 10+ years of battery life without needing to be charged	45	61	51	37	48	41	45	55	56	50	41	48	44	49	40	45	54	44	43	47
Ultra-high density	42	54	48	35	51	50	47	52	56	47	45	48	39	45	29	44	53	41	36	45
Unified connectivity	36	43	42	32	43	43	43	47	51	30	32	63	37	41	35	47	49	28	37	43
Extreme capacity	36	49	35	29	41	42	45	45	55	34	36	41	44	44	39	52	38	31	31	33
Ultra-low latency to reduce the amount of time it takes devices to respond to each other	35	48	33	25	48	39	41	57	56	38	37	52	37	35	36	47	47	40	32	41
Ultra-low complexity	33	38	34	26	41	30	40	49	43	32	29	39	40	39	25	47	47	33	36	44

G16.mB: Thinking about your company, how important is it for 5G to deliver on each of the following? Answer choices abbreviated.
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75),

Top 3 options per audience

5 Respondents believe companies with past experience developing and delivering wireless connectivity solutions are best equipped to be leaders in 5G

- Respondents also say 5G leaders should be experts in a variety of technologies, including wireless service and connectivity

What type of company do you believe is most well-equipped to be a leader in the development and adoption of 5g? *Up to 3 responses permitted, Ranked by All*

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
A company that has delivered 3G, 4G/LTE, and Wi-Fi solutions on a global scale	49	49	51	54	50	45	42	42	51	48	44	57	50	55	61	54	51
A company that has been involved in researching and developing 4G/LTE, Wi-Fi and 3G	44	43	48	38	43	52	41	45	44	33	52	47	46	44	47	44	49
A company that is an expert in a variety of technologies, including wireless service and connectivity	36	36	37	28	34	32	25	47	49	33	35	46	29	36	38	35	37
A company that is able to provide devices that are compatible with past, present and future networks	32	32	32	31	32	28	30	25	40	32	25	36	33	36	36	31	35
A company that invests heavily in research and development	31	29	33	30	29	23	33	32	36	37	40	30	34	28	29	36	31
A company that is involved in the global standards-setting process	22	19	14	17	31	23	17	24	29	20	24	18	16	27	19	15	29
A company that exclusively works on wireless service and connectivity	20	23	26	22	19	19	22	19	20	19	12	18	13	16	15	16	23
A start-up company	13	15	15	15	12	15	14	8	9	17	17	7	13	11	13	15	11

Q106: What type of company do you believe is most well-equipped to be a leader in the development and adoption of 5g? Omitting “other” and “none of the above”
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

6 Respondents say if their country does not adopt 5G in the next decade, their country will become less competitive globally and individuals and companies would become more susceptible to data security threats

- 2 in 3 say the pace of innovation will slow down

If 5G is not made broadly available in your country within the next decade, how concerned are you that each of the follow would occur?
Showing 'very + somewhat concerned', Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Individuals and companies in my country would be more susceptible to data security threats	71	67	76	69	72	66	52	68	79	72	67	70	66	75	79	71	82
My country will become less competitive globally	69	62	73	76	61	69	65	67	74	76	71	66	66	67	77	71	71
The pace of innovation will slow down	66	60	68	64	61	69	63	64	64	71	66	68	61	68	72	65	74
The economy would suffer	62	57	66	68	53	60	61	58	66	67	59	56	63	64	71	65	65
My company will fall behind competitors in my industry	61	53	66	60	61	58	56	66	-	-	-	-	-	-	-	-	-

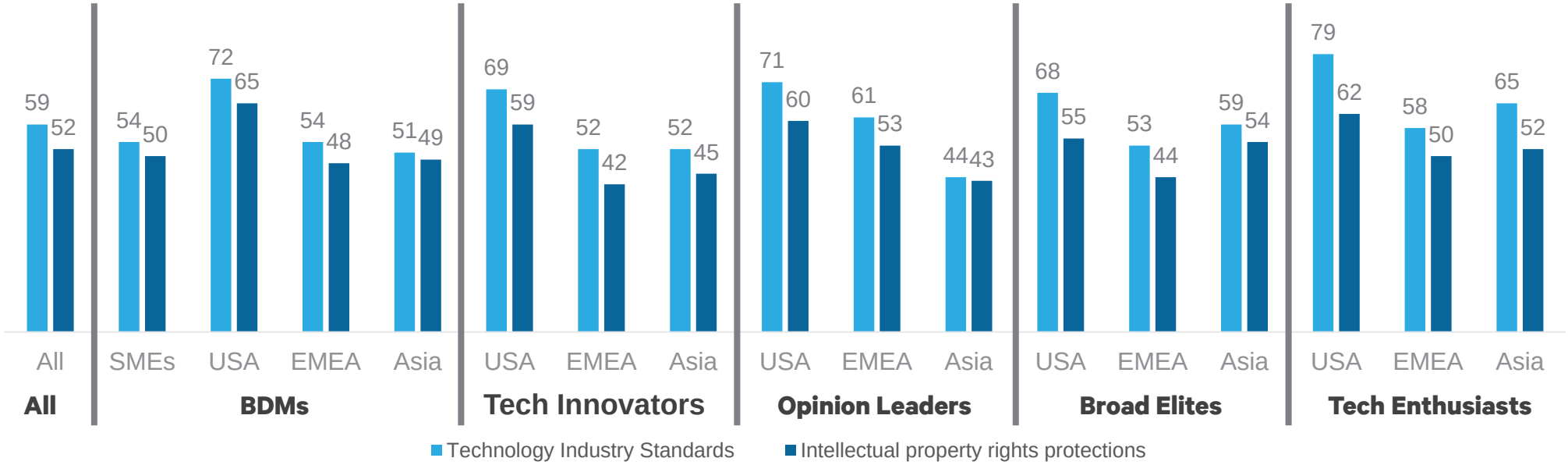
G98: If 5G is not made broadly available in your country within the next decade, how concerned are you that each of the follow would occur? Showing "very + somewhat concerned", omitting "other" and "none of the above"
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

7 Respondents feel both technology industry standards and IP rights protections are key in helping companies deliver the full benefits of 5G in the next decade

- US respondents are especially likely to feel this way

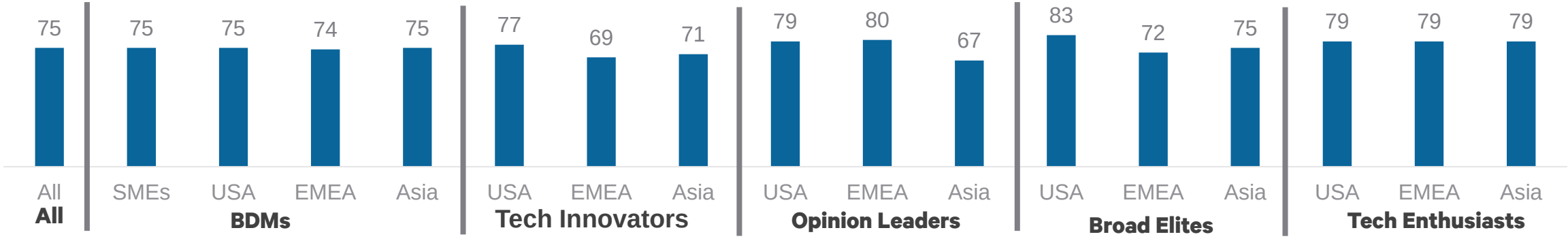
How important are technology industry standards/intellectual property rights protections in helping companies deliver the full benefits of 5G within the next 10 years?
% 'Very important'



Q90: How important are technology industry standards in helping companies deliver the full benefits of 5G within the next 10 years? / Q93: How important are intellectual property rights protections in helping companies deliver the full benefits of 5G within the next 10 years? Showing 'very important'
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

8 More than 2 in 3 believe new technologies can greatly improve mission critical services in their country

Which of the following is closer to your view? *When it comes to mission critical services (emergency response, etc.) in my country…*
% 'New technologies can greatly improve the mission critical services in my country'



When it comes to mission critical services (emergency response, etc.) in my country…	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
New technologies can greatly improve the mission-critical services in my country	75	75	75	74	75	77	69	71	79	80	67	83	72	75	79	79	79
The current technology in place is effectively delivering on the mission-critical needs in my country	25	25	25	26	25	23	31	29	21	20	33	17	28	25	21	21	21

Q79: Which of the following is closer to your view? When it comes to mission critical services (emergency response, etc.) in my country…
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

9 Half of respondents feel patients and healthcare professionals will benefit from using virtual reality technologies

- Tech Enthusiasts are especially likely to feel they will personally benefit from virtual reality
- Tech Innovators are especially likely to see benefits for gamers

Who do you believe can benefit from using virtual reality technologies?
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Patients and healthcare professionals	48	51	46	40	63	36	39	50	45	52	47	53	44	59	44	40	57
Gamers	39	36	35	36	36	53	54	50	28	40	51	21	37	40	36	40	41
Students and educators	38	36	45	29	29	42	30	33	44	37	49	49	40	36	50	39	36
Emergency response teams (police officers or firefighters)	36	38	39	41	38	36	32	31	45	37	29	41	31	26	36	33	35
Pilots, commercial drivers, or train operators	33	35	35	37	35	32	32	35	36	32	36	29	23	38	28	31	32
Myself	32	26	29	27	24	27	27	26	35	31	27	42	40	30	46	44	39
Disabled or elderly individuals	26	24	17	29	25	20	23	28	19	27	27	23	32	32	25	27	35
Soldiers	18	19	26	22	10	25	26	10	27	25	7	22	17	11	23	15	7

Q58: Who do you believe can benefit from using virtual reality technologies? Select up to 3 choices. Omitting “other” and “none of the above”
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

10 The top benefits of having autonomous vehicles on the road include fewer traffic accidents, less distracted driving, and increased access to transportation for disabled or senior citizens

- EMEA and Asian respondents are also more likely to point to less congestion as a key benefit

Which do you believe are the benefits of having autonomous vehicles on the road?
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Fewer traffic accidents	44	41	47	38	46	47	51	40	45	41	43	48	48	51	46	48	49
Increased access to transportation for individuals who are disabled or senior citizens	33	31	25	30	41	32	32	40	39	43	41	28	26	43	34	28	40
Less distracted driving	29	31	35	29	26	33	23	24	31	36	24	31	28	30	41	27	25
Less congestion	27	26	17	29	30	26	32	35	24	19	35	27	30	34	19	28	31
Less stressful commutes	25	24	21	23	24	23	26	20	31	33	23	31	28	18	25	29	21
Reduce the frequency of DUIs	25	24	27	19	28	26	23	26	28	20	19	23	23	21	32	22	30
Increased productivity or ability to focus on other tasks	22	20	19	21	25	21	19	27	20	20	29	22	18	29	21	13	28
Fewer carbon emissions	18	19	18	22	13	17	19	10	16	17	17	15	20	12	19	27	15
Increased gas mileage	15	16	13	21	9	11	15	11	15	15	15	15	14	10	15	19	13
More quality times with friends/family in the car	14	14	13	13	13	19	11	19	13	19	17	8	10	16	10	13	18
More people ride sharing	12	10	11	12	8	11	11	9	15	9	9	10	10	9	17	9	9

Q76: Which do you believe are the benefits of having autonomous vehicles on the road? Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

DETAILED FINDINGS

LESSONS FROM 4G/LTE

Lessons from 4G/LTE Key Findings

1. Respondents recognize that 4G/LTE has widespread impact on innovation, the economy, their businesses, and their lives

2. Most impactful benefits of 4G/LTE include faster speeds and increased coverage. BDMs and Opinion Leaders also recognize it has led to increased operational efficiency, while Tech Innovators believe it has improved coverage and reliability

3. There is room for improvement – less than half of respondents say 4G/LTE meets their expectations ‘very well’. Key areas for improvement include improved download and upload rates, cybersecurity protections, and cost

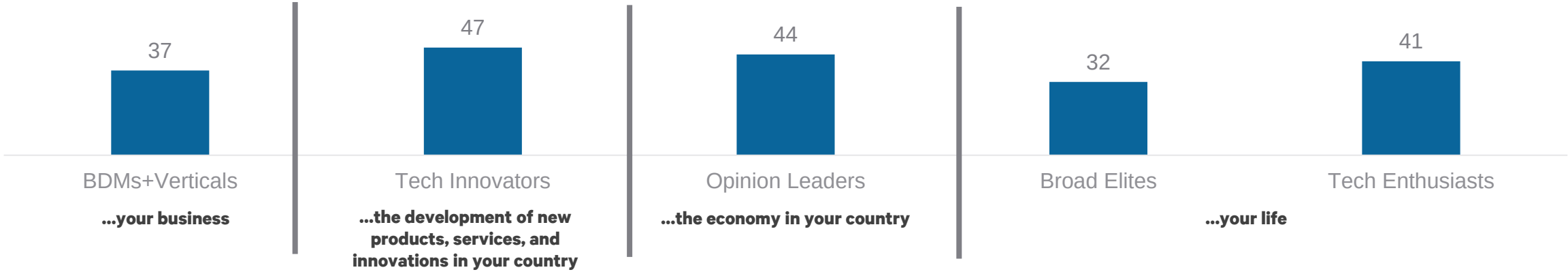
Key differences across audiences: Lessons from 4G/LTE

- US respondents are generally more likely than counterparts in other markets to say 4G/LTE has had an **impact on their lives, their businesses, the economy, and the development of new products/services**
  - The exception is US Auto BDMs – who are less likely than counterparts in other markets to say 4G/LTE has had a 'great deal' of impact on their business
  - EMEA respondents are generally less likely to say this
  - Tech Enthusiasts are more likely than Broad Elites to say 4G/LTE has had 'a great deal' of impact on their lives
- US respondents are most likely to say 4G/LTE has met their expectations '**very well**', while Asian respondents least likely to say this
  - Telecom BDMs are generally more likely than counterparts in other verticals to say 4G/LTE meets their expectations 'very well'
- Top pain points across audiences include **cost**, **cybersecurity concerns**, **poor battery life**, and **slow upload/download rates**
  - EMEA respondents are more likely to point to lack of coverage as an issue and this is a key area they want to see improved

1 More than 1 in 3 respondents indicate 4G/LTE has had ‘a great deal’ of impact on their businesses, innovation, the economy, and their lives

- Roughly half of Tech Innovators and Opinion Leaders say 4G/LTE has greatly impacted the economy and innovation

How much of an impact has 4G/LTE had on…?
% ‘A great deal’



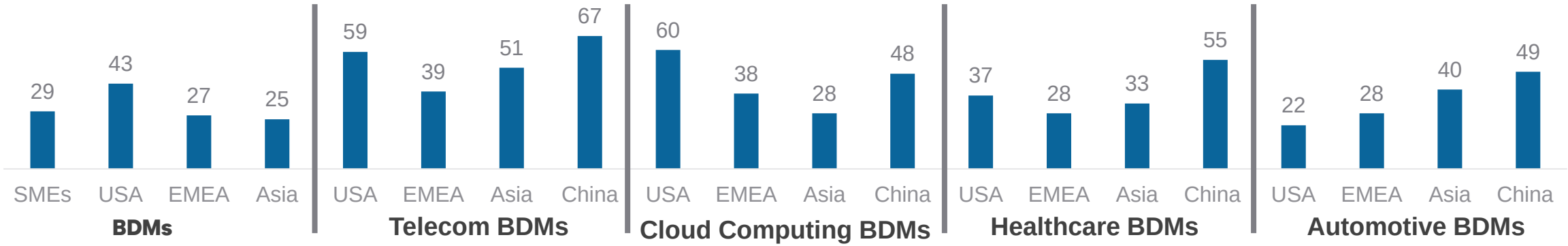
How much of an impact has 4G/LTE had on…	…your business?	…the development of new products, services, and innovations in your country?	…the economy in your country?	…your life?	
Showing ‘all’ data point per audience	BDMs + Verticals	Tech Innovators	Opinion Leaders	Broad Elites	Tech Enthusiasts
A great deal	37	47	44	32	41
Somewhat	40	40	47	45	45
Not that much	14	9	8	16	10
Not at all	3	4	1	2	2

Q4GImpact1. How much of an impact has 4G/LTE had on your business? (BDMs + Vertical BDMs)
Q4GImpact2. How much has 4G/LTE had on the development of new products, services, and innovations in your country (Tech Innovators)
Q4GImpact3: How much has 4G/LTE had on the economy in your country? (Opinion Leaders)
Q4GImpact4. How much has 4G/LTE had on your life? (Elites, Tech Enthusiasts)
Not showing “Not applicable “ answer choice
(BDMs + Verticals n=1559), (Tech Innovators n=602), (Opinion Leaders n=225), (Broad Elites n =600), (Tech Enthusiasts n=602)

1 Telecom and Cloud Computing BDMs are generally more likely to say 4G/LTE has had 'a great deal of impact' on their business compared to Healthcare and Auto BDMs

- US and Chinese BDMs are the most likely to say 4G/LTE has had a 'great deal' of impact on their businesses

How much of an impact has 4G/LTE has on your business?
% 'A great deal'



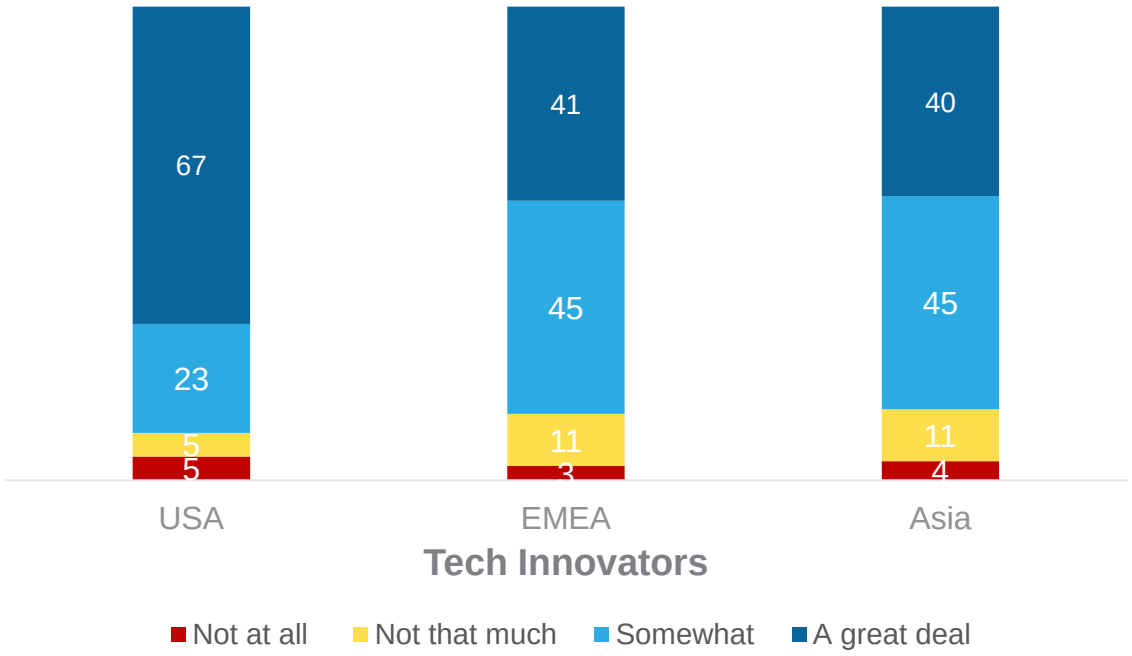
	BDMs																			
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
A great deal	29	43	27	25	59	39	51	67	60	38	28	48	37	28	33	55	22	28	40	49
Somewhat	42	35	41	44	35	49	44	33	31	45	49	52	32	39	40	39	38	36	37	48
Not that much	17	14	13	20	5	7	5	0	7	14	19	0	23	13	9	4	22	24	16	3
Not at all	3	2	6	4	0	3	0	0	0	0	0	0	1	9	5	1	5	0	1	0
Not applicable-My company does not use 4G/LTE	9	6	14	7	1	3	0	0	3	3	4	0	7	11	12	1	12	12	5	0

Q4GImpact1. How much of an impact has 4G/LTE has on your business?
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

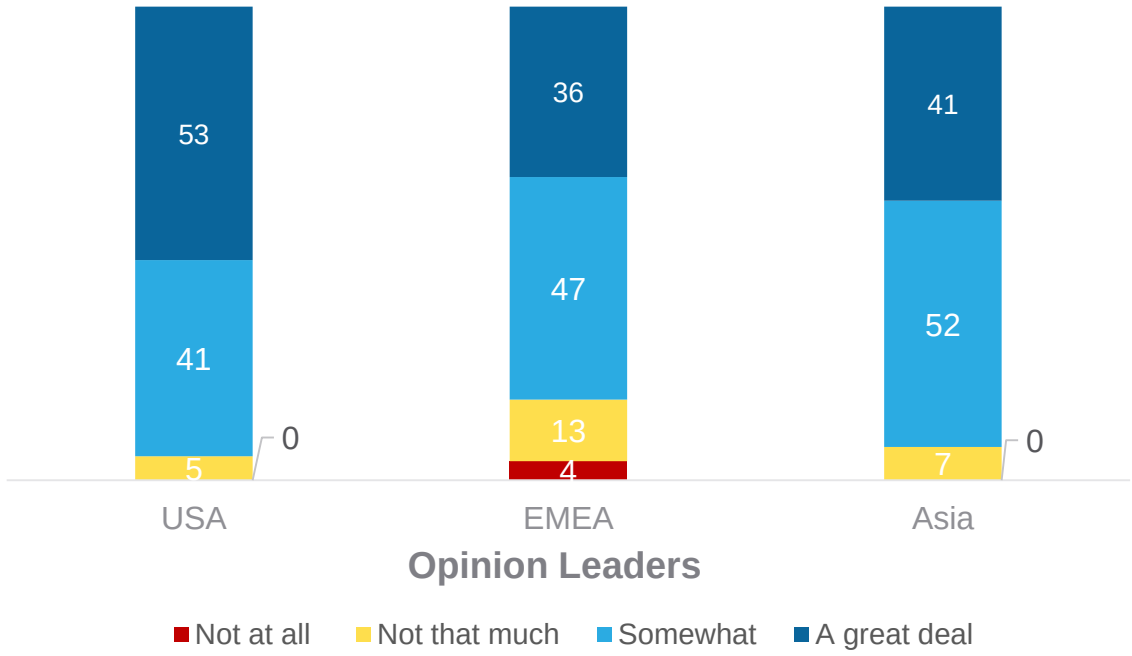
1 Tech Innovators and Opinion Leaders – especially in the US – feel 4G/LTE has had ‘a great impact’ on innovation and the economy

- In particular, 2 in 3 US Tech Innovators believe 4G/LTE has had ‘a great impact’ on the development of new products and services in their country
- More than 1 in 3 respondents from EMEA and Asia report ‘a great impact’ on the economy and innovation

How much of an impact has 4G/LTE had on the development of new products, services, and innovations in your country?



How much of an impact has 4G/LTE had on the economy in your country?

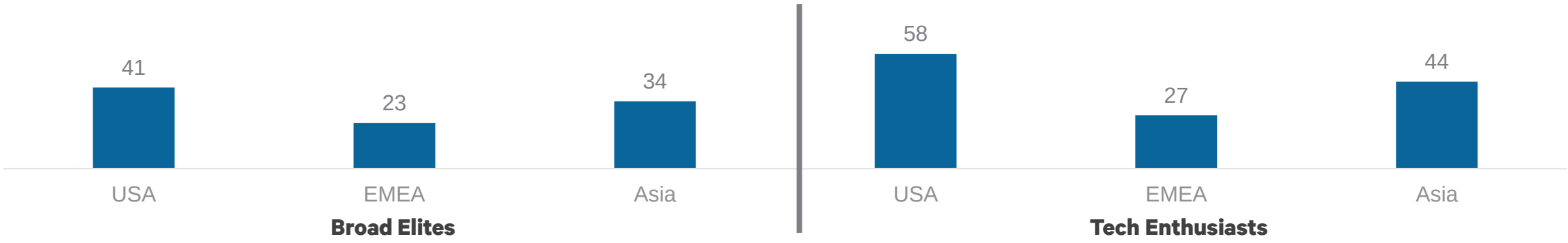


Q4GImpact2. How much has 4G/LTE had on the development of new products, services, and innovations in your country? (Tech Innovators)
Q4GImpact3: How much has 4G/LTE had on the economy in your country? (Opinion Leaders)
Tech Innovators (US n=150, EMEA n=227, Asia n=225) Opinion Leaders (US n=75, EMEA n=75, Asia n=75)

1 In comparison to Elites, Tech Enthusiasts are more likely to say 4G/LTE has impacted their life ‘a great deal’

- EMEA Elites and Tech Enthusiasts are less likely than their counterparts in other markets to say it has had a ‘great deal’ of impact on their life

How much of an impact has 4G/LTE had on your life?
% ‘A great deal’



	Broad Elites			Tech Enthusiasts		
	USA	EMEA	Asia	USA	EMEA	Asia
A great deal	41	23	34	58	27	44
Somewhat	42	43	49	33	48	50
Not that much	13	19	13	8	16	6
Not at all	1	5	1	0	4	0
Not applicable-I do not use 4G/LTE	3	10	3	1	4	0

Q4GImpact4. How much has 4G/LTE had on your life?
Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

2 BDMs feel 4G/LTE has increased their company's internet access speeds, coverage, and operational efficiency

Which of the following aspects of 4G/LTE have had the most impact on your company?
Up to 3 responses permitted, Ranked by BDM All SMEs

	BDMs																			
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Increased internet access speeds (i.e. web, downloads or streaming)	43	36	47	48	48	46	43	43	41	57	56	40	27	45	32	32	30	36	45	41
Increased operational efficiency	29	33	28	32	32	34	40	40	32	34	24	35	35	20	35	43	21	28	35	29
Increased coverage in more areas	28	37	30	25	40	26	19	19	27	28	20	21	31	25	24	29	21	33	20	29
Increased productivity	24	38	20	18	39	22	28	24	27	34	23	35	32	25	20	31	21	17	28	36
Improved reliability in high-traffic areas	21	25	22	20	28	29	24	24	29	22	24	40	20	21	24	25	17	15	29	36
Better ability to connect with others	21	31	20	22	25	17	23	24	28	21	16	9	28	27	13	16	28	28	9	12
Ability to connect more devices	15	15	16	12	17	18	13	20	25	22	17	23	16	12	17	28	18	17	21	32
Access to new applications and services (i.e. social media, video chats, ride hailing)	15	16	12	17	19	21	20	21	23	17	21	20	19	16	11	19	13	9	17	19
Enhanced cybersecurity protections	12	9	12	13	13	12	28	32	15	12	5	36	9	12	12	24	7	8	21	27
Decreased data prices	11	5	8	8	11	12	25	31	13	9	15	17	7	8	12	16	12	15	17	23
Improved battery life	9	10	8	7	13	9	9	16	13	7	16	19	9	8	4	11	11	12	15	13

QImpactA: Which of the following aspects of 4G/LTE have had the most impact on your company? Select up to 3 choices. Omitting "Other" and "None of the above"
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

2 More than half of respondents point to 4G/LTE's faster speeds as having the most impact

- Roughly 1 in 3 US respondents across audiences also say increased coverage has made an impact

Which of the following aspects of 4G/LTE have had the most impact on…?
Up to 3 responses permitted, Ranked by USA Tech Innovators

Which of the following aspects of 4G/LTE have had the most impact on…	…the development of new products, services, and innovations in your country			…the marketplace			…your personal mobile use					
	Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Increased internet access speeds (i.e. web, downloads or streaming)	52	63	65	56	63	68	61	56	67	62	67	70
Increased coverage in more areas	33	32	27	33	20	21	28	28	26	35	27	28
Access to new applications and services (i.e. social media, video chats, ride hailing)	26	21	23	23	23	31	21	11	28	18	16	32
Increased operational efficiency	26	21	25	29	28	37	22	25	27	25	23	38
Improved reliability in high-traffic areas	24	29	26	23	29	24	33	26	24	30	25	27
Better ability to connect with others	23	19	17	35	28	19	27	19	19	30	28	24
Increased productivity	23	20	15	35	24	17	31	19	16	28	22	16
Ability to connect more devices	15	13	15	20	15	15	9	14	12	12	10	16
Improved battery life	15	8	6	7	5	8	13	9	9	14	9	9
Decreased data prices	13	17	17	12	11	11	7	8	10	7	14	10
Enhanced cybersecurity protections	9	8	10	12	15	12	5	8	15	11	5	7

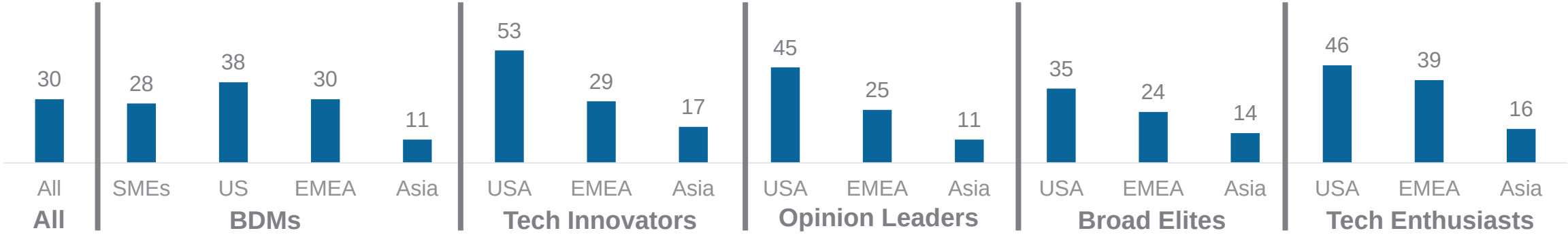
QImpactB: Which of the following aspects of 4G/LTE have had the most impact on the development of new products, services, and innovations in your country? Select up to 3 choices. Omitting "Other" and "None of the above" (Tech Innovators)
QImpactD: Which of the following aspects of 4G/LTE have had the most impact on the marketplace? Select up to 3 choices. Omitting "Other" and "None of the above" (Opinion Leaders)
QImpactC: Which of the following aspects of 4G/LTE have had the most impact on your personal mobile use? Select up to 3 choices. Omitting "Other" and "None of the above" (Broad Elites/Tech Enthusiasts)
Tech Innovators (US n=150, EMEA n=227, Asia n=225) Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

3 Less than half of respondents say 4G/LTE meets their expectations ‘very well’

- US Tech Innovators are the exception, with 53% reporting 4G/LTE meets their expectations ‘very well’
- Respondents from Asia are least likely to say 4G/LTE meets their expectations ‘very well’

How well does 4G/LTE meet your expectations?
% ‘Very well’



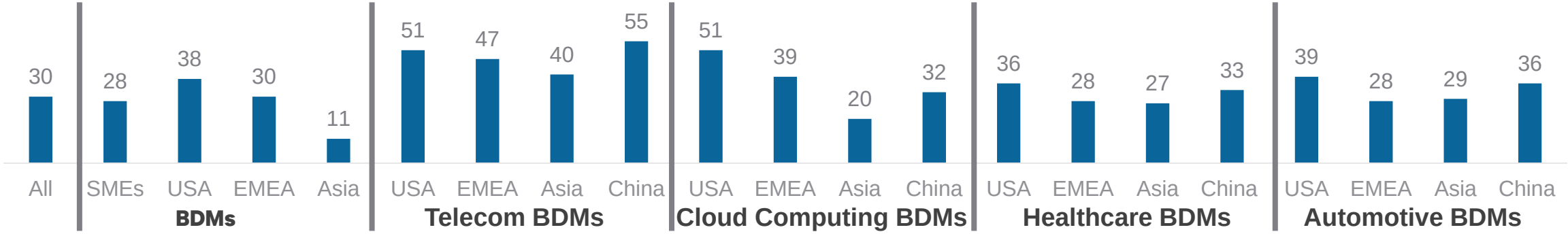
	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Very well	30	28	38	30	11	53	29	17	45	25	11	35	24	14	46	39	16
Somewhat well	57	57	51	51	73	36	52	71	43	52	77	55	51	68	49	47	73
Not that well	6	6	3	4	13	3	4	8	1	7	11	3	9	16	3	7	10
Not at all well	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0
I don’t have expectations for 4G/LTE	6	9	8	15	3	7	15	4	11	16	1	6	14	2	2	6	0

Q4: How well does 4G/LTE meet your expectations?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

3 Less than half of BDMs across most industries believe 4G/LTE meets their expectations ‘very well’

- Telecom BDMs generally report higher satisfaction
- 1 in 2 US Cloud Computing BDMs say 4G/LTE meets their expectations ‘very well’

How well does 4G/LTE meet your expectations?
% ‘Very well’



	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Very well	30	28	38	30	11	51	47	40	55	51	39	20	32	36	28	27	33	39	28	29	36
Somewhat well	57	57	51	51	73	45	49	53	43	47	54	69	65	51	52	59	63	47	49	64	61
Not that well	6	6	3	4	13	3	3	7	3	0	4	9	3	5	7	4	0	1	7	4	1
Not at all well	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	1
I don’t have expectations for 4G/LTE	6	9	8	15	3	1	1	0	0	1	3	1	0	8	13	11	4	11	15	1	0

Q4: How well does 4G/LTE meet your expectations?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

3 Top wireless connectivity pain points include cost, cybersecurity concerns, poor battery life, and slow data download and upload rates

- Tech Enthusiasts in the US and Asia would like to improve data usage caps, while EMEA respondents across audiences want to improve lack of coverage

What, if anything, would you like to improve about your current wireless connectivity?
Up to 3 responses permitted, Ranked by USA Opinion Leaders

	Opinion Leaders			Broad Elites			Tech Enthusiasts		
	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
High data service cost	45	20	24	42	20	41	51	26	40
Cybersecurity and/or privacy concerns	39	41	49	43	39	48	30	33	45
High power consumption that leads to poor battery life on my devices	37	25	24	40	31	33	35	36	40
Slow data download and upload rates	35	55	32	33	47	34	42	47	36
Data usage caps	28	24	27	22	24	39	35	25	44
Lack of coverage	21	31	31	25	45	22	21	38	28
Inconsistent service experience	19	23	32	18	26	23	24	24	21
Subpar streaming experience	16	15	15	17	12	8	20	8	9
Limited ability to connect more devices	11	25	20	10	11	9	15	8	14
Lack of user friendliness	8	13	8	4	6	4	3	7	5

QImprove1: What, if anything, would you like to improve about your current wireless connectivity? Select up to 3 choices. Omitting “Other” and “None of the above”
Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

3 When it comes to their company's wireless connectivity, BDMs and Tech Innovators would like to improve slow download and upload speeds and cybersecurity/privacy concerns

- Lack of coverage is also a top issue for EMEA respondents and Healthcare and Automotive BDMs
- High data costs are a key issue for US respondents

What, if anything, would you like to improve about your company's current wireless connectivity?
Up to 3 responses permitted, Ranked by BDM All SMEs

	BDMs																				Tech Innovators		
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive						
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia
Slow data download and upload rates	42	39	51	47	36	41	40	47	29	49	31	37	40	53	33	49	41	48	37	36	33	42	34
Cybersecurity and/or privacy concerns	41	37	42	47	36	36	40	39	52	43	41	52	39	39	40	41	25	35	40	44	30	34	38
Lack of coverage	29	19	34	22	31	32	29	33	19	38	24	33	17	39	31	45	25	40	33	45	19	28	22
High data service cost	29	45	27	31	35	30	32	35	43	32	29	32	39	20	23	29	37	27	33	28	29	17	24
Inconsistent service experience	22	20	22	26	21	9	17	21	19	20	33	20	25	23	25	17	18	21	29	25	12	22	24
High power consumption that leads to poor battery life on devices	20	19	24	13	31	28	23	20	29	30	17	17	21	21	12	12	18	27	23	21	18	16	15
Data usage caps	17	19	18	22	29	21	27	27	35	17	13	16	16	13	13	19	17	11	25	24	18	15	19
Limited ability to connect more devices	17	17	14	20	21	16	31	37	23	16	21	44	9	16	23	35	9	11	17	24	17	19	19
Subpar streaming experience	10	11	9	7	16	12	20	20	12	9	12	20	12	9	8	16	9	12	16	19	6	9	5
Lack of user friendliness	10	10	11	7	4	11	12	15	9	8	15	24	7	11	12	12	9	19	8	13	9	10	8

QImprove2: What, if anything, would you like to improve about your company's current wireless connectivity? Select up to 3 choices. Omitting "Other" and "None of the above
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75),), Tech Innovators (US n=150, EMEA n=227, Asia n=225)

Top 3 options per audience

AWARENESS, EXPECTATIONS, AND IMPACT OF 5G

Awareness, Expectations, and Impact of 5G Key Findings

1. Awareness of 5G is low, so there's opportunity to educate respondents about 5G and the potential benefits. With just a brief education, there is widespread appreciation for the impact 5G will have on respondents personally, their company, new innovations, and their country overall.

2. When thinking about what they'd like to see 5G improve on over 4G/LTE, respondents focus on enhanced speed and reliability; however, when it comes to the most *important* features of 5G to deliver on, cybersecurity protections rise to the top.

3. Audiences say 5G will enable the development of new products, services, and innovations, increase productivity, and allow for new industries to emerge, and will also increase access to education and the internet

Key differences across audiences: Awareness, expectations, and impact of 5G

- Asian respondents are the **most aware** of 5G across audiences
  - Chinese BDMs across verticals are more aware of 5G than counterparts in other markets
  - Telecom BDMs are the most aware of 5G across audiences
- US respondents are the most likely across audiences to say 5G will be **'very important**' to them and will have a great deal of impact on their lives, business, the economy, and the development of new products and services
  - Chinese BDMs (especially in the Telecom industry) are more likely than counterparts in other markets to say 5G will be 'very important' to them
- Asian Telecom and Automotive BDMs are especially likely to feel 5G will have **widespread benefits for society and the economy overall**, while Asian Opinion Leaders and US Telecom BDMs are the least likely to say this
- SME BDMs, Asian respondents and Tech Innovators are most likely to say **fully autonomous vehicles** are one of the capabilities they're interested in that will be possible under 5G
  - Auto BDMs are also excited about fully autonomous vehicles, while Healthcare BDMs are interested in remote healthcare
  - Opinion Leaders in the US and Asia are interested in smart cities
- 1 in 4 EMEA respondents say **increased coverage** would make them upgrade their device to a 5G-compatible device
  - Asian respondents – including 1 in 4 Tech Enthusiasts – are more likely to say support for virtual reality would motivate them to upgrade their current device with a 5G-compatible device than counterparts in other markets
- **Cybersecurity** and **extreme data speeds** are some of the top benefits for 5G. US and Asian Elites and US Tech Enthusiasts also point to **ultra-high reliability**, while EMEA respondents are looking for **increased coverage**
  - Telecom BDMs say it's key for 5G to deliver extended coverage to reach challenging locations

1 Awareness of 5G is low – especially in the US and EMEA

- There's opportunity for education about 5G

Which of the following innovations, if any, have you heard of before today?
Multiple responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
3D printing	93	92	93	93	91	95	93	84	95	92	93	99	96	94	96	96	91
Virtual reality	91	87	95	85	86	93	93	87	91	85	96	95	89	91	97	94	92
Autonomous vehicles	86	84	75	86	90	82	87	80	81	83	93	87	90	94	75	85	94
Delivery drones	81	76	77	82	78	81	85	67	83	81	80	88	91	87	89	85	85
Robotic surgery	73	72	75	69	74	75	72	55	75	64	77	85	79	73	79	67	76
Internet of Things	64	58	53	51	68	66	65	69	63	45	84	61	68	74	48	40	75
5G	**50**	**46**	**37**	**36**	**48**	**49**	**45**	**56**	**43**	**55**	**63**	**46**	**41**	**52**	**39**	**37**	**68**
Machine learning	45	38	33	38	35	60	54	37	51	40	57	43	45	41	36	31	50

Q1: Which of the following innovations, if any, have you heard of before today? Select all that apply. Omitting "None of the above"
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

1 Telecom BDMs are most aware of 5G – especially in Asia

- Across industries, Chinese BDMs are the most aware of 5G

Which of the following innovations, if any, have you heard of before today
Multiple responses permitted, Ranked by All

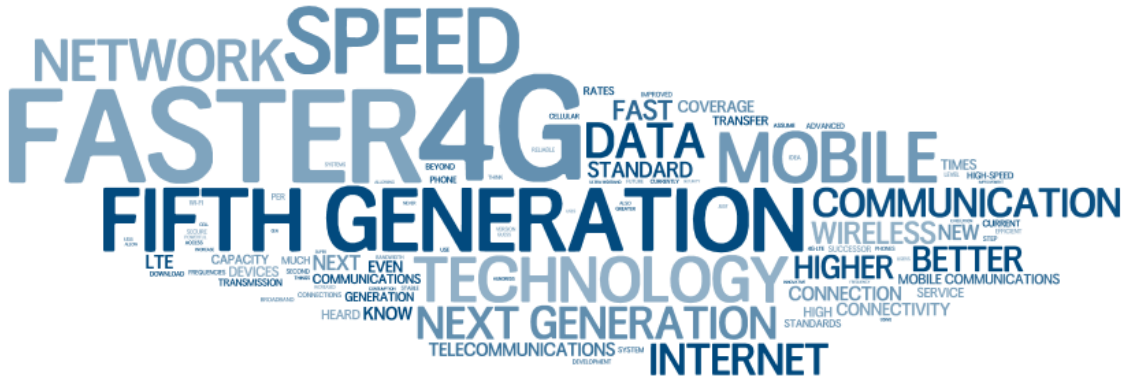
	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
3D printing	93	92	93	93	91	95	91	89	96	93	97	97	99	92	92	85	85	92	95	93	97
Virtual reality	91	87	95	85	86	92	92	88	95	97	93	97	99	93	83	85	88	87	83	89	95
Autonomous vehicles	86	84	75	86	90	77	83	89	93	77	89	97	99	72	87	84	79	71	84	95	96
Delivery drones	81	76	77	82	78	79	79	72	76	85	82	96	92	76	71	77	60	72	73	83	84
Robotic surgery	73	72	75	69	74	76	58	76	83	75	72	85	87	76	84	80	64	68	63	67	76
Internet of Things	64	58	53	51	68	69	66	91	100	72	74	81	97	43	56	68	79	33	45	79	95
5G	**50**	**46**	**37**	**36**	**48**	**69**	**55**	**79**	**89**	**49**	**49**	**69**	**80**	**31**	**31**	**61**	**79**	**39**	**35**	**68**	**84**
Machine learning	45	38	33	38	35	63	43	71	79	59	54	61	77	29	39	39	59	26	35	61	75

Q1: Which of the following innovations, if any, have you heard of before today? Select all that apply. Omitting “None of the above”
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

1 5G is generically described as the next generation of mobile communications by many, while some point to specific benefits of 5G

How would you describe 5G? Please be as specific as possible.
Among All



Many compare 5G directly to 4G/LTE. Even if they had not heard of 5G before, they make assumptions compared to 4G/LTE

- *"It's a new type of wireless protocol that will **provide faster and more secure internet connections** and a **better experience than 4G.**"* – Chinese Broad Elite
- *"A **considerable increase in speed compared to 4G.**"* – French BDM
- *"I hadn't heard of it so I cannot explain but I **can guess that it's the next generation of 4G.**"* – Japanese BDM
- *"As the **follow-on generation to 4G, it has increased capabilities and speed.**"* –Korean Broad Elite
- *"A new network technology that has **much higher speed than 3g, or 4g LTE.**"*– US Tech Enthusiast
- *"**Faster and quicker than 4G.**"* – UK Cloud Computing BDM
- *"**5G is the successor to 4G (and 4G+)**, that is, the next standard in mobile telephones."* – French Broad Elite
- *"A **better, more innovative 4G.**"* – UK Tech Enthusiast

Some are more aware of the potentially ground-breaking uses of 5G

- *"It is **fundamentally different from 4G**, not limited to cell phones but will cover many devices."* – Chinese BDM
- *"A new type of mobile communications that **enables extremely high data throughput and thus completely new applications.**"* – German Opinion Leader
- *"5G is a **type of wireless connection designed to keep up with the proliferation of mobile devices connected to the internet and their needs**. It's no longer just your phone and your computer."* – US Opinion Leader
- ***"Wide-band communication is possible on a far better scale than before"*** – Japanese Tech Innovator
- *"The successor to 5G, **important for the Internet of things, higher data transmission rates, faster pings**."* – German Tech Innovator
- *"About **100 times higher data rates than today's LTE network** and around **1000 times greater capacity**, **worldwide 100 billion mobile phones accessible simultaneously, extremely low lag times**, etc."* – German Elite
- *"It can transmit at gigabit speed, and it is next generation mobile communications that **improves data processing capabilities for the era of the Internet of Things.**"* – Korean Tech Enthusiast
- *"It has data transmission speed that is as fast as light, and **we will be able to watch videos with cutting-edge image quality anytime and anyplace with downloads taking only a few seconds**."* – Korean Tech Enthusiast

Q6:How would you describe 5G? Please be as specific as possible. Asked among All
Open-end responses are based off a smaller subset of random respondents pulled from each country

1 Tech Innovators expect faster speeds from 5G, which will enable new use cases

In your own words, what benefits do you expect 5G will provide? Please be as specific as possible.
Among Tech Innovators

- *"5G will be **indispensable in a world of data and images**. **No more waiting time for anything; that's the 5G promise.** Whether it's on a smartphone or tablet, posting of content, including a 4K video (the famous ultra high definition videos) would be instantaneous."* – French Tech Innovator
- *"**New applications and increased network availability**."* – US Tech Innovator
- *"**Network transmission that's hundreds of times faster than 4G**, makes it possible to download an entire HD movie in under a second."* – Chinese Tech Innovator
- *"It's going to allow people [to] send texts, make calls, and browse the web as always—and it will **dramatically increase the speed at which data is transferred across the network**. 5G will make it easier for people to download and upload Ultra HD and 3D video. **It will also make room for the thousands of internet-connected devices entering our everyday world**."* – US Tech Innovator
- *"It will **enable a wider band [of] communication than [what] exists now.**"* – Japanese Tech Innovator
- *"Faster internet speed, **better support for the Internet of Things, will facilitate development for smart devices and apps.**"* – Chinese Tech Innovator
- *"Faster speed. I often use the Internet while moving and will be able to **search for data at high speed without interruption**."* – Korean Tech Innovator
- *"Better and faster communication. **Working and presenting is possible almost everywhere**."* – German Tech Innovator
- *"**Better connectivity, higher throughput, and low latency.**"* – German Tech Innovator
- *"5G technology can provide a **bandwidth speed of super capacity**, efficiency can be significantly improved to better **support the rapid growth of users of mobile communications needs.**"* – US Tech Innovator
- *"**Faster, more stable!** Better connectivity, more widespread coverage, lower fees."* – Chinese Tech Innovator

Q8: In your own words, what benefits do you expect 5G will provide? Please be as specific as possible. Asked of Tech Innovators
Open-end responses are based off a smaller subset of random respondents pulled from each country

1 Respondents familiar with 5G feel it will increase productivity and data speeds, lead to more connectivity, and make their lives more convenient

In your own words, what impact do you expect 5G will have on your life? Please be as specific as possible.
Asked of BDMs, Opinion Leaders, Elites, and Tech Enthusiasts who are familiar with 5G

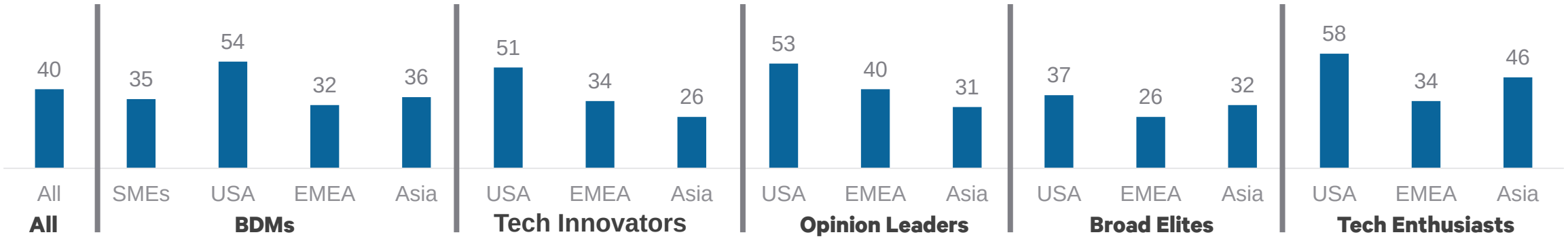
- *5G will have a huge impact on my life and **productivity**, **making work easier**."* – Chinese Telecom BDM
- *"As the roll-out of IoT is accelerated, more and **more devices will become net-connectable and convenience will be enhanced**. **Connecting to the net without worrying about the quantity of data** involved will result in more people leaving the PC behind."* – Japanese Tech Enthusiast
- *"Bringing an **excellent Internet experience**, such as **smart homes, smart driving, remote medical diagnosis and treatment**."* – Chinese Automotive BDM
- *"I think it will change communications and will make automation more common. It will allow **faster reactions within the Internet of Things**. It will be **faster download times of data** or video. It will be much **more reliable**."* - US Broad Elite
- *"**My work will become more productive,** but at the same time it will increase. There will be **better security and efficiency** during personal data transactions."* – UK Opinion Leader
- *"**Access to the company's database at all times** for sales reps for **troubleshooting** and **limiting unnecessary travel to customer locations**."* – French Telecom BDM
- *"**5G offers higher reliability and lower latency** and is able to meet the specific demands of industry applications such as smart manufacturing, autopilot driving, and so forth. It will **expand and integrate development space in the industry and support innovative development,** both economically and socially."* – Chinese Tech Enthusiast
- *"**5G will let people experience and engage with almost everything wherever they are**. The time required for physical transfers such as business trips can be saved, and it can be used to enrich life and thinking."* – Japanese Opinion Leader
- *"**Faster communication** means the work environment is improved and productivity increases."* – Japanese Tech Enthusiast
- *"I think that it will **provide conveniences for a better life**."* – Korean Tech Enthusiast
- *"If it becomes possible to achieve things like **augmented reality and virtual reality**, it will result in benefits such as improvements to work **efficiency, increases to productivity, and convenience** by using it in a variety of fields such as networked robots and drones."* – Korean BDM

Q9: In your own words, what impact do you expect 5G will have on your life? Please be as specific as possible. Asked of BDMs, Opinion Leaders, Elites, and Tech Enthusiasts who are familiar with 5G
Open-end responses are based off a smaller subset of random respondents pulled from each country

1 Respondents believe 5G will be important to them

- US audiences are most likely to say 5G will be ‘very important’ to them

How important do you think 5G will be to you?
% ‘Very important’

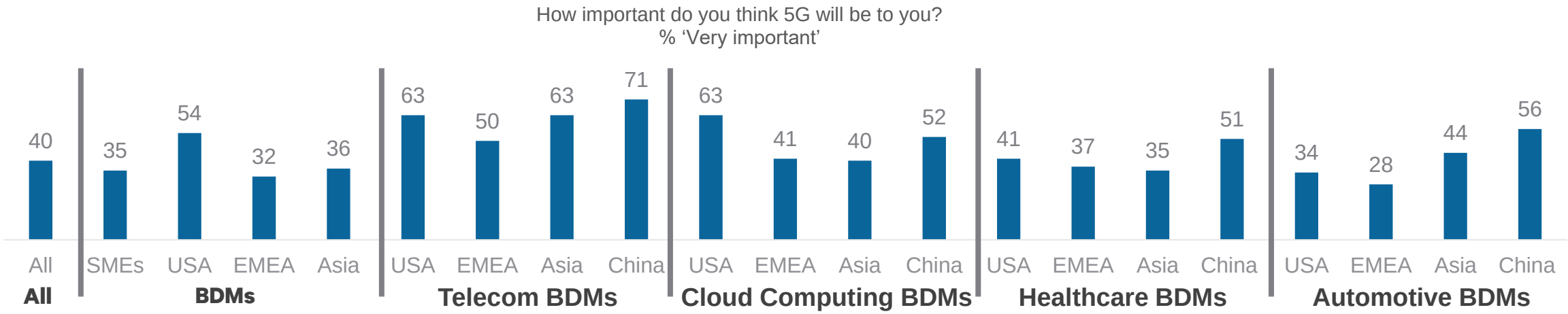


	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Important (Top 2 box)	**83**	**77**	**83**	**74**	**79**	**87**	**71**	**82**	**92**	**77**	**95**	**86**	**73**	**82**	**98**	**85**	**95**
Not Important (Bottom 2 box)	**16**	**23**	**17**	**26**	**22**	**12**	**30**	**19**	**8**	**23**	**5**	**15**	**27**	**18**	**3**	**15**	**4**
Very important	40	35	54	32	36	51	34	26	53	40	31	37	26	32	58	34	46
Somewhat important	43	42	29	42	43	36	37	56	39	37	64	49	47	50	40	51	49
Not that important	13	17	13	16	18	7	24	16	8	15	5	13	22	16	2	15	4
Not at all important	3	6	4	10	4	5	6	3	0	8	0	2	5	2	1	0	0

Q7: How important do you think 5G will be to you?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

1 Telecom and Cloud Computing BDMs are the most likely to say they expect 5G will be ‘very important’ to them

- Chinese BDMs are generally the most likely to feel 5G will be ‘very important’ to them

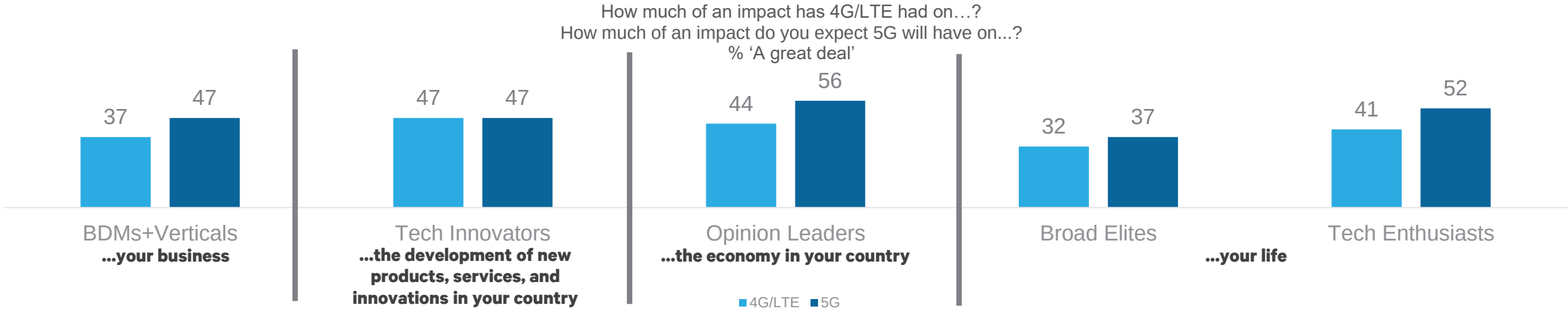


	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Important (Top 2 box)	**83**	**77**	**83**	**74**	**79**	**98**	**87**	**95**	**99**	**95**	**83**	**85**	**97**	**84**	**78**	**78**	**94**	**75**	**75**	**84**	**97**
Not Important (Bottom 2 box)	**16**	**23**	**17**	**26**	**22**	**3**	**14**	**5**	**1**	**5**	**17**	**14**	**3**	**16**	**21**	**23**	**7**	**25**	**25**	**16**	**3**
Very important	40	35	54	32	36	63	50	63	71	63	41	40	52	41	37	35	51	34	28	44	56
Somewhat important	43	42	29	42	43	35	37	32	28	32	42	45	45	43	41	43	43	41	47	40	41
Not that important	13	17	13	16	18	3	11	5	1	4	16	13	3	8	12	15	7	20	17	13	3
Not at all important	3	6	4	10	4	0	3	0	0	1	1	1	0	8	9	8	0	5	8	3	0

Q7: How important do you think 5G will be to you?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

1 Across most audiences, respondents believe 5G will have a greater impact than 4G/LTE

- Tech Innovators expect 5G to have the same impact as 4G/LTE has had on the development of new innovations



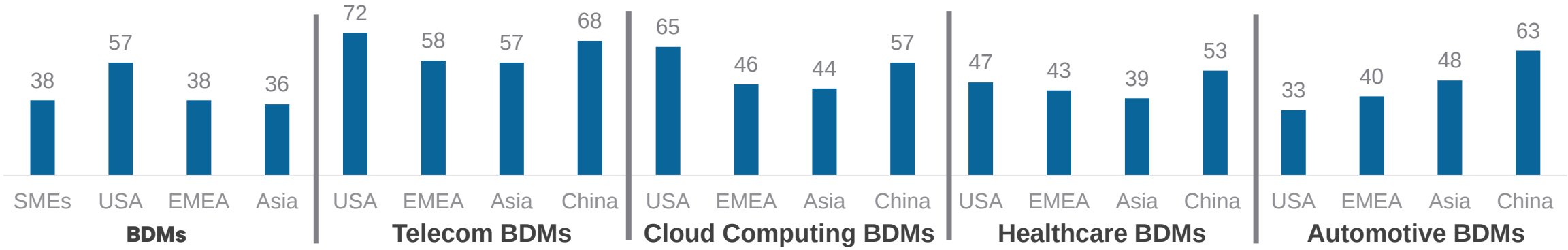
How much of an impact has 4G/LTE had on… How much of an impact do you expect 5G will have on…	…your business?		…the development of new products, services, and innovations in your country?		…the economy in your country?		…your life?			
Showing 'all' data point per audience	BDMs + Verticals		Tech Innovators		Opinion Leaders		Broad Elites		Tech Enthusiasts	
	4G/LTE	5G	4G/LTE	5G	4G/LTE	5G	4G/LTE	5G	4G/LTE	5G
A great deal	37	47	47	47	44	56	32	37	41	52
Somewhat	40	38	40	42	47	40	45	51	45	41
Not that much	14	9	9	8	8	4	16	10	10	6
Not at all	3	2	4	1	1	0	2	1	2	0

Q4GImpact1. How much of an impact has 4G/LTE had on your business?/Q5GImpact1: How much of an impact do you expect 5G will have on your business? (BDMs + Vertical BDMs)
Q4GImpact2. How much has 4G/LTE had on the development of new products, services, and innovations in your country?/Q5GImpact3: How much of an impact do you expect 5G will have on the development of new products, services, and innovations in your country? (Tech Innovators)
Q4GImpact3: How much has 4G/LTE had on the economy in your country?/Q5GImpact2: How much of an impact do you expect 5G will have on the economy in your country? (Opinion Leaders)
Q4GImpact4. How much has 4G/LTE had on your life?/Q5GImpact4: How much of an impact do you expect 5G will have on your life? (Elites, Tech Enthusiasts)
Not showing "Not applicable " answer choice
(BDMs + Verticals n=1559), (Tech Innovators n=602), (Opinion Leaders n=225), (Broad Elites n =600), (Tech Enthusiasts n=602)

1 Telecom and Cloud Computing BDMs expect 5G to impact their business ‘a great deal’ – especially in the US and China

- More than 1 in 3 Healthcare and Automotive BDMs report 5G will impact their business ‘a great deal’

How much of an impact do you expect 5G will have on your business?
% ‘A great deal’



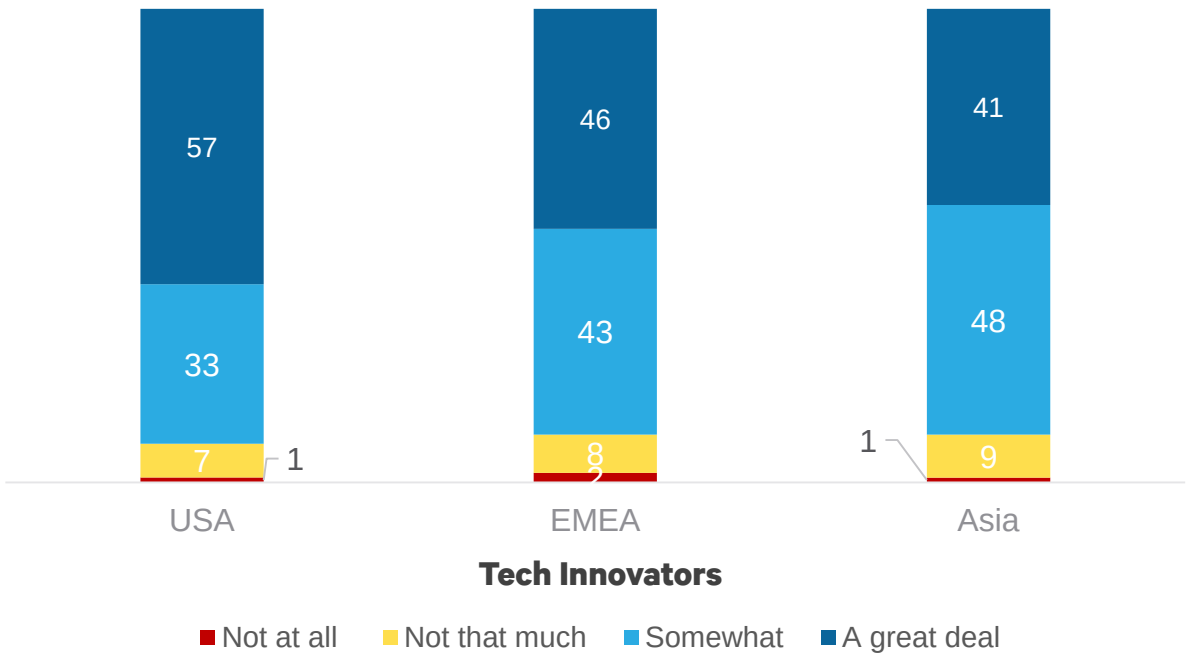
	BDMs																			
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
A great deal	38	57	38	36	72	58	57	68	65	46	44	57	47	43	39	53	33	40	48	63
Somewhat	43	23	41	45	25	32	39	31	28	41	48	43	35	37	40	44	42	43	37	36
Not that much	11	13	11	13	3	9	4	1	3	11	5	0	15	8	9	0	17	9	9	1
Not at all	3	1	4	2	0	1	0	0	1	3	1	0	1	3	5	1	3	4	1	0
Not applicable-I don’t expect my business will use 5G	5	6	6	4	0	0	0	0	3	0	1	0	3	9	7	1	5	4	4	0

Q5GImpact1. How much of an impact do you expect 5G will have on your business?
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75),

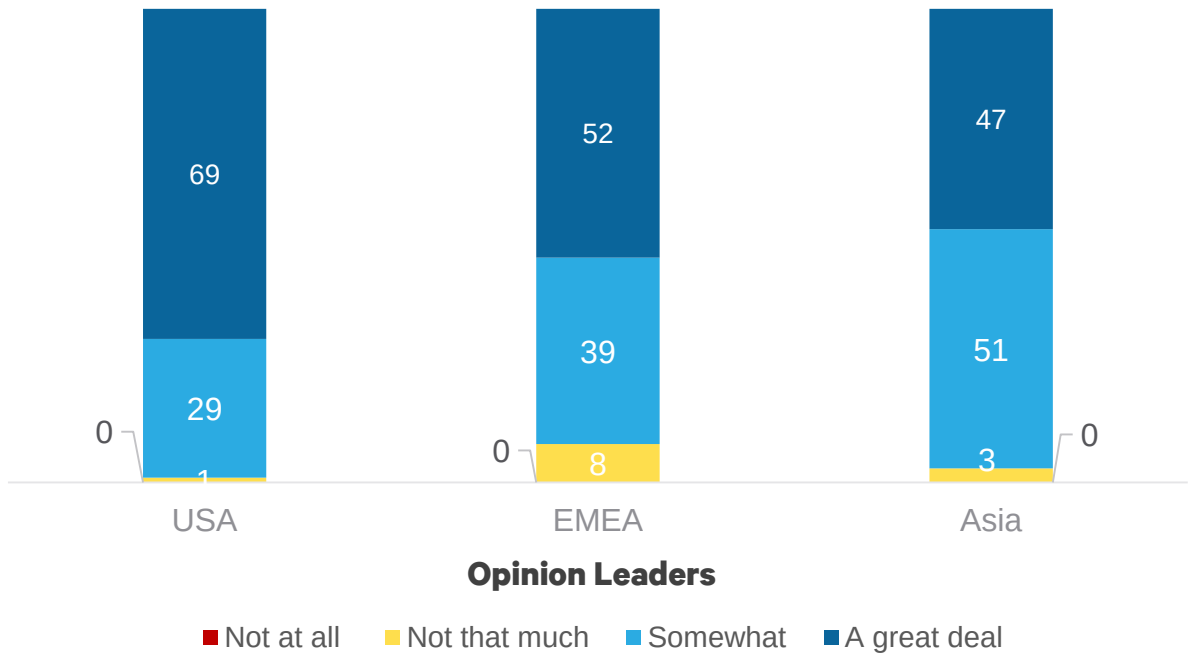
1 Tech Innovators and Opinion Leaders expect 5G to have ‘a great deal’ of impact on the economy in their country and on the development of new products and services

- US respondents are especially likely to feel this way

How much of an impact do you expect 5G will have on the development of new products, services, and innovations in your country?



How much of an impact do you expect 5G will have on the economy in your country?

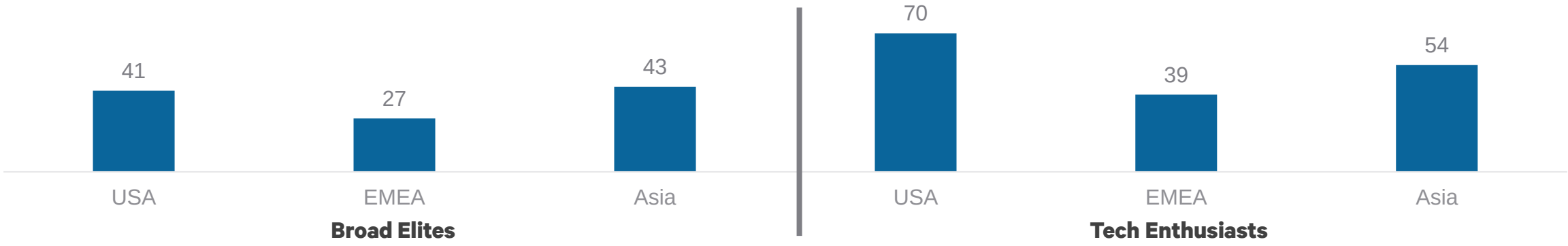


Q5GImpact3: How much of an impact do you expect 5G will have on the development of new products, services, and innovations in your country? Not showing “Not applicable - I don't expect my country will use 5G” (Tech Innovators)
Q5GImpact2: How much of an impact do you expect 5G will have on the economy in your country? Not showing “Not applicable - I don't expect my country will use 5G” (Opinion Leaders)
Tech Innovators (US n=150, EMEA n=227, Asia n=225) Opinion Leaders (US n=75, EMEA n=75, Asia n=75)

1 Tech Enthusiasts are more likely to say 5G will impact their life ‘a great deal’ in comparison to Elites – particularly those in the US

- Roughly half of Asian Elites and Tech Enthusiasts believe 5G will greatly impact their lives

How much of an impact do you expect 5G will have on your life?
% ‘A great deal’

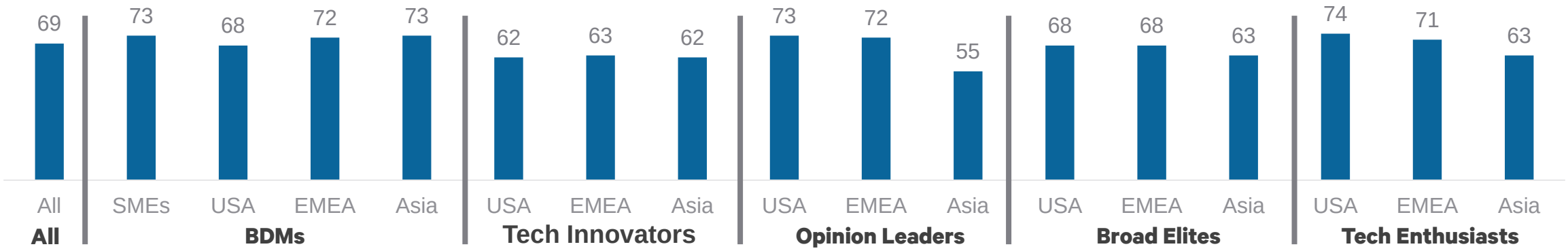


	Broad Elites			Tech Enthusiasts		
	USA	EMEA	Asia	USA	EMEA	Asia
A great deal	41	27	43	70	39	54
Somewhat	46	57	48	26	49	44
Not that much	10	13	7	3	12	2
Not at all	1	2	0	0	0	0

Q5GImpact4: How much of an impact do you expect 5G will have on your life? Not showing “Not applicable - I don't expect I will use 5G”
Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

1 Respondents across audiences believe 5G will have widespread benefits for society and the economy, not just consumers

Which of the following is closer to your view?
% '5G will have widespread benefits for society and the economy, not just consumers'



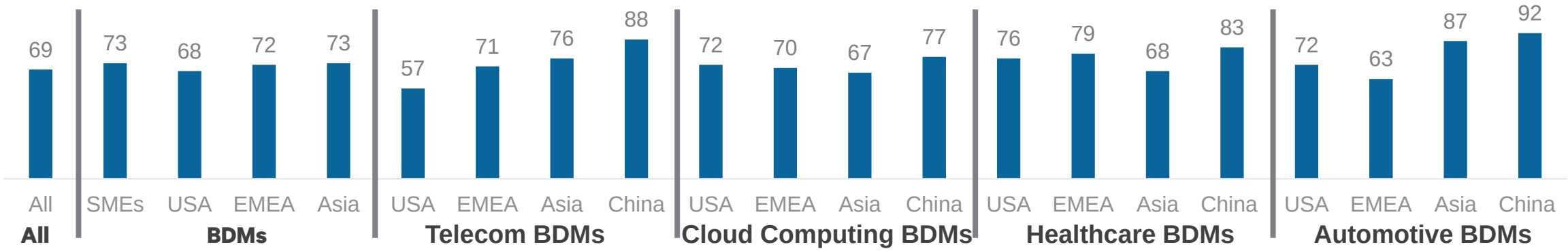
	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
5G will primarily benefit consumers	31	27	32	28	27	38	37	38	27	28	45	32	32	37	26	29	37
5G will have widespread benefits for society and the economy, not just consumers	69	73	68	72	73	62	63	62	73	72	55	68	68	63	74	71	63

Q48: Which of the following is closer to your view?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

1 More than 2 in 3 BDMs across industries say 5G will have widespread benefits for society and the economy, not just consumers

- In particular, roughly 8 in 10 Asian Telecom and Automotive BDMs feel this way
- 43% of US Telecom BDMs say 5G will primarily benefit consumers

Which of the following is closer to your view?
% '5G will have widespread benefits for society and the economy, not just consumers'



	All	BDMs																			
		BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
5G will primarily benefit consumers	31	27	32	28	27	43	29	24	12	28	30	33	23	24	21	32	17	28	37	13	8
5G will have widespread benefits for society and the economy, not just consumers	69	73	68	72	73	57	71	76	88	72	70	67	77	76	79	68	83	72	63	87	92

Q48: Which of the following is closer to your view?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

2 BDMs believe the most important improvements for 5G to deliver on are faster internet speeds and increased operational efficiency

- Increased productivity is also a key improvement; among Telecom and Cloud Computing BDMs improved reliability in crowded areas is important

Thinking about your company, which of the following is the most important improvement for 5G to deliver compared to existing technologies?
Up to 3 responses permitted, Ranked by BDM All SMEs

	BDMs																			
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Increase internet speeds (i.e. downloads or streaming)	45	49	39	50	39	38	45	44	41	51	45	33	51	43	45	47	43	43	45	41
Increase operational efficiency	31	31	30	38	25	29	31	31	32	29	32	33	37	24	48	33	24	29	52	51
Increase coverage in more areas	29	26	34	24	32	22	19	23	19	33	25	27	23	32	16	25	26	31	16	23
Increase productivity	27	41	29	26	41	18	31	27	31	37	25	31	31	16	19	24	25	28	27	29
Improve reliability in high-traffic areas	23	18	24	23	32	28	31	31	28	33	39	31	28	24	23	23	17	24	17	20
Enhance cybersecurity protections	21	19	24	24	17	21	25	28	20	13	19	32	24	20	27	32	16	16	29	31
Decrease data prices	21	17	20	18	15	20	29	31	20	21	20	24	17	24	19	17	21	33	28	28
Improve battery life	20	19	19	14	21	21	15	19	21	24	17	15	21	16	15	13	20	27	20	17
Ability to connect more devices	19	17	19	20	27	28	20	25	27	16	23	28	13	24	20	39	33	13	25	24
Access to new applications and services (i.e. streaming, video chats, or ride hailing)	15	12	15	16	19	28	21	17	21	17	17	25	16	12	15	15	13	16	13	19
Better ability to connect with others	15	21	16	12	25	13	13	15	23	9	13	16	19	20	7	19	17	17	9	12

Q5GImprove1: Thinking about your company, which of the following is the most important improvement for 5G to deliver compared to existing technologies? Select up to 3 choices. Omitting "Other" and "None of the above"
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

2 Tech Innovators say faster speeds is the most important improvement for 5G to deliver

- Improved reliability in high-traffic areas is also important across audiences; US and EMEA respondents also prioritize coverage, while Asian Tech Innovators look forward to decreased data prices

Thinking about products/services that you develop or manage, which of the following is the most important improvement for 5G to deliver compared to existing technologies?
Up to 3 responses permitted, Ranked by USA Tech Innovators

	Tech Innovators		
	USA	EMEA	Asia
Increase internet speeds (i.e. downloads or streaming)	49	56	55
Improve reliability in high-traffic areas	28	31	34
Increase coverage in more areas	27	33	26
Decrease data prices	25	21	29
Increase operational efficiency	25	26	27
Increase productivity	23	21	16
Ability to connect more devices	19	19	22
Access to new applications and services (i.e. streaming, video chats, or ride hailing)	19	17	16
Improve battery life	19	21	17
Enhance cybersecurity protections	18	17	19
Better ability to connect with others	16	15	7

Q5GImprove2: Thinking about products/services that you develop or manage, which of the following is the most important improvement for 5G to deliver compared to existing technologies? Select up to 3 choices. Omitting "Other" and "None of the above"
Tech Innovators (US n=150, EMEA n=227, Asia n=225)

Top 3 options per audience

2 More than half of Opinion Leaders and consumer audiences say increased internet speeds are the most important improvement for 5G to deliver

- 1 in 3 Tech Enthusiasts believe increased coverage is a critical improvement of 5G

Which of the following is the most important improvement for 5G to deliver?
Up to 3 responses permitted, Ranked by USA Opinion Leaders

	Opinion Leaders			Broad Elites			Tech Enthusiasts		
	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Increase internet speeds (i.e. downloads or streaming)	52	55	55	59	57	58	52	58	59
Increase productivity	39	29	25	29	21	21	25	22	17
Increase coverage in more areas	35	27	21	24	36	24	32	35	30
Enhance cybersecurity protections	29	20	23	29	20	26	18	17	23
Increase operational efficiency	29	25	28	27	24	32	26	23	38
Ability to connect more devices	23	28	21	17	17	17	24	20	18
Improve reliability in high-traffic areas	21	29	25	28	27	31	21	30	28
Decrease data prices	19	13	16	25	26	28	26	24	25
Improve battery life	16	24	25	22	23	23	28	23	20
Better ability to connect with others	16	21	5	15	16	8	24	16	11
Access to new applications and services (i.e. streaming, video chats, or ride hailing)	15	9	27	16	17	13	15	18	19

Q5GImprove3: Which of the following is the most important improvement for 5G to deliver? Select up to 3 choices. Omitting “Other” and “None of the above”
Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

2 BDMs across industries say increased efficiency and productivity are the most important benefit of 5G

- 1 in 2 US and EMEA Healthcare BDMs also look to securing confidential patient information; more than half of US Healthcare BDMs prioritize improved patient experience as well

Thinking about your industry, which of the following are the most important benefits enabled by 5G technologies? *Multiple responses permitted, Ranked by BDM All SMEs*

BDMs	BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
General Benefits																				
Increase efficiency or productivity	55	69	64	63	65	49	40	44	60	61	49	59	64	57	55	59	59	47	41	41
Enhance security measures	39	44	43	43	41	37	35	36	35	37	24	36	49	44	41	47	37	29	35	39
Decrease costs	38	45	42	44	32	32	35	36	45	36	27	23	40	40	31	32	38	32	41	45
Improve user experience/satisfaction	33	51	39	39	48	30	40	40	52	39	37	47	-	-	-	-	33	25	45	52
Enable new products or services that have not been invented yet	33	41	38	26	45	43	37	35	25	39	36	33	37	31	25	31	30	25	29	32
Better product offerings	22	32	29	25	29	28	32	35	37	30	23	36	-	-	-	-	22	19	29	40
Improve training quality	21	27	14	18	29	24	28	32	37	12	21	43	25	21	19	41	11	17	27	37
Telecom/Cloud Computing Benefits																				
Leverage current investments in 4G/LTE networks	-	-	-	-	41	33	39	47	-	-	-	-	-	-	-	-	-	-	-	-
Allow for use of new networks/spectrum	-	-	-	-	31	25	31	35	39	34	37	36	-	-	-	-	-	-	-	-
Expand public sector business through smart cities	-	-	-	-	29	24	35	44	-	-	-	-	-	-	-	-	-	-	-	-
Increase redundancies	-	-	-	-	-	-	-	-	17	14	13	15	-	-	-	-	-	-	-	-
Increase cloud capabilities	-	-	-	-	-	-	-	-	44	37	33	28	-	-	-	-	-	-	-	-
Allow for more efficient server farms and data centers	-	-	-	-	-	-	-	-	28	24	31	45	-	-	-	-	-	-	-	-
Healthcare Benefits																				
Improve patient experience	-	-	-	-	-	-	-	-	-	-	-	-	55	32	28	39	-	-	-	-
Secure access to confidential patient information from any location	-	-	-	-	-	-	-	-	-	-	-	-	51	56	36	35	-	-	-	-
Allow for more accurate diagnoses	-	-	-	-	-	-	-	-	-	-	-	-	31	20	39	49	-	-	-	-
Contribute to the development of new treatments and cures	-	-	-	-	-	-	-	-	-	-	-	-	27	24	35	45	-	-	-	-
Reduce length or number of hospital stays	-	-	-	-	-	-	-	-	-	-	-	-	17	20	19	32	-	-	-	-
Automotive Benefits																				
Integrated GPS and instant mapping updates	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	21	21	24
More efficient manufacturing and production	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	28	37	44
Enable development and adoption of autonomous vehicles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	23	35	36
Instant emergency alerts	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	17	25	31
Reduce collisions and traffic accidents	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	16	28	37
Reduce traffic congestion through smart cities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	15	24	31

Q13: Thinking about your industry, which of the following are the most important benefits enabled by 5G technologies? Multiple responses permitted. Omitting "other" and "none of the above"
All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

2 When it comes to 5G capabilities, respondents express the most interest in dramatically faster download and upload speeds, autonomous vehicles, smart homes, and enhanced communications

Which of the following capabilities that will be possible under 5G, but are not available with current technologies, are you most interested in? *Up to 3 responses permitted, Ranked by All*

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Dramatically faster download and upload speeds	42	41	47	49	42	48	46	36	47	52	32	52	44	38	48	53	41
Fully autonomous vehicles	29	26	18	21	31	24	27	36	23	21	32	25	28	44	24	28	41
Smart homes	27	24	25	24	17	24	33	23	31	27	25	29	33	31	30	35	28
Enhanced communications	25	26	30	37	20	19	27	16	27	29	17	27	33	17	26	31	12
Artificial intelligence / Machine Learning	23	19	12	21	22	24	24	28	29	17	27	21	18	29	21	21	28
Remote healthcare	22	25	18	16	21	9	17	23	28	27	21	19	27	23	22	19	17
Smart cities with millions of connected sensors	21	18	22	17	16	19	20	20	35	23	37	25	20	20	23	22	23
Immersive virtual reality experiences	20	19	19	19	20	22	21	20	15	17	21	22	17	19	25	19	27
Enable new products or services that have not been invented yet	18	20	31	14	18	23	14	17	16	20	12	24	12	14	24	19	15
Monitoring of remote utilities and critical infrastructure	17	18	21	20	20	15	16	13	20	13	17	12	11	13	18	12	18
Tactile internet	15	16	9	13	17	13	9	18	11	13	12	10	13	17	17	13	21
Commercial drones	12	11	7	12	12	10	15	14	7	15	9	8	8	12	13	9	12

Q14: Which of the following capabilities that will be possible under 5G, but are not available with current technologies, are you most interested in? Select up to 3 choices. Omitting "other" and "none of the above." Answer choices abbreviated.
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

2 BDMs find faster download and upload speeds the most interesting of 5G capabilities, followed by enhanced communication

- Auto BDMs are also excited about fully autonomous vehicles, while Healthcare BDMs are interested in remote healthcare

Which of the following capabilities that will be possible under 5G, but are not available with current technologies, are you most interested in? *Up to 3 responses permitted, Ranked by All*

	All	BDMs																		
		BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Dramatically faster download and upload speeds	42	41	47	49	42	39	30	24	23	40	45	43	37	37	47	31	23	49	39	27	24
Fully autonomous vehicles	29	26	18	21	31	24	20	35	37	24	16	27	17	21	24	19	28	34	31	48	45
Smart homes	27	24	25	24	17	21	16	36	33	20	30	32	25	25	23	15	21	21	32	20	25
Enhanced communications	25	26	30	37	20	37	29	17	19	25	39	15	19	35	32	8	21	25	31	15	20
Artificial intelligence / Machine Learning	23	19	12	21	22	21	20	29	21	19	22	24	25	23	17	28	20	12	17	24	17
Remote healthcare	22	25	18	16	21	20	26	35	39	17	17	24	23	41	41	53	52	12	23	29	35
Smart cities with millions of connected sensors	21	18	22	17	16	25	24	24	28	23	26	19	25	13	15	15	16	16	17	23	27
Immersive virtual reality experiences	20	19	19	19	20	21	13	17	25	20	26	21	28	9	12	21	27	16	16	32	31
Enable new products or services that have not been invented yet	18	20	31	14	18	24	24	9	8	25	16	15	8	31	17	16	15	25	24	9	12
Monitoring of remote utilities and critical infrastructure	17	18	21	20	20	25	21	13	20	40	16	16	37	15	12	17	23	20	15	17	20
Tactile internet	15	16	9	13	17	17	22	20	19	17	14	16	32	9	5	23	29	8	19	24	28
Commercial drones	12	11	7	12	12	12	18	24	21	11	9	16	17	7	9	7	8	12	11	12	11

Q14: Which of the following capabilities that will be possible under 5G, but are not available with current technologies, are you most interested in? Select up to 3 choices. Omitting "other" and "none of the above." Answer choices abbreviated.
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

2 Increased upload and download speeds, access to the 5G network, and improved battery life are most likely motivate respondents to upgrade their current mobile phone to a newer 5G device

- Roughly 1 in 5 Asian Opinion Leaders, Tech Enthusiasts, and Tech Innovators also find virtual reality to be a motivating feature; while 1 in 4 EMEA respondents say increased coverage would make them upgrade their device to a 5G-compatible device

Which of the following features, if any, would most likely motivate you to replace/upgrade your current mobile phone with a newer device enabled by 5G? *Up to 3 responses permitted, Ranked by All*

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Increased upload and download speeds	30	30	27	32	33	29	29	36	33	35	27	31	32	33	32	35	32
Allows me to connect to the 5G network	25	22	28	26	23	28	22	24	32	20	24	20	22	22	30	33	31
Improved battery life	24	22	19	28	18	31	31	17	20	28	27	31	32	24	34	29	17
Decreased costs	23	24	27	22	19	25	25	16	32	17	17	39	28	22	30	22	16
Increased reliability	21	24	23	23	23	18	18	17	21	20	9	25	20	24	25	15	16
Increased coverage	21	21	24	29	15	25	26	10	24	23	11	21	30	16	21	31	18
Increased privacy protections	15	14	14	15	12	16	12	13	17	13	9	15	19	19	13	13	12
Better real time streaming	13	11	11	12	13	16	13	16	11	12	23	17	11	16	13	13	16
Support for virtual reality	13	13	5	10	17	9	9	17	5	13	20	7	6	16	11	8	24
Ability to control appliances in my smart home	13	10	11	8	13	3	10	16	17	12	20	8	13	23	7	17	22
Improved operating system	13	14	15	12	9	9	14	8	23	3	9	18	13	6	18	14	12
More memory storage	11	11	14	9	16	7	11	11	23	8	4	6	9	8	12	8	11
Better screen resolution/quality	9	8	9	9	8	5	7	10	5	15	15	4	5	11	9	9	10
Ability to communicate with and control my wearable devices	9	10	7	6	12	8	7	19	4	8	15	8	4	13	3	7	8
Better compatibility with other devices	9	10	9	9	14	7	11	10	5	13	9	7	11	9	9	7	12
Live streaming	9	9	8	7	7	11	9	7	9	4	15	10	8	7	13	4	11
Support for augmented reality	8	8	5	5	11	6	7	10	7	7	17	5	4	10	3	6	12
Higher quality camera	7	9	13	9	7	8	5	5	4	8	7	3	8	5	5	10	4
Device look and feel	5	5	7	3	4	5	2	4	0	5	5	2	5	4	7	4	4

Q15: Which of the following features, if any, would most likely motivate you to replace/upgrade your current mobile phone with a newer device enabled by 5G? Select up to 3 choices.
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

2 BDMs say access to the 5G network, increased upload and download speeds, and increased reliability are the most appealing reasons to switch to a 5G device

Which of the following features, if any, would most likely motivate you to replace/upgrade your current mobile phone with a newer device enabled by 5G? *Up to 3 responses permitted, Ranked by All*

	All	BDMs																		
		BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Increased upload and download speeds	30	30	30	27	32	33	35	18	17	16	36	38	27	27	32	35	13	24	28	16	25	24
Allows me to connect to the 5G network	25	22	22	28	26	23	32	26	23	21	39	26	24	19	17	19	13	17	18	25	23	25
Improved battery life	24	22	22	19	28	18	8	21	13	12	16	33	13	13	31	19	13	7	29	29	12	8
Decreased costs	23	24	24	27	22	19	24	16	24	25	20	21	16	12	35	27	17	11	43	29	20	15
Increased reliability	21	24	24	23	23	23	29	18	15	19	23	24	24	32	31	29	24	35	22	16	19	21
Increased coverage	21	21	21	24	29	15	24	17	17	19	15	29	11	13	27	33	15	15	24	28	20	19
Increased privacy protections	15	14	14	14	15	12	15	21	23	29	11	12	12	21	15	15	15	9	12	15	19	19
Better real time streaming	13	11	11	11	12	13	19	8	13	12	16	9	20	15	13	9	13	13	5	9	8	8
Support for virtual reality	13	13	13	5	10	17	15	12	16	15	5	13	20	19	9	5	21	21	11	11	19	20
Ability to control appliances in my smart home	13	10	10	11	8	13	7	11	17	19	12	8	16	15	1	12	9	11	4	17	12	13
Improved operating system	13	14	14	15	12	9	17	21	8	8	19	13	12	17	23	12	12	16	14	20	12	11
More memory storage	11	11	11	14	9	16	11	9	16	16	16	8	13	17	11	11	11	8	11	12	9	8
Better screen resolution/quality	9	8	8	9	9	8	13	14	15	17	15	5	13	12	4	3	16	13	4	3	12	12
Ability to communicate with and control my wearable devices	9	10	10	7	6	12	5	11	21	15	4	9	20	17	7	7	19	17	5	3	13	17
Better compatibility with other devices	9	10	10	9	9	14	11	11	5	5	13	11	8	4	8	9	8	8	7	9	12	12
Live streaming	9	9	9	8	7	7	15	11	15	12	9	7	9	12	5	5	13	16	9	19	12	19
Support for augmented reality	8	8	8	5	5	11	9	8	16	13	9	9	12	12	1	1	16	28	0	8	13	19
Higher quality camera	7	9	9	13	9	7	8	4	11	17	7	8	3	7	11	8	11	13	5	8	13	12
Device look and feel	5	5	5	7	3	4	3	9	5	8	5	3	1	13	3	3	4	7	3	5	11	12

Q15: Which of the following features, if any, would most likely motivate you to replace/upgrade your current mobile phone with a newer device enabled by 5G? Select up to 3 choices. Omitting "Other" and "None of the above"
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

2 Cybersecurity protections and extreme data speeds are the top benefits of 5G

- US and Asian Elites and US Tech Enthusiasts also point to ultra-high reliability
- EMEA respondents are looking for extended coverage

To what extent are each of the following benefits of 5G important to you?
% 'Very important'
Ranked by USA Broad Elites

	Broad Elites			Tech Enthusiasts		
	USA	EMEA	Asia	USA	EMEA	Asia
Strong security and enhanced protections for sensitive data	66	55	59	74	72	66
Ultra-high reliability	57	46	56	69	59	56
Extreme user mobility	55	45	49	64	53	58
Ultra-low energy consumption – certain types of sensors would have 10+ years of battery life without needing to be charged	53	41	46	63	56	50
Extreme data speeds	53	49	55	75	67	62
Extended coverage to reach challenging locations	51	53	40	67	62	48
Ultra-high density	45	44	41	56	53	50
Extreme capacity	40	32	39	56	35	44
Ultra-low latency to reduce the amount of time it takes devices to respond to each other	38	32	35	55	39	49
Unified connectivity	37	26	36	54	37	44

G16.mA: To what extent are each of the following benefits of 5G important to you? Answer choices abbreviated.
Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

2 Strong security and enhanced protections for sensitive data, ultra-high reliability, and extreme data speeds are top benefits for 5G to deliver

Thinking about your company, how important is it for 5G to deliver on each of the following?
% 'Very important'
Ranked by BDM All SMEs

	BDMs																			
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Strong security and enhanced protections for sensitive data	58	67	61	57	55	54	47	53	67	50	61	64	73	68	59	53	61	59	53	56
Ultra-high reliability	53	62	54	47	56	43	55	53	57	51	53	51	63	59	48	56	61	56	53	57
Extreme data speeds	52	62	52	47	64	42	51	56	71	43	55	59	53	53	51	57	62	47	49	51
Extreme user mobility	48	61	51	39	45	46	45	51	60	45	39	44	52	61	36	57	57	41	47	57
Extended coverage to reach challenging locations	46	51	53	31	55	47	47	55	60	49	41	33	49	51	35	47	53	61	47	51
Ultra-low energy consumption – certain types of sensors would have 10+ years of battery life without needing to be charged	45	61	51	37	48	41	45	55	56	50	41	48	44	49	40	45	54	44	43	47
Ultra-high density	42	54	48	35	51	50	47	52	56	47	45	48	39	45	29	44	53	41	36	45
Unified connectivity	36	43	42	32	43	43	43	47	51	30	32	63	37	41	35	47	49	28	37	43
Extreme capacity	36	49	35	29	41	42	45	45	55	34	36	41	44	44	39	52	38	31	31	33
Ultra-low latency to reduce the amount of time it takes devices to respond to each other	35	48	33	25	48	39	41	57	56	38	37	52	37	35	36	47	47	40	32	41
Ultra-low complexity	33	38	34	26	41	30	40	49	43	32	29	39	40	39	25	47	47	33	36	44

G16.mB: Thinking about your company, how important is it for 5G to deliver on each of the following? Answer choices abbreviated.
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75),

Top 3 options per audience

2 Tech Innovators say strong security for sensitive data is ‘very important’ for 5G to deliver for the products/services they develop or manage

- Roughly 1 in 2 also find extreme data speeds and ultra-high reliability very important
- Nearly 1 in 2 US and EMEA Tech Innovators also say extreme user mobility and extended coverage are important for 5G to deliver

Thinking about the products/services that you develop or manage how important is it for 5G to deliver on each of the following?
% ‘Very important’ *Ranked by USA Tech Innovators*

	Tech Innovators		
	USA	EMEA	Asia
Strong security and enhanced protections for sensitive data	65	57	48
Extreme data speeds	57	48	44
Ultra-high reliability	53	48	46
Ultra-high density	51	43	36
Ultra-low energy consumption – certain types of sensors would have 10+ years of battery life without needing to be charged	50	38	32
Extreme user mobility	49	48	39
Ultra-low latency to reduce the amount of time it takes devices to respond to each other	48	36	28
Extended coverage to reach challenging locations	46	49	34
Extreme capacity	44	30	29
Unified connectivity	41	32	30
Ultra-low complexity	30	28	25

G16.mC: Thinking about the products/services that you develop or manage how important is it for 5G to deliver on each of the following? Answer choices abbreviated.
Tech Innovators (US n=150, EMEA n=227, Asia n=225),

Top 3 options per audience

3 Respondents believe 5G will enable new products and services that have not been invented yet, increase productivity, and allow new industries to emerge

To what extent do you agree or disagree that innovations enabled by 5G will contribute to each of the following? Top 2 Box % 'Strongly agree or somewhat agree' *Ranked by All (Economic vs. Societal)*

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Economic Benefits																	
Enable new products, services, and use cases that have not been invented yet	91	89	93	86	89	94	89	90	96	85	87	92	92	90	97	87	94
Increase productivity	89	88	91	85	90	87	82	83	96	85	87	97	86	93	94	89	93
Allow for new industries to emerge	87	86	86	84	89	89	80	86	87	85	86	88	88	92	93	84	94
Make companies more globally competitive	85	84	87	84	87	78	76	75	93	80	85	87	82	90	91	83	90
Enable the development and growth of small businesses	82	84	86	84	84	82	71	77	92	77	79	86	82	78	92	82	85
Drive economic growth in my country	82	81	87	78	84	80	74	77	88	82	85	79	73	89	90	77	87
Improve operational cost efficiencies for your business	82	83	87	80	89	78	68	81	-	-	-	-	-	-	-	-	-
Create new jobs	80	79	80	74	82	76	78	78	80	64	82	81	74	88	87	73	82
Support economic growth in developing markets	78	77	80	76	76	79	69	66	90	73	67	81	75	74	89	76	77
Societal Benefits																	
Make the internet accessible to all	85	84	84	83	87	82	81	84	91	80	79	80	84	86	90	89	88
Increase access to education	83	83	88	79	78	79	74	77	89	81	73	85	81	80	93	83	89
Increase access to healthcare to more people in more places	79	79	76	71	80	75	67	76	78	83	79	74	74	85	87	76	87
Improve quality of healthcare and overall life expectancy	74	73	70	61	80	66	58	74	71	77	77	66	71	83	81	68	89
Improve quality of life in cities, including reducing traffic congestion and pollution	73	73	74	65	76	65	62	74	78	65	76	73	67	81	84	64	83
Improve safety/security from natural and man-made threats	73	77	76	68	80	66	52	73	75	68	83	74	61	78	82	62	85
Lower global energy use	70	69	70	66	72	66	56	68	63	62	75	69	67	76	75	68	77
Discover alternative energies	63	65	68	59	69	50	45	57	62	50	54	57	54	64	77	61	71
Increase efficiency of water supply	57	59	55	48	63	47	43	55	52	56	50	53	47	62	63	46	68
Slow climate change	48	49	38	44	54	39	32	47	42	37	40	39	42	53	50	40	58
Reduce world hunger	45	47	40	39	55	34	28	43	35	38	48	33	35	49	53	29	55

G27: To what extent do you agree or disagree that innovations enabled by 5G will contribute to each of the following? *Only asked among BDMs and Tech Innovators
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

INDUSTRY LEADERSHIP

Industry Leadership Key Findings

1. Audiences across markets say companies with past experience delivering wireless connectivity solutions and expertise in a variety of technologies are best equipped to be leaders in 5G

2. Respondents believe that 5G services will complement 4G/LTE capabilities as they are introduced, making the transition from 4G/LTE to 5G a seamless process for both consumers and businesses

3. Consumer audiences and BDMs agree that 5G will first be adopted by countries, then by individuals, and then by companies; respondents generally feel that the US and their own country will benefit the most from 5G, but also say that a wide range of industries will also benefit, including healthcare and telecommunications

Key differences across audiences: Industry Leadership

- To become a leader in 5G, Opinion Leaders in the US and EMEA say **strengthening cybersecurity and data privacy protections** should be a top priority
  - Nearly half of Opinion leaders in EMEA and Asia prioritize increasing investments in R&D (compared with 1 in 4 in the US)
  - Asian Opinion Leaders also emphasize collaborating with companies outside the tech sector
- Respondents in EMEA and Asia are especially likely to feel companies who are **leaders in 4G/LTE, Wi-Fi, and 3G will leverage their success in the development and adoption of 5G**
- Tech Innovators are less likely than other audiences to feel 5G is a **revolutionary improvement over 4G**, with 2 in 3 EMEA Tech Innovators saying it is an **incremental change**
- Asian respondents are especially likely to feel 5G will be a **seamless transition for consumers and businesses**, followed by US respondents. EMEA respondents (especially BDMs) are less likely to feel this way
- Chinese BDMs are the most likely to say **5G is worth paying more for**
- US respondents are the most likely to think their country and their company will **adopt 5G within 3 years**
  - Tech Enthusiasts are most likely to say they will personally adopt 5G within 3 years
- Asian BDMs across verticals are most likely to feel 5G will have **widespread benefits beyond the tech sector**
- **Healthcare** and **telecommunications** rise to the top across BDMs as main beneficiaries of 5G
  - 1 in 3 Tech Innovators also believe the cloud computing industry will see major benefits from 5G
  - In particular, roughly half of EMEA and Asia and 2 in 3 US Healthcare BDMs believe the healthcare industry will benefit most
  - More than half of EMEA and Asian Cloud Computing BDMs feel the cloud computing industry will benefit the most
  - Roughly 1 in 3 US and EMEA – and half of Asia and China – Auto BDMs say the auto industry will benefit most

1 Respondents believe companies with past experience developing and delivering wireless connectivity solutions are best equipped to be leaders in 5G

- Respondents also say 5G leaders should be experts in a variety of technologies, including wireless service and connectivity

What type of company do you believe is most well-equipped to be a leader in the development and adoption of 5g? *Up to 3 responses permitted, Ranked by All*

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
A company that has delivered 3G, 4G/LTE, and Wi-Fi solutions on a global scale	49	49	51	54	50	45	42	42	51	48	44	57	50	55	61	54	51
A company that has been involved in researching and developing 4G/LTE, Wi-Fi and 3G	44	43	48	38	43	52	41	45	44	33	52	47	46	44	47	44	49
A company that is an expert in a variety of technologies, including wireless service and connectivity	36	36	37	28	34	32	25	47	49	33	35	46	29	36	38	35	37
A company that is able to provide devices that are compatible with past, present and future networks	32	32	32	31	32	28	30	25	40	32	25	36	33	36	36	31	35
A company that invests heavily in research and development	31	29	33	30	29	23	33	32	36	37	40	30	34	28	29	36	31
A company that is involved in the global standards-setting process	22	19	14	17	31	23	17	24	29	20	24	18	16	27	19	15	29
A company that exclusively works on wireless service and connectivity	20	23	26	22	19	19	22	19	20	19	12	18	13	16	15	16	23
A start-up company	13	15	15	15	12	15	14	8	9	17	17	7	13	11	13	15	11

Q106: What type of company do you believe is most well-equipped to be a leader in the development and adoption of 5g? Omitting “other” and “none of the above”
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

1 BDMs across verticals believe companies with past experience developing and delivering wireless connectivity solutions are best equipped to be leaders in 5G

- 51% of US Cloud Computing BDMs say the company should be an expert in a variety of technologies, including wireless service
- Roughly 1 in 3 BDMs believe 5G leaders need to provide devices that are compatible with past, present, and future networks

What type of company do you believe is most well-equipped to be a leader in the development and adoption of 5g? *Up to 3 responses permitted, Ranked by All*

	All	BDMs																		
		BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
A company that has delivered 3G, 4G/LTE, and Wi-Fi solutions on a global scale	49	49	51	54	50	61	47	41	39	53	42	52	47	47	44	55	48	42	44	41	43
A company that has been involved in researching and developing 4G/LTE, Wi-Fi and 3G	44	43	48	38	43	44	38	37	36	49	43	48	48	36	32	43	43	43	33	43	44
A company that is an expert in a variety of technologies, including wireless service and connectivity	36	36	37	28	34	39	29	41	39	51	26	45	40	37	25	45	44	39	31	31	37
A company that is able to provide devices that are compatible with past, present and future networks	32	32	32	31	32	21	32	32	35	36	36	37	51	32	35	19	21	26	36	29	39
A company that invests heavily in research and development	31	29	33	30	29	36	28	21	23	32	36	20	28	39	27	20	32	25	29	32	32
A company that is involved in the global standards-setting process	22	19	14	17	31	21	20	32	35	16	26	28	28	17	17	28	32	16	16	25	29
A company that exclusively works on wireless service and connectivity	20	23	26	22	19	24	17	29	31	21	25	27	35	19	33	17	29	29	25	27	29
A start-up company	13	15	15	15	12	15	12	25	31	11	14	7	15	8	9	19	29	11	21	23	27

Q106: What type of company do you believe is most well-equipped to be a leader in the development and adoption of 5g? Omitting "other" and "none of the above"
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

1 To become a leader in 5G, Opinion Leaders in the US and EMEA say strengthening cybersecurity and data privacy protections should be top priorities

- Nearly half of Opinion leaders in EMEA and Asia prioritize increasing investments in R&D

Which of the following should be priorities for technology companies if they want to be considered leaders in 5G? *Up to 3 responses permitted, Ranked by USA Opinion Leaders*

	Opinion Leaders		
	USA	EMEA	Asia
Strengthening cybersecurity protections for their products	43	44	21
Collaborating with other technology companies	37	28	21
Strengthening data privacy protections for their products	33	29	17
Getting involved in the standard-setting process	31	24	32
Increasing investments in R&D	27	44	44
Developing expertise and assets in 4G/LTE and Wi-Fi	25	19	24
Collaborating with companies outside of the technology industry	23	11	29
Ensuring intellectual property rights are protected	21	23	25
Collaborating with governments around the world	20	16	17
Increasing diversity in their workforce (i.e. hiring women and minorities)	16	11	12
Hiring new employees in offices around the world	11	16	4

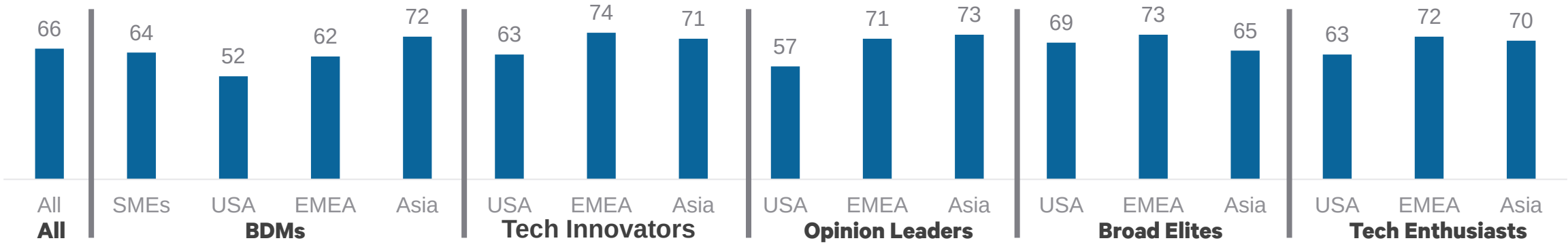
Q105: Which of the following should be priorities for technology companies if they want to be considered leaders in 5G? Omitting “other” and “none of the above”
Opinion Leaders (US n=75, EMEA n=75, Asia n=75)

Top 3 options per audience

1 Majority of respondents say past leaders in wireless connectivity solutions will leverage their success in the development and adoption of 5G

- US BDMs are more divided

Which of the following is closer to your view?
% 'Companies that are leaders in 4G/LTE, Wi-Fi, and 3G will leverage their success in the development and adoption of 5G'



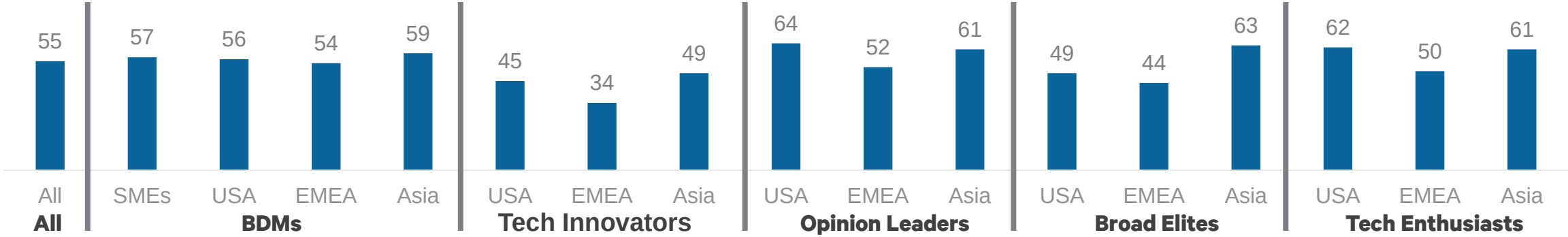
	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Companies that are leaders in 4G/LTE, Wi-Fi, and 3G will leverage their success in the development and adoption of 5G	66	64	52	62	72	63	74	71	57	71	73	69	73	65	63	72	70
Any company, regardless of their involvement in past generations of wireless technologies, can drive the development and adoption of 5G	34	36	48	38	28	37	26	29	43	29	27	31	27	35	37	28	30

Q54: Which of the following is closer to your view?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

2 A majority say 5G is a revolutionary improvement over 4G

- Tech Innovators are less likely to agree, with 2 in 3 EMEA Tech Innovators saying it is an incremental change

Which of the following is closer to your view?
% '5G is a revolutionary improvement over 4G and will dramatically change the way we live and work'



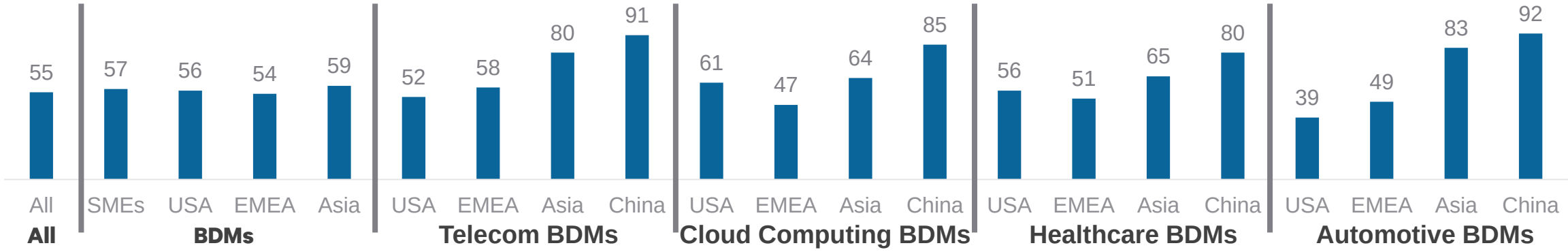
	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
5G is a revolutionary improvement over 4G and will dramatically change the way we live and work	55	57	56	54	59	45	34	49	64	52	61	49	44	63	62	50	61
5G is an incremental change over 4G	45	43	44	46	41	55	66	51	36	48	39	51	56	37	38	50	39

Q50: Which of the following is closer to your view?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

2 More than half of Telecom and Healthcare BDMs believe 5G is a revolutionary improvement over 4G

- Asian BDMs across industries are the most likely to say this while US Automotive BDMs are the least likely to say this

Which of the following is closer to your view?
% '5G is a revolutionary improvement over 4G and will dramatically change the way we live and work'

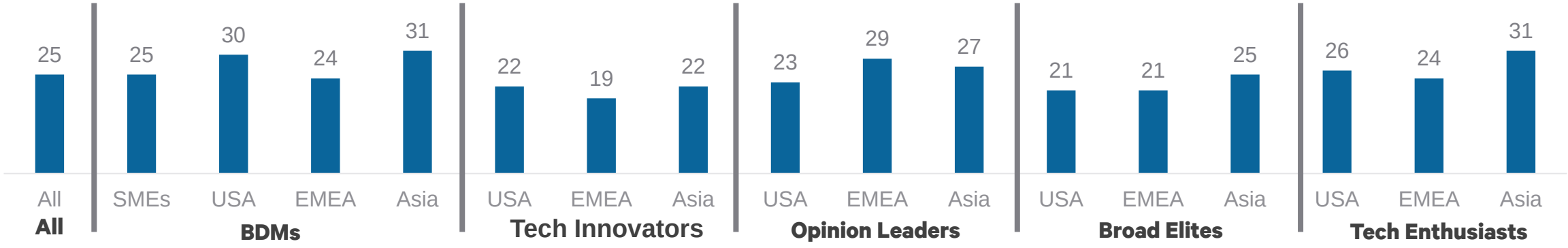


	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
5G is a revolutionary improvement over 4G and will dramatically change the way we live and work	55	57	56	54	59	52	58	80	91	61	47	64	85	56	51	65	80	39	49	83	92
5G is an incremental change over 4G	45	43	44	46	41	48	42	20	9	39	53	36	15	44	49	35	20	61	51	17	8

Q50: Which of the following is closer to your view?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

2 1 in 4 feel the transition from 4G to 5G is as revolutionary as the transition from typewriter to computer

Which of the following is closer to your view? The transition from 4G to 5G is more like…
% 'Typewriter to computer'

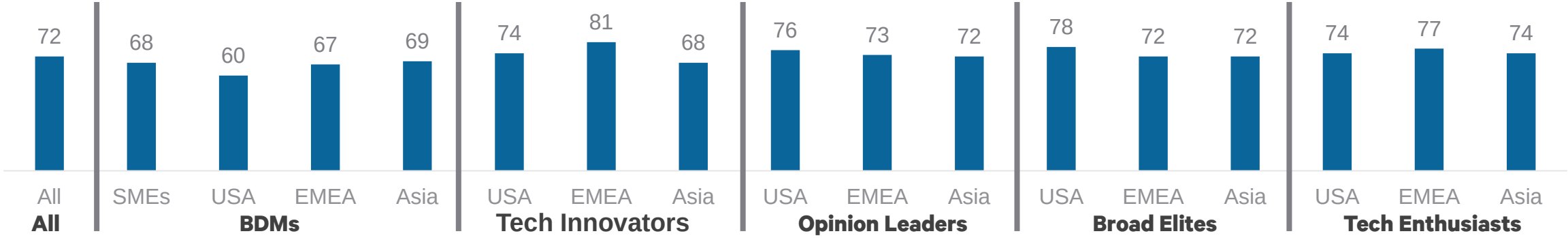


	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Standard definition TV to high definition TV	75	75	70	76	69	78	81	78	77	71	73	79	79	75	74	76	69
Typewriter to computer	25	25	30	24	31	22	19	22	23	29	27	21	21	25	26	24	31

Q51: Which of the following is closer to your view? The transition from 4G to 5G is more like...
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

2 More than 6 in 10 respondents across audiences say 5G services will complement 4G/LTE capabilities, delivering seamless and consistent experiences

Which of the following is closer to your view?
% 'As they are introduced, 5G services will complement 4G/LTE capabilities to deliver consistent and seamless experiences'



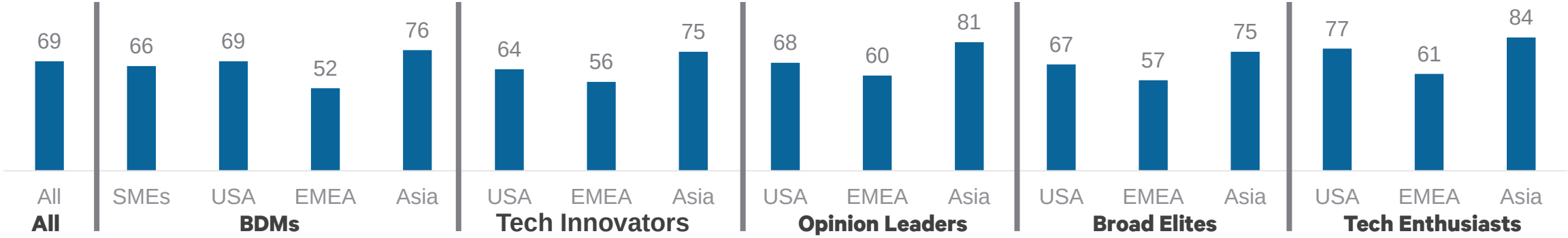
	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
As they are introduced, 5G services will complement 4G/LTE capabilities to deliver consistent and seamless experiences	72	68	60	67	69	74	81	68	76	73	72	78	72	72	74	77	74
5G services and capabilities will be fundamentally separate from 4G/LTE capabilities	28	32	40	33	31	26	19	32	24	27	28	22	28	28	26	23	26

Q53: Which of the following is closer to your view?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

2 A strong majority of respondents believe adopting 5G will be a seamless transition for consumers and businesses

- US and Asian respondents are more likely to feel this way in comparison to EMEA respondents

Which of the following is closer to your view?
% 'Adopting 5G will be a seamless transition for consumers and businesses'



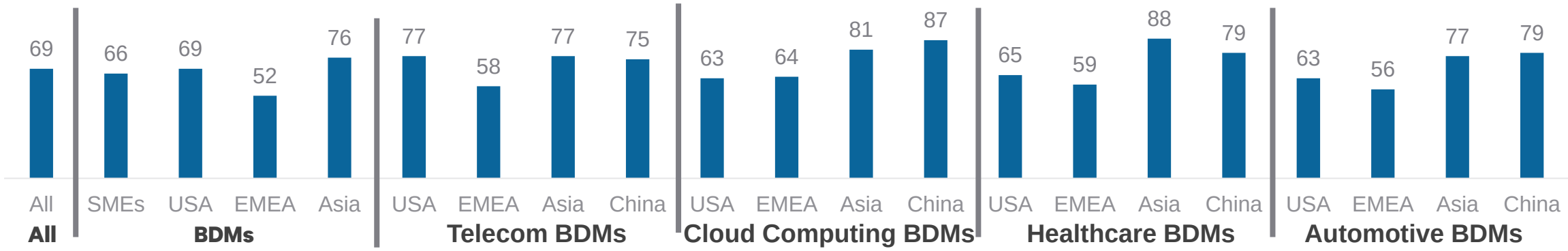
	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Adopting 5G will be a seamless transition for consumers and businesses	69	66	69	52	76	64	56	75	68	60	81	67	57	75	77	61	84
Adopting 5G will be a difficult transition for consumers	31	34	31	48	24	36	44	25	32	40	19	33	43	25	23	39	16

Q52: Which of the following is closer to your view? Adopting 5G will be…
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

2 BDMs across industries believe adopting 5G will be a seamless transition for consumers and businesses

- Healthcare BDMs in Asia are especially optimistic, with 88% saying it will be a seamless transition

Which of the following is closer to your view?
% 'Adopting 5G will be a seamless transition for consumers and businesses'

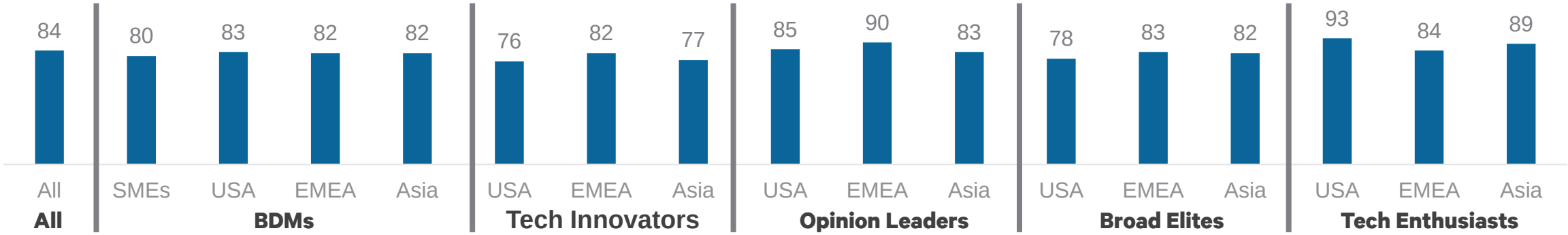


	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia		USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Adopting 5G will be a seamless transition for consumers and businesses	69	66	69	52	76		77	58	77	75	63	64	81	87	65	59	88	79	63	56	77	79
Adopting 5G will be a difficult transition for consumers	31	34	31	48	24		23	42	23	25	37	36	19	13	35	41	12	21	37	44	23	21

Q52: Which of the following is closer to your view? Adopting 5G will be…
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

3 More than 3 in 4 respondents see the value of 5G – especially Tech Enthusiasts

How strongly do you agree or disagree with the following statement?
Considering the widespread benefits that 5G is expected to provide, 5G is worth paying more for.
% 'Agree (Top 2 Box)'



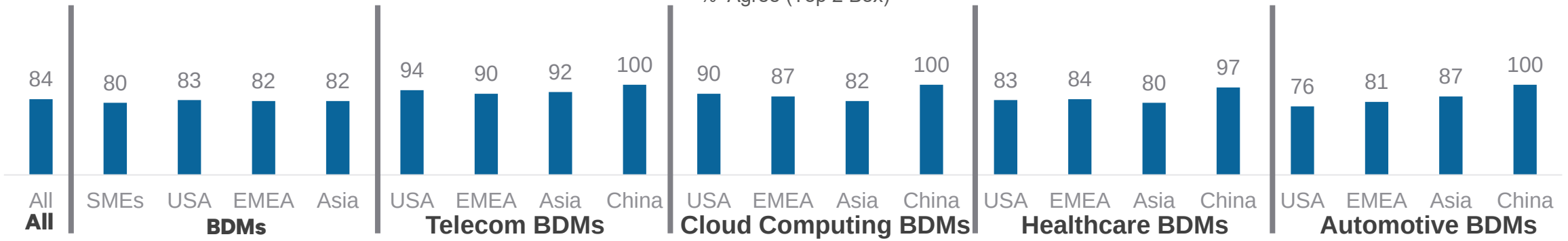
	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Agree (Top 2 box)	84	80	83	82	82	76	82	77	85	90	83	78	83	82	93	84	89
Disagree (Bottom 2 box)	16	20	17	19	18	23	18	23	15	11	17	22	17	18	6	16	11
Strongly agree	33	30	43	28	30	33	22	26	37	39	23	24	27	30	41	26	35
Somewhat agree	51	50	40	54	52	43	60	51	48	51	60	54	56	52	52	58	54
Somewhat disagree	12	14	11	12	14	17	14	18	12	8	16	17	12	17	5	13	10
Strongly disagree	4	6	6	7	4	6	4	5	3	3	1	5	5	1	1	3	1

Q107: How strongly do you agree or disagree with the following statement?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

3 BDMs across industries see the value in 5G – especially Telecom and Cloud Computing BDMs

- More than 9 in 10 Telecom BDMs say 5G is worth paying more for

How strongly do you agree or disagree with the following statement?
Considering the widespread benefits that 5G is expected to provide, 5G is worth paying more for.
% 'Agree (Top 2 Box)'



	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Agree (Top 2 box)	84	80	83	82	82	94	90	92	100	90	87	82	100	83	84	80	97	76	81	87	100
Disagree (Bottom 2 box)	16	20	17	19	18	6	10	8	0	10	13	18	0	17	16	20	3	24	18	13	0
Strongly agree	33	30	43	28	30	55	36	55	73	47	33	31	63	35	32	33	64	21	28	47	60
Somewhat agree	51	50	40	54	52	39	54	37	27	43	54	51	37	48	52	47	33	55	53	40	40
Somewhat disagree	12	14	11	12	14	5	5	7	0	9	9	17	0	17	12	17	3	8	13	8	0
Strongly disagree	4	6	6	7	4	1	5	1	0	1	4	1	0	0	4	3	0	16	5	5	0

Q107: How strongly do you agree or disagree with the following statement?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

3 US respondents are most likely to think their country will adopt 5G within 3 years; fewer feel their business will adopt 5G within 3 years

- Tech Enthusiasts are generally most optimistic about personally adopting 5G in the next three years

When do you think 5G will be broadly adopted in your country/company/when will you personally adopt 5G?

When do you think 5G will be broadly adopted…	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
In your country																	
Less than 3 years	42	42	51	31	41	47	27	44	56	29	33	51	29	44	62	38	49
More than 3 years	58	59	50	69	60	54	73	57	45	70	67	49	70	57	39	62	50
In your company																	
Less than 3 years	-	27	33	21	22	32	17	23	-	-	-	-	-	-	-	-	-
More than 3 years	-	74	67	79	79	69	83	77	-	-	-	-	-	-	-	-	-
By you personally																	
Less than 3 years	34	32	43	25	26	41	19	27	48	27	29	43	23	33	54	36	44
More than 3 years	66	67	56	75	73	59	80	73	51	72	71	58	78	66	45	64	56

Q10: Generally speaking, when do you think 5G will be broadly adopted in your country?
Q11: When do you think 5G will be broadly adopted in your company? (Asked of BDMs and Tech Innovators)
Q12: When do you think you will personally adopt 5G?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

3 Across industries, US BDMs are most confident about their company adopting 5G in the next 3 years

- More than 1 in 3 US BDMs across industries say their company will adopt 5G in less than 3 years

When do you think 5G will be broadly adopted in your country/company/when will you personally adopt 5G?

When do you think 5G will be broadly adopted…	All	BDMs																			
		BDMs All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
In your country																					
Less than 3 years	42	42	51	31	41	59	29	36	32	56	39	37	13	56	40	41	27	63	44	32	20
More than 3 years	58	59	50	69	60	40	71	64	68	44	60	62	87	44	60	59	73	37	56	67	80
In your company																					
Less than 3 years	-	27	33	21	22	43	18	35	35	40	33	19	11	36	27	28	27	39	25	24	20
More than 3 years	-	74	67	79	79	58	81	65	66	59	67	81	90	64	74	72	73	60	74	76	80
By you personally																					
Less than 3 years	34	32	43	25	26	44	26	37	37	48	38	24	15	45	28	33	33	42	39	24	23
More than 3 years	66	67	56	75	73	56	73	62	63	52	63	75	85	55	73	67	67	57	61	77	76

Q10: Generally speaking, when do you think 5G will be broadly adopted in your country?
Q11: When do you think 5G will be broadly adopted in your company? (Asked of BDMs and Tech Innovators)
Q12: When do you think you will personally adopt 5G?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

3 BDMs and Tech Innovators believe the US, and their own country, are likely to benefit the most from 5G

- One exception are French Tech Innovators, who rank the US, China, and Japan as more likely to benefit from 5G than their own country

Which countries do you think could benefit most from the adoption of 5G?
Up to 3 responses permitted, Ranked by All

	All	BDMs							Tech Innovators						
	All	SMEs	USA	UK	Germany	France	China	Korea	Japan	USA	UK	Germany	France	China	Korea	Japan
United States	68	63	85	55	50	65	65	57	73	84	60	41	80	59	60	65
China	42	43	25	24	43	28	77	40	41	39	29	37	40	80	45	29
Japan	31	29	26	17	22	41	29	37	45	27	26	24	39	33	23	36
United Kingdom	23	22	29	61	7	21	16	1	9	21	60	11	13	20	9	1
Germany	21	21	13	24	64	31	24	8	12	11	14	51	21	17	1	12
South Korea	16	16	8	9	7	19	19	63	7	7	9	4	16	8	59	11
India	14	11	12	9	13	8	12	17	21	19	12	25	8	12	19	21
Canada	8	8	20	1	8	4	7	0	0	15	4	4	7	0	1	1
France	8	11	5	1	11	32	9	3	3	3	9	3	28	8	3	0
Dubai	4	4	2	9	7	5	3	1	5	3	6	1	4	4	3	3
Brazil	4	5	6	7	4	3	4	0	0	5	6	3	4	5	1	4
Bangladesh	3	3	3	7	5	1	0	3	0	1	1	7	0	0	1	4
Nigeria	3	3	5	3	8	1	1	0	0	7	5	9	0	1	1	1
Taiwan	3	3	1	4	1	3	5	1	4	3	3	4	3	3	1	4
Sweden	2	2	2	7	5	1	0	0	1	2	3	3	1	1	5	3
Norway	2	2	1	0	8	1	0	1	0	1	4	3	3	1	0	1
Italy	2	2	4	4	7	1	1	0	0	1	0	1	0	3	0	0
Poland	1	1	1	3	4	1	0	1	0	0	3	3	1	1	0	0

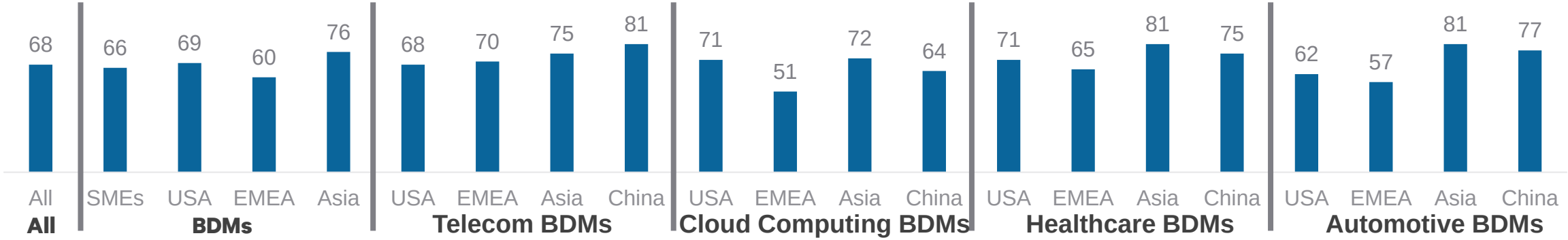
Q103: Which countries do you think could benefit most from the adoption of 5G? Omitting “other” and “none of the above”
All (n=3588) BDMs (SMEs=1035, US n=150, UK n=75, Germany, n=76, France n=75, China n=75, Korea n=75, Japan n=75), Tech Innovators (US n=150, UK n=77, Germany n=75, France n=75, China n=75, Korea n=75, Japan n=75)

Top 3 options per audience

3 Across nearly all BDM audiences, more than 2 in 3 respondents say 5G will have widespread benefits that impact industries beyond the technology sector

- Asian BDMs are especially confident, with roughly 3 in 4 likely to say 5G will benefit industries beyond technology, while EMEA BDMs are slightly less enthusiastic (60%)

Which of the following is closer to your view?
% '5G will have widespread benefits that impact industries beyond the technology sector'



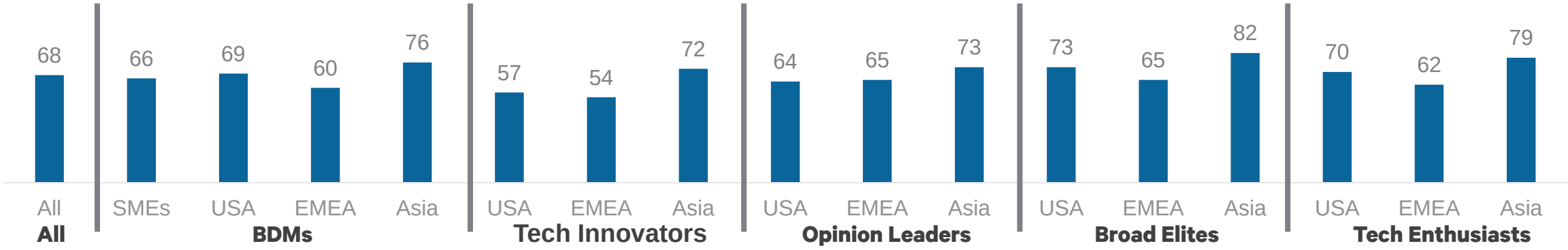
	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
5G will have widespread benefits that impact industries beyond the technology sector	68	66	69	60	76	68	70	75	81	71	51	72	64	71	65	81	75	62	57	81	77
The benefits of 5G will primarily be concentrated on the technology industry	32	34	31	40	24	32	30	25	19	29	49	28	36	29	35	19	25	38	43	19	23

Q49: Which of the following is closer to your view?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

3 Respondents believe 5G will have widespread benefits that impact industries beyond the technology sector

- Asian respondents are particularly positive, with roughly 3 in 4 who believe benefits will extend beyond the technology sector

Which of the following is closer to your view?
% '5G will have widespread benefits that impact industries beyond the technology sector'



	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
5G will have widespread benefits that impact industries beyond the technology sector	68	66	69	60	76	57	54	72	64	65	73	73	65	82	70	62	79
The benefits of 5G will primarily be concentrated on the technology industry	32	34	31	40	24	43	46	28	36	35	27	27	35	18	30	38	21

Q49: Which of the following is closer to your view?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

3 Respondents say the healthcare and telecommunications industries will benefit the most from 5G

- 1 in 3 Tech Innovators also believe the cloud computing industry will see major benefits from 5G

What industries do you believe will benefit the most from innovations enabled by 5G?
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Health Care	42	46	42	35	52	36	27	43	49	32	47	45	37	50	48	40	48
Telecommunications	42	40	41	46	30	51	49	37	43	40	35	44	48	37	34	49	40
Cloud-computing	29	27	17	27	28	33	39	36	24	24	33	16	31	30	19	24	39
Automotive	24	24	11	22	28	11	26	25	13	27	27	17	24	33	22	27	31
Transportation	18	17	22	16	21	12	13	18	17	16	29	17	16	25	21	15	24
Engineering	17	17	23	20	8	23	23	14	32	15	12	17	20	11	13	12	11
Education	16	16	23	11	14	19	16	13	32	20	13	22	16	18	21	18	12
Manufacturing / Production	15	15	21	14	20	11	8	20	16	13	16	23	14	16	15	13	12
Aviation	10	10	10	12	14	5	11	10	9	8	8	9	10	10	10	10	7
Utilities	9	8	12	8	7	11	8	6	4	12	5	16	7	9	15	12	8
Pharmaceuticals	8	10	8	9	12	5	4	7	5	11	7	9	10	7	9	7	8
Renewable energy	8	7	11	11	5	8	13	7	5	9	5	10	9	4	9	13	8
Government	7	6	11	8	3	6	7	3	11	13	1	11	6	4	15	8	3
Shipping (land and air)	7	9	0	9	13	7	8	6	5	9	8	3	5	10	5	6	10
Retail	5	5	7	6	4	6	6	4	1	5	5	3	5	4	8	7	3
Hospitality	4	4	9	2	2	5	3	2	3	4	12	4	3	3	11	3	3
Oil and gas	4	4	3	3	3	5	1	4	1	4	3	7	3	3	3	5	5
Construction	3	3	3	4	3	3	1	2	5	5	1	1	3	2	3	1	3
Farming and agriculture	3	3	4	2	2	1	1	2	3	1	5	6	3	3	1	1	4
Real Estate	2	2	1	5	0	3	1	1	0	5	4	2	3	0	1	2	2
Mining	1	1	2	1	1	0	1	2	0	1	1	1	1	1	1	1	1

Q104: What industries do you believe will benefit the most from innovations enabled by 5G? Select up to 3 choices. Omitting “other” and “none of the above”
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=575), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

3 Healthcare and telecommunications industries rise to the top across BDMs as main beneficiaries of 5G

- In particular, roughly half of EMEA and Asia and 2 in 3 US Healthcare BDMs believe their industry will benefit most
- More than half of EMEA and Asian Cloud Computing BDMS feel their industry will benefit the most
- Roughly 1 in 3 US and EMEA Auto BDMs – and half of those in Asia and China – say the Auto industry will benefit most

What industries do you believe will benefit the most from innovations enabled by 5G?
Up to 3 responses permitted, Ranked by All

	All	BDMs																			
		BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Health Care	42	46	42	35	52	37	36	43	44	32	37	45	48	68	52	53	56	41	25	43	48
Telecommunications	42	40	41	46	30	77	66	48	37	33	45	44	37	33	39	32	23	39	40	31	21
Cloud-computing	29	27	17	27	28	28	33	17	20	31	54	56	60	12	19	24	28	11	17	33	37
Automotive	24	24	11	22	28	11	14	19	16	9	17	28	16	17	17	28	28	29	39	45	52
Transportation	18	17	22	16	21	20	12	36	36	20	9	16	11	16	13	23	16	14	16	19	17
Engineering	17	17	23	20	8	21	17	12	17	36	29	13	12	21	21	12	7	25	21	13	11
Education	16	16	23	11	14	16	11	12	9	12	14	8	13	29	12	17	23	16	8	13	15
Manufacturing / Production	15	15	21	14	20	9	9	13	9	19	5	21	19	16	11	23	20	12	11	12	12
Aviation	10	10	10	12	14	3	7	11	15	8	9	11	8	12	8	4	5	11	12	15	13
Utilities	9	8	12	8	7	16	5	17	17	12	9	7	9	11	4	7	8	8	8	4	4
Pharmaceuticals	8	10	8	9	12	4	8	7	12	11	7	1	5	12	8	13	21	8	15	8	5
Renewable energy	8	7	11	11	5	7	7	4	8	5	13	5	13	5	9	5	5	7	17	4	5
Government	7	6	11	8	3	7	5	1	1	11	5	1	1	13	7	7	5	12	7	3	4
Shipping (land and air)	7	9	0	9	13	7	3	8	11	1	7	7	16	8	9	8	8	11	5	12	15
Retail	5	5	7	6	4	5	4	8	8	7	4	7	12	1	3	5	5	4	16	1	1
Hospitality	4	4	9	2	2	8	3	3	3	16	4	1	1	4	1	3	5	4	3	5	3
Oil and gas	4	4	3	3	3	3	8	7	11	1	1	1	4	5	8	3	9	9	5	5	5
Construction	3	3	3	4	3	4	3	11	12	5	1	1	4	0	1	5	3	0	1	5	7
Farming and agriculture	3	3	4	2	2	1	5	5	7	5	1	1	0	1	4	1	3	1	4	4	5
Real Estate	2	2	1	5	0	5	1	3	3	3	3	1	4	1	3	1	3	0	3	4	5
Mining	1	1	2	1	1	0	1	3	1	3	0	0	1	0	0	1	4	1	1	3	5

Q104: What industries do you believe will benefit the most from innovations enabled by 5G? Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

BARRIERS AND OPPORTUNITIES FOR GROWTH

Barriers and Opportunities for Growth Key Findings

1. Respondents fear widespread consequences if their country were not able to adopt 5G in the next decade, including becoming less competitive globally and more susceptible to data security threats and ultimately suffering an economic downturn; respondents believe affordability, strong cybersecurity protections, investments in infrastructure, and device compatibility are essential to ensuring 5G is widely adopted

2. Technology industry standards are viewed as ‘very important’ in order to deliver the full benefits of 5G, and will be important in addressing possible issues of affordability and device compatibility

3. Audiences also say that intellectual property rights are important in helping deliver the full benefits of 5G, particularly among US respondents

Key differences across audiences: Barriers and Opportunities for Growth

- Tech Enthusiasts are especially likely to be concerned that the **pace of innovation would slow down** if 5G was not made broadly available in their country in the next decade
- Tech Innovators, Telecom and Cloud Computing BDMs, and Asian respondents are especially likely to point to **global tech industry standards and interoperability** as key to the widespread adoption of 5G
- Respondents' top concerns about the adoption of 5G include replacing existing devices and lack of coverage
  - EMEA respondents are worried about uneven availability within their country
  - Cybersecurity attacks are a concern for 1 in 3 Asian Tech Enthusiasts and US Opinion Leaders
  - US Tech Innovators are especially worried about a lack of agreement on tech industry standards
  - SMEs and US BDMs are concerned that small and medium businesses would not be able to keep up
- In order for all industries, not just those in the tech sector, to adopt innovations enabled by 5G, Asian BDMs are prioritize proven success of technologies
  - Opinion Leaders in the US and EMEA are especially likely to emphasize fully developed applications and services
  - Asian Telecom BDMs mention global availability
- US respondents are especially likely to say standards and IP rights protections are '**very important**' to helping companies deliver the full benefits of 5G within the next 10 years
  - EMEA Healthcare and Auto BDMs place slightly less importance on tech standards
  - Tech Innovators and Opinion Leaders are especially likely to emphasize that standards increase interoperability between devices
  - EMEA respondents feel standards encourage capital investment in 5G

1 Respondents say if their country does not adopt 5G in the next decade, their country will become less competitive globally and individuals and companies would become more susceptible to data security threats

- 2 in 3 say the pace of innovation will slow down

If 5G is not made broadly available in your country within the next decade, how concerned are you that each of the follow would occur?
Showing 'very + somewhat concerned', Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Individuals and companies in my country would be more susceptible to data security threats	71	67	76	69	72	66	52	68	79	72	67	70	66	75	79	71	82
My country will become less competitive globally	69	62	73	76	61	69	65	67	74	76	71	66	66	67	77	71	71
The pace of innovation will slow down	66	60	68	64	61	69	63	64	64	71	66	68	61	68	72	65	74
The economy would suffer	62	57	66	68	53	60	61	58	66	67	59	56	63	64	71	65	65
My company will fall behind competitors in my industry	61	53	66	60	61	58	56	66	-	-	-	-	-	-	-	-	-

G98: If 5G is not made broadly available in your country within the next decade, how concerned are you that each of the follow would occur? Showing "very + somewhat concerned"
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

1 Respondents across audiences say affordable 5G devices, stronger cybersecurity protections, and significant capital investments are essential to the widespread adoption of 5G

- Tech Innovators and Asian respondents also prioritize global technology industry standards and interoperability

The widespread adoption of 5G over the next decade is not possible without…
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Availability of affordable 5G compatible devices	50	51	61	53	42	53	47	47	65	41	45	54	49	42	54	61	50
Stronger cybersecurity and data privacy protections	48	48	51	41	51	42	37	42	59	59	43	49	44	58	46	46	54
Significant capital investments in tech infrastructure	46	43	44	48	41	47	53	46	51	53	41	59	57	44	51	42	43
Global technology industry standards and interoperability	43	42	40	38	49	43	43	43	40	41	48	38	43	47	38	37	49
Collaboration across industries and governments	40	39	43	42	31	38	38	42	49	41	37	46	34	42	52	40	43
Strong IP rights protections	25	27	22	28	28	22	25	23	12	25	35	16	18	25	25	23	26

Q88: The widespread adoption of 5G over the next decade is not possible without… Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

1 BDMs across most industries believe the widespread adoption of 5G is not possible without affordable 5G devices, stronger cybersecurity, and capital investments in tech infrastructure

- Asian BDMs, along with Telecom and Cloud Computing BDMs, recognize the need for global technology industry standards and interoperability

The widespread adoption of 5G over the next decade is not possible without…
Up to 3 responses permitted, Ranked by All

	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Availability of affordable 5G compatible devices	50	51	61	53	42	49	46	33	35	63	51	52	44	55	55	52	47	63	52	48	55
Stronger cybersecurity and data privacy protections	48	48	51	41	51	51	38	59	45	43	54	47	51	49	52	41	43	58	40	59	53
Significant capital investments in tech infrastructure	46	43	44	48	41	44	45	40	45	52	46	43	47	35	56	41	39	33	47	37	36
Global technology industry standards and interoperability	43	42	40	38	49	49	41	44	45	51	47	55	55	36	33	48	45	25	33	49	60
Collaboration across industries and governments	40	39	43	42	31	44	36	29	29	40	38	39	40	49	32	41	43	42	39	37	32
Strong IP rights protections	25	27	22	28	28	32	22	49	53	21	26	25	45	24	20	28	37	14	27	37	43

Q88: The widespread adoption of 5G over the next decade is not possible without… Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

1 Lack of technology infrastructure, limited cybersecurity and data privacy protections, and lack of investment are viewed as potential barriers to the widespread adoption of 5G

- 1 in 3 US Tech Innovators and Asian Elites say insufficient technology standards could hinder 5G
- Tech Innovators are worried about lack of availability of 5G compatible devices

Which of the following do you think is most likely to prevent or hinder the widespread adoption of 5G in your country in the next 10 years?
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Lack of technology infrastructure	37	36	37	39	38	38	41	36	33	48	37	31	38	40	32	38	38
Limited cybersecurity and data privacy protections	30	29	35	30	33	25	23	35	36	24	39	30	30	37	27	24	43
Lack of investment/funding	30	28	22	39	24	25	36	26	24	33	29	27	40	25	26	36	24
Lack of availability of 5G compatible devices	29	29	33	27	32	29	33	30	28	29	21	27	26	27	33	32	30
Insufficient technology standards	26	24	17	30	30	33	25	28	21	23	21	26	19	34	26	20	32
Lack of collaboration between companies in different industries	26	25	26	26	28	27	26	25	24	16	31	27	27	26	33	26	29
Strict government regulations	21	19	21	16	16	15	15	20	27	23	11	23	25	18	30	20	16
Limited frequency spectrum/bandwidth	21	20	21	20	15	25	19	22	16	24	21	27	19	19	17	21	20
Government gridlock	21	22	27	21	16	19	17	14	31	23	24	31	17	24	34	19	23
Insufficient intellectual property rights protections	16	16	15	13	17	17	11	17	20	15	24	13	17	18	18	13	16

Q87: Which of the following do you think is most likely to prevent or hinder the widespread adoption of 5G in your country in the next 10 years? Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

1 Roughly 1 in 3 BDMs across industries say a lack of technology infrastructure may hinder or prevent the widespread adoption of 5G

- Approximately 1 in 3 Healthcare and Auto BDMs in EMEA and Asia say a lack of availability of 5G compatible devices could also hinder the adoption of 5G in their country
- Cloud computing BDMs are especially worried about lack of cybersecurity protections

Which of the following do you think is most likely to prevent or hinder the widespread adoption of 5G in your country in the next 10 years?
Up to 3 responses permitted, Ranked by All

	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Lack of technology infrastructure	37	36	37	39	38	37	33	36	33	37	33	36	45	40	39	33	31	32	35	25	31
Limited cybersecurity and data privacy protections	30	29	35	30	33	28	20	28	21	24	38	33	36	19	25	28	16	20	27	25	29
Lack of investment/funding	30	28	22	39	24	35	22	21	23	19	42	27	28	25	41	29	29	33	36	33	29
Lack of availability of 5G compatible devices	29	29	33	27	32	29	25	28	31	24	21	29	29	25	33	44	41	24	29	29	33
Insufficient technology standards	26	24	17	30	30	24	20	37	41	39	22	32	37	21	23	19	20	16	23	28	27
Lack of collaboration between companies in different industries	26	25	26	26	28	29	20	27	23	27	30	27	15	28	24	28	25	29	23	21	20
Strict government regulations	21	19	21	16	16	27	17	25	29	27	22	17	15	31	24	13	21	34	31	19	19
Limited frequency spectrum/bandwidth	21	20	21	20	15	27	24	24	17	28	30	17	27	24	13	20	23	18	27	24	29
Government gridlock	21	22	27	21	16	25	28	13	15	23	21	24	20	25	19	20	17	25	20	17	15
Insufficient intellectual property rights protections	16	16	15	13	17	11	16	29	35	17	11	15	31	13	9	12	21	11	17	28	24

Q87: Which of the following do you think is most likely to prevent or hinder the widespread adoption of 5G in your country in the next 10 years? Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

1 Respondents say improved cybersecurity protections, increased government investment, and development of tech standards would promote the widespread adoption of 5G in their country

What could your country do to be better equipped to promote the widespread adoption of 5G in the next 10 years?
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Improve cybersecurity and data privacy protections	39	37	39	36	45	43	34	37	51	44	28	45	40	40	39	37	46
Increase government investments in technology infrastructure	36	35	30	37	41	23	33	36	29	36	33	35	41	45	36	44	36
Encourage companies to participate in the development of technology industry standards and to use them to promote interoperability between devices	34	31	29	30	39	34	32	37	41	35	47	36	35	38	36	28	39
Increase incentives for companies to innovate in my country	27	27	24	30	21	27	30	20	19	24	28	28	28	22	41	26	25
Leverage past experience with 4G/LTE	25	24	25	23	19	29	32	25	35	28	24	19	24	20	17	27	29
Reduce government gridlock	22	25	24	18	21	13	18	19	20	19	25	31	25	24	28	19	25
Improve and standardize IP rights protections in my country and globally	21	21	23	21	26	23	14	22	15	28	20	19	12	24	26	19	23
Increase collaboration with other countries	20	17	20	22	11	21	21	13	24	25	24	17	25	20	22	26	18
Enact government regulations related to mobile networks	20	21	21	21	24	15	16	21	16	23	20	18	18	25	15	19	22
Encourage educational opportunities for women in science and technology	13	13	17	14	12	15	11	11	21	9	11	13	8	11	11	10	10

Q89: What could your country do to be better equipped to promote the widespread adoption of 5G in the next 10 years? Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

1 BDMs feel improved cybersecurity protections, increased government investment, and tech industry standards can help promote the adoption of 5G

What could your country do to be better equipped to promote the widespread adoption of 5G in the next 10 years?
Up to 3 responses permitted, Ranked by All

	All	BDMs																		
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Improve cybersecurity and data privacy protections	39	37	39	36	45	33	34	39	35	40	41	40	37	37	37	33	35	41	32	33	35
Increase government investments in technology infrastructure	36	35	30	37	41	40	25	28	27	28	36	44	35	33	43	45	48	25	29	41	31
Encourage companies to participate in the development of technology industry standards and to use them to promote interoperability between devices	34	31	29	30	39	40	29	21	29	41	32	41	45	35	27	36	31	30	27	27	29
Increase incentives for companies to innovate in my country	27	27	24	30	21	32	28	33	40	24	37	24	37	24	28	28	37	28	28	25	27
Leverage past experience with 4G/LTE	25	24	25	23	19	35	32	23	31	28	29	24	25	23	25	19	21	20	35	25	25
Reduce government gridlock	22	25	24	18	21	27	21	25	15	25	24	23	19	29	19	21	19	34	21	28	27
Improve and standardize IP rights protections in my country and globally	21	21	23	21	26	20	20	27	29	28	18	28	28	19	16	28	28	18	16	25	36
Increase collaboration with other countries	20	17	20	22	11	19	14	27	33	16	21	12	21	15	23	11	23	20	23	27	25
Enact government regulations related to mobile networks	20	21	21	21	24	11	25	23	23	20	20	21	32	19	21	25	19	8	25	21	25
Encourage educational opportunities for women in science and technology	13	13	17	14	12	17	13	23	17	19	8	7	13	23	11	12	12	13	13	19	24

Q89: What could your country do to be better equipped to promote the widespread adoption of 5G in the next 10 years? Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

1 Respondents top concerns about the adoption of 5G include replacing existing devices and lack of coverage

- Cybersecurity attacks are also a concern for 1 in 3 Asian Tech Enthusiasts and US Opinion Leaders
- EMEA respondents are worried about uneven availability within their country
- US Tech Innovators are especially worried about lack of agreement on tech industry standards

What concerns, if any, do you have about the adoption of 5G?
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Consumers and businesses will have to replace all of their devices for ones that are compatible with 5G	30	32	39	30	32	33	26	33	33	20	31	29	26	38	32	26	35
The extent of coverage provided by 5G	28	26	23	26	24	21	29	28	27	32	27	27	28	28	29	32	34
More susceptible to cybersecurity attacks	25	24	21	25	28	20	26	29	32	24	27	23	25	27	26	21	32
Privacy infringement	24	24	23	22	27	21	20	22	27	29	25	25	24	25	25	18	27
It will only last 5-10 years before being replaced	23	24	30	23	16	20	31	20	27	27	13	17	29	22	26	27	19
Lack of infrastructure within my country	21	21	14	26	25	15	27	22	12	17	15	15	24	18	13	23	28
Uneven availability within my country	21	18	13	26	12	21	30	12	19	33	23	22	26	14	19	31	19
Small and medium businesses will not be able to keep up with new technologies	21	24	27	20	23	25	19	23	20	11	21	13	13	21	24	19	24
It will lead to a monopoly within the technology industry	17	16	18	12	19	21	7	17	9	21	20	15	13	25	21	10	21
Lack of agreement on technology industry standards	17	16	9	20	13	29	17	16	25	13	20	23	18	17	13	15	16
Companies will focus their time and resources on developing 5G rather than developing other potentially life-changing innovations	13	12	15	13	11	9	12	9	19	23	15	13	15	15	13	12	11
Lack of user-friendliness	8	9	11	6	9	7	6	6	12	7	8	6	9	6	11	7	5

Q47: What concerns, if any, do you have about the adoption of 5G? Omitting “other” and “none of the above”
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

1 Higher costs, cybersecurity and privacy concerns, and device incompatibility are most likely to prevent respondents from adopting innovations enabled by 5G

- Tech Enthusiasts are also concerned about lack of availability of 5G compatible devices

Which of the following are most likely to prevent you from adopting innovations enabled by 5G in the next 10 years?
Up to 3 responses permitted, Ranked by USA Opinion Leaders

	Opinion Leaders			Broad Elites			Tech Enthusiasts		
	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Higher costs for data packages	67	52	40	59	40	37	60	51	44
Cybersecurity and data privacy concerns	51	43	43	44	44	52	44	37	52
Incompatibility with current/older devices	48	39	36	41	44	45	39	38	43
Lack of availability of 5G compatible devices	44	41	33	38	40	38	44	43	44
Lack of confidence in new technologies	17	11	20	12	21	18	21	12	15
Concerns about how to use the technology	12	32	32	19	15	29	14	13	28
I'm not sure how 5G technologies would fit into my life	11	13	17	19	16	18	14	14	16

Q95: Which of the following are most likely to prevent you from adopting innovations enabled by 5G in the next 10 years? Select up to 3 choices. Omitting "other" and "none of the above"
Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

1 Costs, cybersecurity concerns, and incompatibility are most likely to prevent businesses from adopting 5G innovations

Which of the following are most likely to prevent your company from adopting innovations enabled by 5G in the next 10 years?
Up to 3 responses permitted, Ranked by BDM All SMEs

	BDMs																				Tech Innovators		
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive						
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia
Higher costs for adopting the new technology	49	55	42	50	49	39	48	45	52	46	67	53	57	44	57	48	54	52	47	39	61	44	53
Cybersecurity and data privacy concerns	37	42	37	39	35	36	37	37	45	43	39	51	36	33	32	39	38	24	32	40	38	37	36
Incompatibility with current/older operating systems	36	41	39	38	39	36	40	31	41	39	44	37	41	45	27	24	25	36	36	39	30	40	32
Lack of availability of 5G compatible devices	34	34	39	32	44	45	35	37	40	38	32	36	23	35	36	41	29	39	32	40	32	30	32
I'm not sure how 5G technologies will fit into my company's operations	23	18	21	24	16	18	31	27	9	22	19	21	17	24	28	15	29	35	16	15	22	26	24
Costs of training employees on using new technologies	21	20	22	20	28	18	32	31	21	25	24	40	28	16	20	27	21	19	29	27	23	19	22
Lack of confidence in new technologies	19	19	15	20	20	17	29	43	19	20	23	35	19	16	20	27	18	24	31	32	18	17	16

Q96: Which of the following are most likely to prevent your company from adopting innovations enabled by 5G in the next 10 years? Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

1 Affordability, cybersecurity protections, and availability are key in order for industries beyond the technology sector to adopt innovations enabled by 5G

- Opinion Leaders and US Broad Elites and Tech Enthusiasts are especially likely to emphasize fully developed applications and services

What needs to happen in order for all industries, not just those in the tech sector, to adopt innovations enabled by 5G?
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Affordability	53	54	65	56	50	59	49	48	60	48	57	64	57	52	62	62	49
Clear cybersecurity and data privacy protections	42	40	39	38	46	45	37	41	43	55	44	47	44	52	38	36	50
Availability of devices	40	41	46	43	31	39	43	37	45	37	28	43	36	30	43	46	40
Proven success of technologies	37	38	41	33	41	43	40	36	40	37	39	37	39	41	30	30	35
Fully developed applications and services	34	33	33	30	37	29	26	36	43	39	37	43	24	38	41	28	40
Global availability	29	25	25	32	26	27	28	28	31	31	28	24	27	31	30	27	28
Flexible use cases	23	21	16	19	19	19	29	24	17	24	16	15	28	20	23	25	21

Q97: What needs to happen in order for all industries, not just those in the tech sector, to adopt innovations enabled by 5G? Select up to 3 choices. Omitting “other” and “none of the above”
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

1 BDMs feel affordability, availability of devices, and cybersecurity protections are necessary for all industries to be able to adopt 5G innovations

- US Telecom BDMs are especially likely to emphasize fully developed applications and services, while Asian Telecom BDMs mention global availability
- Asian BDMs especially likely to emphasize proven success of technologies, while many Chinese BDMs also emphasize flexible use cases

What needs to happen in order for all industries, not just those in the tech sector, to adopt innovations enabled by 5G?
Up to 3 responses permitted, Ranked by All

	All	BDMs																		
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Affordability	53	54	65	56	50	49	36	52	45	59	51	44	23	67	48	52	44	68	43	39	32
Clear cybersecurity and data privacy protections	42	40	39	38	46	40	34	31	27	44	43	45	40	51	39	47	31	30	35	47	43
Availability of devices	40	41	46	43	31	49	45	35	35	48	36	43	48	47	45	36	37	59	47	39	43
Proven success of technologies	37	38	41	33	41	40	30	45	47	41	38	35	47	39	36	33	48	32	27	41	44
Fully developed applications and services	34	33	33	30	37	44	32	31	35	37	30	43	47	33	27	39	32	24	31	37	35
Global availability	29	25	25	32	26	31	30	40	40	35	36	29	52	21	23	23	32	17	36	28	35
Flexible use cases	23	21	16	19	19	17	29	36	40	24	24	24	35	12	24	24	37	9	23	32	43

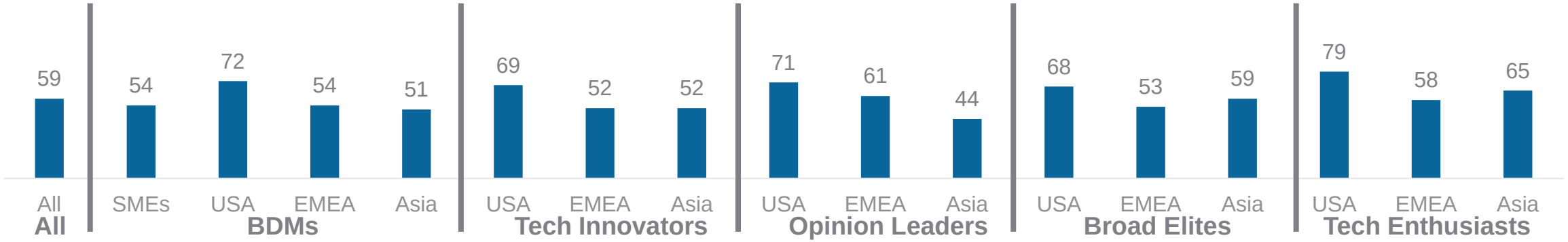
Q97: What needs to happen in order for all industries, not just those in the tech sector, to adopt innovations enabled by 5G? Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

2 Majority across most audiences find technology industry standards ‘very important’ in helping companies deliver the full benefits of 5G

- Respondents in the US are especially likely to say this

How important are technology industry standards in helping companies deliver the full benefits of 5G within the next 10 years?
% ‘Very important’



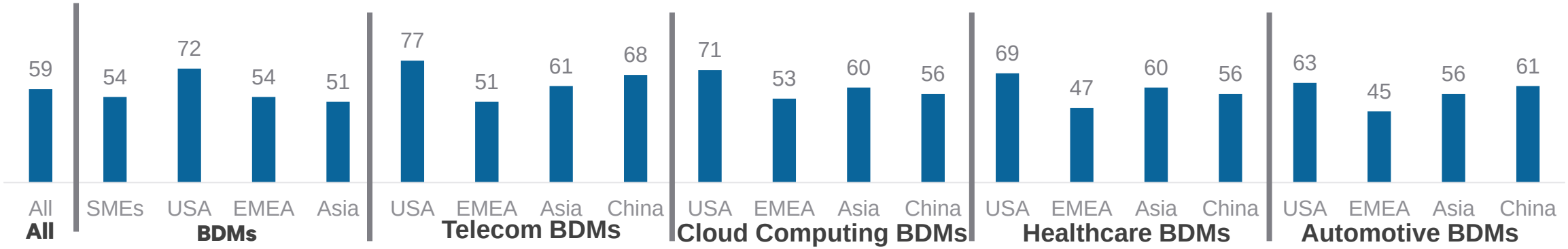
	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Very important	59	54	72	54	51	69	52	52	71	61	44	68	53	59	79	58	65
Somewhat important	38	41	27	40	44	28	43	46	27	36	56	32	42	38	21	38	34
Not that important	2	4	1	4	4	3	5	2	1	3	0	0	4	2	1	3	1
Not at all important	1	1	0	1	2	0	1	0	1	0	0	0	2	1	0	0	0

Q90: How important are technology industry standards in helping companies deliver the full benefits of 5G within the next 10 years?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

2 BDMs across industries, especially in the US, say technology industry standards are ‘very important’ in helping companies deliver 5G

- EMEA Healthcare and Auto BDMs place slightly less importance on tech standards in comparison to other audiences

How important are technology industry standards in helping companies deliver the full benefits of 5G within the next 10 years?
% ‘Very important’



	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Very important	59	54	72	54	51	77	51	61	68	71	53	60	56	69	47	60	56	63	45	56	61
Somewhat important	38	41	27	40	44	21	42	37	32	29	45	39	44	29	49	36	41	29	45	39	39
Not that important	2	4	1	4	4	1	3	1	0	0	1	1	0	1	3	1	3	5	8	4	0
Not at all important	1	1	0	1	2	0	4	0	0	0	1	0	0	0	1	3	0	3	1	1	0

Q90: How important are technology industry standards in helping companies deliver the full benefits of 5G within the next 10 years?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

2 Those who feel tech industry standards are important believe they further tech development, reduce compatibility issues and costs, and increase efficiency

How important are tech industry standards in helping companies deliver the full benefits of 5G within the next 10 years? Why do you say that?
Showing 'Very + somewhat important' (97% of respondents)

- "They will **reduce compatibility *issues*** *between different standards,* ***increase efficiency****, and* ***reduce unnecessary costs.****" – Chinese Tech Enthusiast*
- *"Without uniform industry standards,* ***research and development enterprises will lack a collaborative spirit and technological innovation will be adversely affected****." – Chinese BDM*
- *"Having uniform standards will* ***promote technological upgrade****, as everyone will be able to conduct research by pooling their resources together within a single framework, thereby* ***avoiding waste of resources****." – Chinese Tech Enthusiast*
- *"Without standards we will* ***end up with a lot of incompatible networks and devices which means loosing everyone's time and energy****." – UK Tech Innovator*
- *"For the system to be developed uniformly and coherently on a global scale and* ***to prevent usage and/or operational incompatibility.****" – France Tech Innovator*
- *"Without standards,* ***compatibility problems arise****." – German Tech Innovator*
- *"Because there is a need to* ***ensure compatibility through technical standards****,* ***continuity of service needs to be secured for a certain period,*** *and there's the* ***need to promote the discovery and correction of problems****." – Japanese Cloud Computing BDM*
- *"To* ***make all devices operate and interact with each*** *will require a standard that everyone can use." – UK Tech Innovator*
- *"We* ***cannot develop properly*** *without protocols." – Korean Opinion Leader*
- *"Having uniform standards will* ***promote technological upgrade****, as everyone will be able to conduct research by pooling their resources together within a single framework, thereby* ***avoiding waste of resources****." – Chinese Tech Enthusiast*
- *" Common standards, protocols, etc. are necessary to* ***ensure a consistent and seamless experience across competing devices and technologies****." – UK BDM*

Q90 / q91: How important are tech industry standards in helping companies deliver the full benefits of 5G within the next 10 years? Why do you say that? (Only asked of half of all respondents)
Open-end responses are based off a smaller subset of random respondents pulled from each country

2 Respondents who think tech industry standards are ‘not that’ or ‘not at all’ have varied responses: some don’t understand the importance of standards or fear they will slow the process down

How important are tech industry standards in helping companies deliver the full benefits of 5G within the next 10 years? Why do you say that?
Showing ‘Not that + Not at all important’ (3% of respondents)

- *“Compared to 5G, **the existing standards are many years behind. There will need to be some reform initiatives in order to more effectively and/or more quickly usher in 5G.**”* – Chinese BDM
- ***“5G is a new method to transfer data. This brings advantages but also disadvantages. But society will never change.”*** – German Broad Elite
- *“Because the effort to deal with these things is so immense that **you lose an advantage in productivity**”*– German Opinion Leader
- ***“No idea how quickly 5G will change everything.”*** – German Healthcare BDM
- ***“I just don't put a great deal of importance on that.”*** – US Telecom BDM
- *“I don’t think they are **necessary**”*-Japanese Automotive BDM
- *“5G is already a benchmark standard - no **new standards are needed**”*-German Tech Innovator

Q90 / q91: How important are tech industry standards in helping companies deliver the full benefits of 5G within the next 10 years? Why do you say that? (Only asked of half of all respondents)
Open-end responses are based off a smaller subset of random respondents pulled from each country
*Responses pulled from a small base size

2 Allowing for a consistent global experience, reducing costs of services and devices and increasing potential benefits of new technology are among the most important roles for technology industry standards in the development of 5G

- Increasing interoperability is also important to Tech Innovators and Opinion Leaders

In your opinion, what is the **most important** role that technology industry standards play in the development of 5G in the next 10 years? *Up to 3 responses permitted, Ranked by All*

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Allow for a consistent 5G experience globally	35	33	35	30	28	41	38	30	31	51	25	35	31	39	43	38	30
Increase the reach and potential benefits of the new technology	34	33	35	33	39	33	28	34	40	24	31	36	28	39	39	37	37
Reduce costs of services and devices	34	37	40	31	32	36	28	30	39	28	36	38	34	24	33	38	35
Increase interoperability between devices	33	28	27	27	36	36	38	40	44	35	41	31	31	36	25	27	39
Encourage capital investment in 5G	30	29	30	31	24	23	30	28	27	39	35	31	36	32	30	31	27
Facilitate adoption of new technologies regardless of market	24	23	17	22	19	22	28	20	23	21	25	20	30	27	27	27	27
Promote collaboration between companies	24	22	27	23	28	27	23	19	27	17	19	25	23	21	29	24	24
Allow for companies outside of the technology industry to be involved in the process	22	23	26	29	17	23	18	20	28	20	25	25	23	19	28	19	20
Ensure strong protection of intellectual property rights	21	20	23	20	29	13	13	24	17	25	16	22	16	24	18	18	26

Q92: In your opinion, what is the most important role that technology industry standards play in the development of 5G in the next 10 years? Select up to 3 choices. Omitting "other" and "none of the above" All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

2 Reducing costs of services and devices and increasing potential benefits of new technology are among the most important roles for technology industry standards in the development of 5G

- Providing a consistent 5G experience worldwide also rises to the top across BDM industries, particularly Healthcare

In your opinion, what is the **most important** role that technology industry standards play in the development of 5G in the next 10 years?
Up to 3 responses permitted, Ranked by All

	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Allow for a consistent 5G experience globally	35	33	35	30	28	41	30	29	28	39	37	25	36	37	33	32	41	26	39	33	36
Increase the reach and potential benefits of the new technology	34	33	35	33	39	28	26	36	33	40	36	35	33	32	39	29	31	30	29	29	27
Reduce costs of services and devices	34	37	40	31	32	35	29	33	32	39	29	37	37	37	40	39	36	55	37	39	32
Increase interoperability between devices	33	28	27	27	36	23	26	25	29	31	22	40	29	41	27	36	45	30	20	29	37
Encourage capital investment in 5G	30	29	30	31	24	39	26	36	40	29	36	35	40	19	32	29	31	24	37	36	41
Facilitate adoption of new technologies regardless of market	24	23	17	22	19	31	32	20	27	16	25	27	29	24	23	19	23	14	27	28	28
Promote collaboration between companies	24	22	27	23	28	20	18	25	29	39	28	15	24	20	17	21	21	25	25	20	27
Allow for companies outside of the technology industry to be involved in the process	22	23	26	29	17	24	25	20	27	24	25	17	28	25	21	15	21	18	19	24	29
Ensure strong protection of intellectual property rights	21	20	23	20	29	15	21	32	37	21	20	20	29	25	12	21	24	7	21	23	29

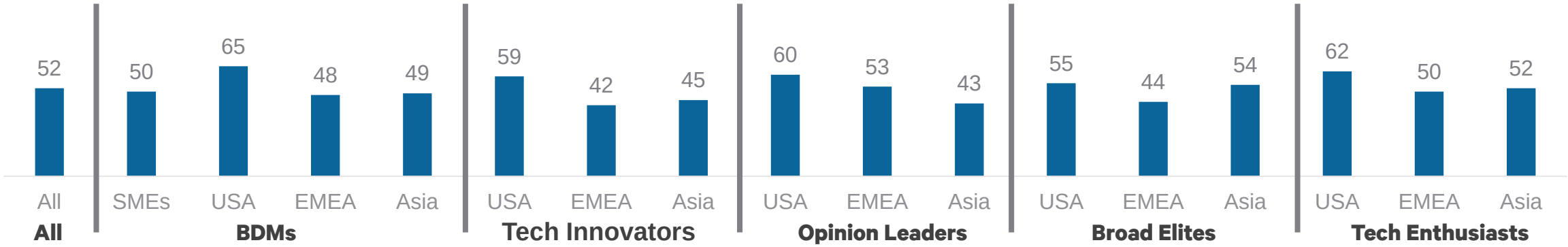
Q92: In your opinion, what is the most important role that technology industry standards play in the development of 5G in the next 10 years? Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

3 1 in 2 respondents say intellectual property rights are ‘very important’ in helping companies deliver 5G

- In particular, roughly 6 in 10 US respondents across audiences recognize the importance of intellectual property rights for the promotion of 5G

How important are intellectual property rights protections in helping companies deliver the full benefits of 5G within the next 10 years?
% ‘Very important’



	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Very important	52	50	65	48	49	59	42	45	60	53	43	55	44	54	62	50	52
Somewhat important	42	43	31	41	46	31	43	51	32	40	57	41	43	44	34	41	47
Not that important	5	6	5	9	3	7	13	3	5	7	0	4	9	2	4	8	1
Not at all important	1	2	0	1	2	3	3	0	3	0	0	0	4	0	1	1	0

Q93: How important are intellectual property rights protections in helping companies deliver the full benefits of 5G within the next 10 years?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

3 Respondents who say IP rights protections are important to 5G say they are necessary to motivate innovators and protect investments

How important are intellectual property rights protections in helping companies deliver the full benefits of 5G within the next 10 years? Why do you say that? ***Showing 'Very + somewhat important' (94% of respondents)***

- *"Frankly speaking, **intellectual property rights are intangible assets**, so **massive investment in research and development needs to be protected**."-Chinese Broad Elite*
- *"As intellectual property rights represent a monopoly, they mean large profits for the developer, but also adversely affect other developments and the possibility of new delays to technological development cannot be ruled out. There is a **need to establish control so that incentives for development and technological innovations can be satisfied simultaneously**."-Japanese Tech Innovator*
- *"Copyrights protect the inventors from being copied, which means **less risk applies to the high investment costs**."-German Tech Innovator*
- *"Because it's something that shouldn't need to be a question, it's **imperative. Basic human right**!"-UK Opinion Leader*
- *"Because whoever is involved in inventing or improving 5G **needs to be compensated and recognized for their work**"-US Auto BDM*
- *"**Protection of intellectual property** is just as **important as data security in general**!"-German Auto BDM*
- *"The application of **5G technology** is sure to **spark development and research for certain innovation projects.** That's why it's **necessary to have relevant protection and legislation** for these technologies and innovations"-Chinese BDM*
- *"If an **intellectual property right is not firmly established,** despite developing a technology, there is **no reward and that means motivation is lost**."-Japanese Tech Enthusiast*
- "***Disputes over intellectual rights could hamper the rollout of 5G"***-UK Tech Innovator
- "I think ***people need an incentive to spend time and money on new technology and new ideas***."-US BDM
- *"**Intellectual property rights must be protected to motivate developers**"*-Korean BDM

Q93 / 94: How important are intellectual property rights protections in helping companies deliver the full benefits of 5G within the next 10 years? / Why do you say that? (Only asked of half of all respondents)
Open-end responses are based off a smaller subset of random respondents pulled from each country
*Responses pulled from a small base size

3 The reasons for thinking IP rights are not important are varied: some worry they restrict innovation, while others believe they promote unfair advantages

How important are intellectual property rights protections in helping companies deliver the full benefits of 5G within the next 10 years? Why do you say that? ***Showing 'Not that + not at all important' (6% of respondents)***

- *"IP rights are generally used to **stifle innovation**. Businesses and individuals deserve a **fair reward for innovation and creation** but this should not be **excessive**. Music industry is prime example of abuse of IP rights"-UK Broad Elite*
- *"It is because **excessive regulation of intellectual property rights adversely impacts development**"-Korean Tech Innovator*
- *"Because if protections are in place, only a **select few parties can advance**"-Japanese BDM*
- *"The **more IP the companies have**, the more likely they **will not share and collaborate** with other like companies"-US Cloud Computing BDM*
- *"**Ensuring nationwide benefits is important** - that has to **come before licensing and performance rights unfortunately**"-German Tech Innovator*

Q93 / 94: How important are intellectual property rights protections in helping companies deliver the full benefits of 5G within the next 10 years? / Why do you say that? (Only asked of half of all respondents)
Open-end responses are based off a smaller subset of random respondents pulled from each country
*Responses pulled from a small base size

5G USE CASES

5G Use Cases Key Findings

Our survey explored the potential use cases of 5G, divided up into 3 major categories and related subdivisions, including:

1. Enhanced Mobile Broadband

   1a. Use Case Deep Dive: Virtual Reality Capabilities

2. Mission Critical Services

   2a. Use Case Deep Dive: Automotive Advancements

3. Massive Internet of Things (IoT)

   3a. Use Case Deep Dive: Healthcare Advancements

The following key findings map back to these major use cases and the subcategories within each.

5G Use Cases Key Findings

1 Respondents recognize many benefits of **Enhanced Mobile Broadband**, particularly wireless fiber to the home and connectivity in demanding conditions; Ultra-HD streaming, virtual reality, and tactile internet also stand out

1A
- Among BDMs, **virtual reality** is viewed as a tool to help train employees, provide a better customer service experience, enhance communication, and reduce costs, while consumer audiences look to the entertainment and cultural experiences; respondents across audiences also appreciate the benefits virtual reality will have on the healthcare industry

2 Respondents say new technologies can greatly improve **Mission Critical Services** in their country, and that significant investment is needed in 5G to enhance emergency response services, increase access to healthcare, and enhance utility monitoring

2A
- Audiences say **autonomous vehicles** will reduce traffic accidents and distracted driving and increase access to transportation for disabled or senior citizens; however, there needs to be extensive testing, safety standards, and cybersecurity protections before autonomous vehicles are widely adopted

5G Use Cases Key Findings

3 Respondents say the top benefits of **Massive Internet of Things (IoT)** include increased productivity, convenience, and pace of innovation; they expect IoT will lead to the development of new products, increased safety and quality of products, and decreased costs

3A When it comes to the **healthcare industry**, US and EMEA respondents believe tech enabled by 5G will benefit research and scientific advancements, while Asian respondents point to enhanced operations and efficiency**;** Respondents believe tech enabled by 5G will allow for earlier and more accurate diagnoses and better access to secure medical records

Key differences across audiences: 5G Use Cases (1 of 2)

- Asian respondents are most interested in adopting **tactile internet** and **virtual reality**
  - Tech Enthusiasts are especially likely to feel **they will personally benefit** from virtual reality, while Tech Innovators and Telecom BDMs are especially likely to feel **gamers** will benefit. Automotive BDMs are especially likely to feel transportation operators will benefit the most

- US and Asian Broad Elites are especially likely to feel significant investments in 5G by companies or governments are necessary to reduce **traffic congestion or automobile accidents**, while US Tech Enthusiasts feel it's necessary to **develop alternative sources of energy**

- US Opinion Leaders, Elites, and Tech Enthusiasts are more likely to say access to **virtual medical care** and **smarter grids/energy** will have a '**great deal' of impact** on their country in comparison to their counterparts, and they're especially likely to say 5G is '**very important**' to enabling these innovations
  - Tech Innovators expect IoT will have a 'great deal' of impact on the products/services they design or manage, and they believe 5G is 'very important' to enabling this

- US respondents are more likely to say **smart grids with sensors** is a key area to be addressed before autonomous vehicles are widely adopted
  - Roughly 1 in 3 respondents in Asia say there need to be technology industry standards, while EMEA respondents are more likely to say there needs to be legislation
  - US Auto BDMs would also like to see wireless sensors on vehicles that communicate with other vehicles and the smart grid before their company widely launches autonomous vehicles. Asian Auto BDMs prioritize insurance, while Chinese Auto BDMs are also looking for biometric verification of drivers' identity and privacy protections

Key differences across audiences: 5G Use Cases (2 of 2)

- New technologies enabled by 5G are seen as having **potential benefits for individuals who are disabled or elderly**
  - EMEA and Asian respondents are especially likely to believe tactile internet can provide enhanced experiences for those individuals with disabilities or the elderly
  - EMEA Healthcare BDMs are especially likely to believe the disabled or elderly can benefit from virtual reality
  - Asian respondents are especially likely to feel a key benefit of autonomous vehicles is increased access to transportation for these individuals

- **Healthcare** is a key use case of new technologies enabled by 5G
  - European Tech Innovators, Opinion Leaders, and Tech Enthusiasts and US BDMs and Broad Elites believe a key benefit of IoT is it will lead to better health monitoring and diagnosis
  - US and EMEA respondents tend to say tech enabled by 5G will benefit healthcare research and scientific advancements, while Asian respondents point to healthcare system operations and efficiency
    - US and Asian Healthcare BDMs expect technologies enabled by 5G will benefit healthcare system operations, while EMEA Healthcare BDMs point to research and scientific advancements
  - European Tech Innovators, Opinion Leaders, and Broad Elites are also more likely to point to advanced wearables as a healthcare service they're interested in seeing improved by 5G
    - Healthcare BDMs are especially likely to say they want 5G to improve advanced security for healthcare records

1 Opinion Leaders are looking for companies to deliver enhanced mobile broadband with faster speeds, reliable extended coverage, at an affordable price

What would you like to see from a company that promises to deliver enhanced mobile broadband?
Asked of Opinion Leaders

- *"**Faster speeds** and at **lower prices**, and also better services." – Chinese Opinion Leader*
- *"**Reliability**, extensive experience with **coverage** throughout the country." – French Opinion Leader*
- *"**Reliable**, **fast service** allowing more devices to work together **without any slowdown** in speed or processing." – US Opinion Leader*
- *"**Full coverage** in rural areas." – UK Opinion Leader*
- *"**Ultra reliability**, clarity, and **speed**." – US Opinion Leader*
- *"I want to be able to enjoy services with **improved speeds** through my mobile phone." – Korean Opinion Leader*
- *"**Stability**, **consistency**, wide range, and **low price** of services." – Korean Opinion Leader*
- *"A **top-quality service without any outages**." – French Opinion Leader*
- *"Provide **fully functional**, service-oriented technology and **affordable rates**." – German Opinion Leader*
- *"**Low-cost cell** phone rates and on a short-term basis and **constant network reception everywhere**." – German Opinion Leader*
- *"**Lower costs, better quality** of service." – Chinese Opinion Leader*
- *"An **enjoyable experience** and **reasonable costs**." – Chinese Opinion Leaders*
- *"**Guaranteed coverage** in areas where radio waves cannot currently reach, such as subways and tunnels." – Japanese Opinion Leader*
- *"An **improved Internet of Things**." – Korean Opinion Leader*
- *"A very **high data rate**, a **constant**, secure, wire-free connection at **low tariffs**." – German Opinion Leader*

Q55: What would you like to see from a company that promises to deliver enhanced mobile broadband? Asked of Opinion Leaders
Open-end responses are based off a smaller subset of random respondents pulled from each country

1 BDMs feel their business is most likely to adopt 5G-enabled connectivity in difficult conditions, as well as fiber to the home

- BDMs in Asia (especially in China) are most likely to adopt 5G innovations that involve tactile internet
- US BDMs in the Cloud Computing, Healthcare, and Automotive industries are most drawn to connectivity in demanding conditions
- Roughly 1 in 5 Telecom BDMs, as well as US Cloud Computing BDMs, say their company would be likely to adopt ultra-HD streaming

Which of the following innovations enabled by 5G mobile broadband would your company most likely adopt?
Ranked by BDM All SMEs

	BDMs																			
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Connectivity in demanding conditions	22	27	27	19	23	22	13	7	39	22	24	8	29	24	11	8	30	17	15	12
Wireless broadband fiber to the home	22	19	23	14	37	20	25	27	15	30	15	13	16	27	16	16	25	32	16	15
Tactile internet (allows users to transmit the feeling of touch and action in real-time over the internet)	15	7	14	22	4	16	9	13	12	9	16	39	7	11	24	31	11	12	20	24
Ultra-HD video streaming	11	15	12	10	20	16	16	17	17	9	9	13	12	9	5	9	11	16	16	17
Virtual reality	12	12	8	13	8	12	11	13	12	18	17	16	9	8	19	17	9	7	16	23
3D video telepresence	6	7	8	9	5	9	19	23	3	5	8	11	12	8	12	17	3	9	8	9

Q5GAdopt2: Which of the following innovations enabled by 5G mobile broadband would your company most likely adopt? Omitting “other” and “none of the above”
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

1 Tech Innovators are most likely to leverage wireless fiber to the home, ultra-HD streaming, and virtual reality

- Nearly 1 in 5 Asian Tech Innovators are drawn to 5G innovations surrounding tactile internet
- EMEA Tech Innovators also look to connectivity in demanding conditions

Which of the following innovations enabled by 5G mobile broadband would you be most likely to leverage in the development of new products or services?
Ranked by USA Tech Innovators

	Tech Innovators		
	USA	EMEA	Asia
Wireless broadband fiber to the home	21	30	17
Ultra-HD video streaming	19	19	17
Virtual reality	18	16	22
Connectivity in demanding conditions	17	17	14
3D video telepresence	8	5	7
Tactile internet (allows users to transmit the feeling of touch and action in real-time over the internet)	7	8	17

Q5GAdopt3: Which of the following innovations enabled by 5G mobile broadband would you be most likely to leverage in the development of new products or services? Omitting “other” and “none of the above”
Tech Innovators (US n=150, EMEA n=227, Asia n=225)

Top 3 options per audience

1 Wireless broadband fiber to the home is one of the most interesting 5G innovations to Elites and Tech Enthusiasts

- Roughly 1 in 4 Elites and Tech Enthusiasts in the US are also drawn to connectivity in demanding conditions, while a quarter of Asian Elites and Tech Enthusiasts look to virtual reality and tactile internet

Which of the following innovations enabled by 5G mobile broadband are you most interested in? *Ranked by USA Broad Elites*

	Broad Elites			Tech Enthusiasts		
	USA	EMEA	Asia	USA	EMEA	Asia
Wireless broadband fiber to the home	31	40	20	27	42	25
Connectivity in demanding conditions	28	17	14	23	19	13
Virtual reality	13	11	22	16	10	25
Tactile internet (allows users to transmit the feeling of touch and action in real-time over the internet)	12	10	24	17	11	21
Ultra-HD video streaming	8	11	10	10	12	11
3D video telepresence	5	7	9	5	4	3

Q5GAdopt1: Which of the following innovations enabled by 5G mobile broadband are you most interested in? Omitting “other” and “none of the above”
Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

1a Most business audiences list improved training and customer service experiences as the top benefits of virtual reality for their company

- Telecom, Healthcare, and Automotive BDMs in EMEA and Asia also believe the top benefits of virtual reality will include enhanced communication through 360 video
- Roughly 1 in 3 Healthcare BDMs and Telecom BDMs say virtual reality could also lead to reduced operational costs

How do you think your company could benefit from using virtual reality technologies?
Up to 3 responses permitted, Ranked by All

	BDMs																				Tech Innovators		
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive						
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia
Improved customer experience	37	39	39	29	55	45	27	39	45	47	48	51	43	39	32	41	41	35	37	43	39	37	33
Improved training opportunities using virtual reality	31	39	28	32	28	28	29	27	39	43	32	37	40	29	31	35	25	31	39	41	34	33	35
Reduced operational costs	30	29	32	34	33	38	39	39	32	30	23	37	37	33	36	41	22	39	27	28	26	20	23
Enhanced communication with employees through 360 virtual reality video	29	31	26	28	32	38	48	49	39	28	33	40	36	29	28	52	18	31	39	49	24	29	28
Reduced travel and commute times by leveraging virtual reality instead of traveling	29	35	31	31	32	25	39	39	32	32	32	43	23	29	29	25	24	31	32	40	31	30	22
Expanded customer base to those who are outside of your physical market	26	24	24	32	35	29	36	36	33	24	32	37	21	23	20	29	25	21	33	37	25	21	25
Facilitate the development of new products through prototyping	22	21	19	24	35	28	28	33	43	26	27	43	12	17	12	32	18	17	41	41	26	32	35

Q56: How do you think your company could benefit from using virtual reality technologies? Select up to 3 choices. Omitting "other" and "none of the above"
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75), Tech Innovators (US n=150, EMEA n=227, Asia n=225)

Top 3 options per audience

1a Elites and Tech Enthusiasts are most interested in virtual reality technology involving enhanced entertainment, experiencing new products, and improved cultural experiences

Which of the following uses of virtual reality would you be interested in using?
Up to 3 responses permitted, Ranked by USA Broad Elites

	Broad Elites			Tech Enthusiasts		
	USA	EMEA	Asia	USA	EMEA	Asia
Enhanced entertainment (i.e. immersive gaming, movies, or shows)	34	30	42	48	38	44
Experiencing new products through virtual reality before purchase	31	24	26	32	35	32
Enhanced cultural experiences (i.e. virtual travel or museum visits)	30	40	38	25	26	33
Clinical healthcare treatment and rehabilitation (i.e. fully immersive 3D-simulation in the treatment of autism, PTSD, and phobias)	28	29	32	28	24	36
Virtual participation in live events	27	25	23	36	28	27
Virtual training programs or workplace simulations	27	19	19	25	19	24
Immersive education	25	25	18	25	21	19
360 virtual reality video-conferencing	22	21	33	26	23	23
Virtual reality fitness or training	18	19	24	23	21	25
Enhanced meditation experiences	7	8	11	7	12	11

Q57: Which of the following uses of virtual reality would you be interested in using? Select up to 3 choices. Omitting “other” and “none of the above”
Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

1a Half of respondents feel patients and healthcare professionals will benefit from using virtual reality technologies

- Tech Enthusiasts are especially likely to feel they will personally benefit from virtual reality
- Tech Innovators are especially likely to see benefits for gamers

Who do you believe can benefit from using virtual reality technologies?
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Patients and healthcare professionals	48	51	46	40	63	36	39	50	45	52	47	53	44	59	44	40	57
Gamers	39	36	35	36	36	53	54	50	28	40	51	21	37	40	36	40	41
Students and educators	38	36	45	29	29	42	30	33	44	37	49	49	40	36	50	39	36
Emergency response teams (police officers or firefighters)	36	38	39	41	38	36	32	31	45	37	29	41	31	26	36	33	35
Pilots, commercial drivers, or train operators	33	35	35	37	35	32	32	35	36	32	36	29	23	38	28	31	32
Myself	32	26	29	27	24	27	27	26	35	31	27	42	40	30	46	44	39
Disabled or elderly individuals	26	24	17	29	25	20	23	28	19	27	27	23	32	32	25	27	35
Soldiers	18	19	26	22	10	25	26	10	27	25	7	22	17	11	23	15	7

Q58: Who do you believe can benefit from using virtual reality technologies? Select up to 3 choices. Omitting “other” and “none of the above”
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

1a BDMs across most verticals are likely to recognize the benefits virtual reality can bring to patients and healthcare professionals

- Roughly 1 in 3 Telecom BDMs say gamers will benefit the most from virtual reality
- More than 1 in 3 Automotive BDMs believe transportation operators will benefit the most
- BDMs also recognize that virtual reality can benefit emergency response teams

Who do you believe can benefit from using virtual reality technologies?
Up to 3 responses permitted, Ranked by All

	All	BDMs																		
		BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Patients and healthcare professionals	48	51	46	40	63	48	39	55	52	40	32	56	61	64	52	69	77	34	27	55	64
Gamers	39	36	35	36	36	39	46	32	33	35	53	39	41	23	25	25	31	38	36	33	31
Students and educators	38	36	45	29	29	45	26	45	41	41	32	28	37	53	27	43	44	36	29	32	40
Emergency response teams (police officers or firefighters)	36	38	39	41	38	37	28	27	31	43	24	40	48	35	47	39	48	49	29	40	43
Pilots, commercial drivers, or train operators	33	35	35	37	35	35	34	32	36	35	32	41	44	27	23	33	25	37	40	43	48
Myself	32	26	29	27	24	45	34	32	31	37	39	25	19	32	28	23	21	33	33	25	27
Disabled or elderly individuals	26	24	17	29	25	13	24	33	33	20	29	27	28	20	33	25	16	17	27	29	25
Soldiers	18	19	26	22	10	23	16	11	12	27	28	13	12	27	23	7	8	34	32	15	8

Q58: Who do you believe can benefit from using virtual reality technologies? Select up to 3 choices. Omitting “other” and “none of the above”
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

1a Most audiences say tactile internet is most likely to enable quality remote healthcare and enhanced virtual reality experiences

- EMEA and Asian respondents are especially likely to believe tactile internet can provide enhanced experiences for those individuals with disabilities
- Roughly half of US BDMs, Elites, and Tech Enthusiasts also see possibilities for increased educational opportunities

Which of the following do you think tactile internet could enable?
Up to 3 responses permitted, Ranked by All

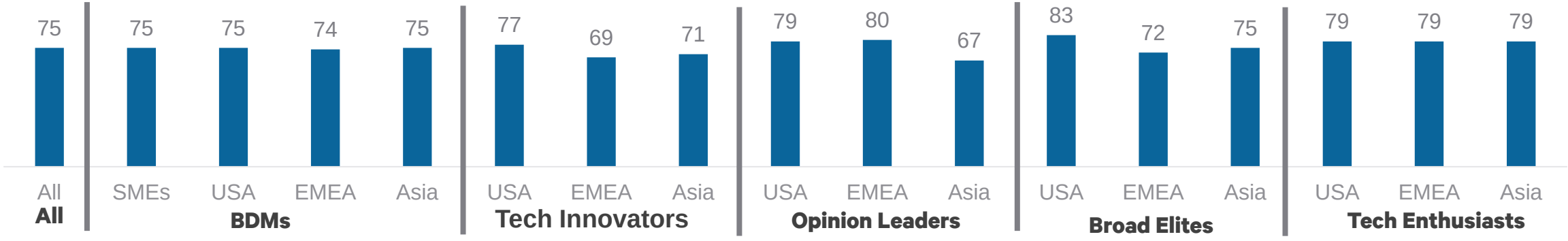
	BDMs				Tech Innovators			Broad Elites			Tech Enthusiasts		
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Increased opportunity for quality remote healthcare experiences	48	53	40	56	43	42	48	48	51	55	48	46	54
Enhanced virtual reality experiences	46	47	45	50	52	42	46	49	44	55	51	44	57
Enhanced experiences for individuals who are disabled or elderly	38	35	44	38	36	42	40	45	44	48	43	45	50
Improved customer experience	38	39	36	34	40	34	36	29	29	34	36	32	39
Increased educational opportunities	37	50	36	23	46	38	29	51	43	35	57	42	27
Development of autonomous vehicles with advanced safety capabilities	35	29	37	40	32	33	35	26	34	40	37	36	42

Q59: Which of the following do you think tactile internet could enable? Select up to 3 choices. Omitting “other” and “none of the above”
BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

2 More than 2 in 3 believe new technologies can greatly improve mission critical services in their country

Which of the following is closer to your view? *When it comes to mission critical services (emergency response, etc.) in my country…*
% 'New technologies can greatly improve the mission critical services in my country'



When it comes to mission critical services (emergency response, etc.) in my country…	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
New technologies can greatly improve the mission-critical services in my country	75	75	75	74	75	77	69	71	79	80	67	83	72	75	79	79	79
The current technology in place is effectively delivering on the mission-critical needs in my country	25	25	25	26	25	23	31	29	21	20	33	17	28	25	21	21	21

Q79: Which of the following is closer to your view? When it comes to mission critical services (emergency response, etc.) in my country…
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

2 Significant investments in 5G by companies and governments are necessary to improve emergency response services, increase access to healthcare, and enhance remote utility monitoring

- US and Asian Broad Elites also more likely to feel it's worthwhile if it reduces traffic congestion and auto accidents

Please complete the following sentence: *Significant investments in 5G by companies and governments are necessary to…*
Up to 3 responses permitted, Ranked by All

	BDMs				Tech Innovators			Broad Elites			Tech Enthusiasts		
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Increase access to healthcare and robotic surgery	54	52	49	60	47	48	53	61	57	60	64	56	62
Improve emergency response services	49	56	47	43	51	44	42	53	48	51	58	52	50
Enhance remote utility monitoring (oil, gas, water)	42	40	44	49	48	39	49	37	42	43	40	37	52
Reduce traffic congestion and automobile accidents	39	39	33	40	32	32	39	51	39	49	40	35	44
Develop alternative sources of energy	33	39	34	34	32	25	23	28	24	29	43	32	34
Decrease carbon emissions	21	19	22	20	15	19	17	19	19	23	16	22	24

Q75: Please complete the following sentence: Significant investments in 5G by companies and governments are necessary to… (Select up to 3 choices) Omitting "other" and "none of the above"
BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

2 Respondents expect increased access to virtual medical care and enhanced industrial automation to have a ‘great deal’ of impact on their country

- Asian respondents tend to expect safer autonomous vehicles, virtual reality, and IoT to have a ‘great deal’ of impact in their country

How much of an impact do you expect each of the following innovations to have on your country?
Showing ‘a great deal’, Ranked by USA Opinion Leaders

	Opinion Leaders			Broad Elites			Tech Enthusiasts		
	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Smarter grids/energy	57	43	29	54	40	36	60	44	40
Enhanced industrial automation	51	55	29	42	39	40	52	42	48
Increased access to virtual medical care	51	48	31	48	39	44	62	44	51
Remote robotic surgery	47	51	32	51	46	42	63	47	46
Improved emergency response	45	48	21	43	40	37	60	49	49
Safer autonomous vehicles	45	41	41	43	43	48	56	38	55
Smarter cities	45	45	27	45	32	40	54	42	39
Internet of Things	45	44	35	44	35	48	52	40	56
Smarter homes	44	40	24	46	41	40	52	42	45
Biometric authentication	44	48	29	39	34	34	48	40	40
Artificial intelligence and machine learning	44	37	27	48	40	42	62	48	48
Virtual reality experiences	43	49	37	43	37	49	55	42	46
3D Printing	41	45	31	49	45	41	51	43	46
Advances in genomics	32	40	28	37	30	32	43	37	37
Next-generation wearables	24	37	28	33	37	36	46	42	43

G60.mA: How much of an impact do you expect each of the following innovations to have on your country?
Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

2 BDMs expect IoT and artificial intelligence will have a great deal of impact on their company

- Healthcare BDMs feel improved emergency response, increased access to medical care, and remote robotic surgery will have a great deal of impact on their company
- Auto BDMs point to safer autonomous vehicles and smarter cities

How much of an impact do you expect each of the following innovations to have on your company? *Showing 'a great deal', Ranked by BDM All SMEs*

	BDMs																			
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Internet of Things	35	39	29	36	45	42	60	69	53	33	48	53	29	40	40	59	29	27	43	57
Safer autonomous vehicles	33	35	31	32	28	34	49	61	39	33	40	52	25	31	37	48	33	48	49	53
Virtual reality experiences	33	42	28	34	33	37	44	45	43	42	35	52	37	35	45	57	28	33	41	57
Improved emergency response	32	35	31	32	41	37	43	49	39	32	37	53	43	40	39	48	32	31	40	48
Smarter cities	31	36	27	32	43	36	48	56	41	30	31	51	20	36	28	52	21	35	48	59
Smarter grids/energy	31	37	35	30	35	39	45	53	47	39	29	45	36	27	24	45	26	37	41	47
Smarter homes	31	35	31	32	35	41	41	41	47	30	35	48	31	41	35	43	26	24	37	45
Next-generation wearables	31	38	35	29	36	39	49	56	41	38	29	52	35	35	29	43	26	35	29	37
3D Printing	31	39	36	33	39	34	41	45	51	37	27	44	27	39	35	40	32	33	44	49
Artificial intelligence and machine learning	31	33	28	35	35	41	53	53	48	37	43	60	35	29	39	45	24	24	51	56
Enhanced industrial automation	30	36	29	26	37	33	49	55	37	28	33	44	29	33	32	55	39	35	40	51
Increased access to virtual medical care	30	31	27	29	29	33	43	48	35	32	36	45	45	40	48	55	20	24	35	45
Remote robotic surgery	29	29	29	31	32	39	52	56	32	26	39	39	40	40	37	52	21	23	33	41
Biometric authentication	29	30	26	25	27	36	48	53	43	28	25	45	28	33	31	53	24	27	43	55
Advances in genomics	24	30	23	20	21	33	31	32	31	25	24	44	29	23	27	39	20	16	35	48

G60.mB: How much of an impact do you expect each of the following innovations to have on your company?
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

2 Tech Innovators feel IoT and virtual reality will have a great deal of impact on the products/services they are developing

- Asian Tech Innovators also feel artificial intelligence and machine learning, smarter cities, and safer autonomous vehicles will have a great deal of impact on the products and services they are designing

How much of an impact do you expect each of the following innovations to have on the products/services you are designing or managing?
Showing 'a great deal', Ranked by USA Tech Innovators

	Tech Innovators		
	USA	EMEA	Asia
Internet of Things	41	33	32
Virtual reality experiences	40	31	30
3D Printing	37	26	24
Improved emergency response	36	29	20
Smarter homes	35	29	28
Artificial intelligence and machine learning	34	30	30
Safer autonomous vehicles	33	30	31
Smarter grids/energy	33	26	20
Next-generation wearables	33	33	30
Biometric authentication	32	22	24
Enhanced industrial automation	31	30	24
Increased access to virtual medical care	30	26	27
Remote robotic surgery	29	26	26
Smarter cities	27	26	30
Advances in genomics	25	23	20

G60.mC: How much of an impact do you expect each of the following innovations to have on the products/services you are designing or managing?
Tech Innovators (US n=150, EMEA n=227, Asia n=225)

Top 3 options per audience

2 Respondents believe 5G is very important to increased access to virtual medical care, safer autonomous vehicles, enabling remote robotic surgery, improved emergency response, and the Internet of Things

How important is 5G to enabling each of the following innovations?
Showing 'very important', Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Safer autonomous vehicles	48	47	51	45	40	51	40	37	48	47	41	49	46	52	63	47	53
Improved emergency response	47	46	53	47	42	42	36	34	55	43	32	49	44	42	64	54	53
Increased access to virtual medical care	47	44	54	41	43	49	36	33	55	47	44	57	44	44	66	50	53
Internet of Things	47	43	46	45	40	56	44	37	55	51	51	51	44	52	62	39	53
Remote robotic surgery	46	45	55	47	45	47	37	36	65	49	36	51	46	42	59	49	52
Virtual reality experiences	45	41	55	39	36	55	41	33	44	41	36	48	46	46	59	46	49
Smart grids/energy	44	44	58	42	38	45	34	28	53	47	33	59	37	39	67	43	42
Smarter cities	43	42	51	42	36	46	37	35	55	49	33	52	38	43	60	42	40
Artificial intelligence and machine learning	43	41	49	43	31	43	37	30	41	48	29	51	40	38	66	43	52
Enhanced industrial automation	41	41	52	42	36	36	33	27	53	43	32	51	38	37	57	36	50
Smarter homes	41	40	47	41	34	42	31	31	49	48	35	46	40	38	55	46	43
Next-generation wearables	39	39	43	46	34	41	34	31	40	39	27	37	37	33	53	36	40
Biometric authentication	36	37	43	31	33	34	24	23	47	37	27	47	34	29	51	39	39
Advances in genomics	35	35	43	32	29	29	23	28	39	32	36	43	29	34	46	33	41
3D printing	34	34	47	33	30	27	23	22	31	37	23	37	38	36	45	28	40

G60.mD: How important is 5G to enabling each of the following innovations?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

2 Vertical BDMs feel 5G is very important to enabling remote robotic surgery, access to virtual medical care, improved emergency response, smarter grids, and safer autonomous vehicles

How important is 5G to enabling each of the following innovations?
Showing 'very important', Ranked by All

	All	BDMs																		
		BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Safer autonomous vehicles	48	47	51	45	40	51	49	49	57	56	50	53	55	44	51	41	47	59	51	48	55
Improved emergency response	47	46	53	47	42	51	47	44	53	55	42	45	55	53	55	43	53	51	40	48	57
Increased access to virtual medical care	47	44	54	41	43	47	45	47	59	60	45	55	55	64	49	43	52	53	33	39	48
Internet of Things	47	43	46	45	40	47	39	49	51	56	45	45	49	43	47	43	61	49	27	53	65
Remote robotic surgery	46	45	55	47	45	41	38	55	57	56	47	45	47	64	55	40	49	50	33	40	48
Virtual reality experiences	45	41	55	39	36	40	46	44	49	57	39	43	55	48	44	41	49	49	37	40	51
Smart grids/energy	44	44	58	42	38	47	46	47	53	60	47	37	55	51	40	32	57	51	39	35	43
Smarter cities	43	42	51	42	36	55	43	59	61	49	42	40	59	44	39	40	49	51	40	45	51
Artificial intelligence and machine learning	43	41	49	43	31	43	36	47	52	53	41	48	51	44	41	44	57	47	36	48	51
Enhanced industrial automation	41	41	52	42	36	36	39	40	55	57	46	39	51	49	43	47	49	51	33	39	55
Smarter homes	41	40	47	41	34	40	34	44	55	63	39	37	49	39	39	39	47	49	37	37	44
Next-generation wearables	39	39	43	46	34	43	37	47	49	48	45	41	47	43	43	39	51	38	31	36	43
Biometric authentication	36	37	43	31	33	31	41	40	45	49	36	28	39	41	45	35	52	42	27	39	56
Advances in genomics	35	35	43	32	29	35	29	48	53	51	25	27	45	43	32	25	43	45	29	41	49
3D printing	34	34	47	33	30	44	38	31	35	47	32	29	36	43	47	35	39	43	27	36	45

G60.mD: How important is 5G to enabling each of the following innovations?
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

2a The top benefits of having autonomous vehicles on the road include fewer traffic accidents, less distracted driving, and increased access to transportation for disabled or senior citizens

- EMEA and Asian respondents are also more likely to point to less congestion as a key benefit

Which do you believe are the benefits of having autonomous vehicles on the road?
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Fewer traffic accidents	44	41	47	38	46	47	51	40	45	41	43	48	48	51	46	48	49
Increased access to transportation for individuals who are disabled or senior citizens	33	31	25	30	41	32	32	40	39	43	41	28	26	43	34	28	40
Less distracted driving	29	31	35	29	26	33	23	24	31	36	24	31	28	30	41	27	25
Less congestion	27	26	17	29	30	26	32	35	24	19	35	27	30	34	19	28	31
Less stressful commutes	25	24	21	23	24	23	26	20	31	33	23	31	28	18	25	29	21
Reduce the frequency of DUIs	25	24	27	19	28	26	23	26	28	20	19	23	23	21	32	22	30
Increased productivity or ability to focus on other tasks	22	20	19	21	25	21	19	27	20	20	29	22	18	29	21	13	28
Fewer carbon emissions	18	19	18	22	13	17	19	10	16	17	17	15	20	12	19	27	15
Increased gas mileage	15	16	13	21	9	11	15	11	15	15	15	15	14	10	15	19	13
More quality times with friends/family in the car	14	14	13	13	13	19	11	19	13	19	17	8	10	16	10	13	18
More people ride sharing	12	10	11	12	8	11	11	9	15	9	9	10	10	9	17	9	9

Q76: Which do you believe are the benefits of having autonomous vehicles on the road? Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

2a Extensive testing and proven safety standards and protection against cybersecurity threats are critical to address before autonomous vehicles are widely adopted

- US Tech Innovators, Opinion Leaders, and Tech Enthusiasts are also likely to point to smart grids with sensors as a key area to be addressed
- Roughly 1 in 3 respondents in Asia say there need to be technology industry standards, while EMEA respondents more likely to say there needs to be legislation

Which of the following needs to happen before autonomous vehicles are widely adopted in your country?
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Extensive testing and proven safety standards	45	47	51	38	39	48	42	48	51	40	51	52	46	55	48	41	45
Protection against cybersecurity threats	33	31	29	30	28	45	32	35	36	37	36	34	33	35	32	28	34
Technology industry standards covering the software in autonomous vehicles	29	25	19	29	32	27	22	34	32	32	29	29	24	41	28	26	39
Legislation related to autonomous vehicles	28	28	29	28	34	25	37	25	20	35	15	30	35	29	26	34	24
Smart grids with sensors that can interact with and inform autonomous vehicles	28	27	30	28	29	30	26	25	35	28	25	30	24	30	35	26	32
Wireless sensors on vehicles that communicate with other vehicles and the smart grid	27	26	25	27	25	30	31	24	32	31	31	29	24	24	33	29	22
Option to override the autonomous feature	25	28	29	37	16	23	29	12	31	31	13	31	32	14	26	35	19
Insurance for autonomous vehicles	24	23	27	23	23	21	21	28	23	23	31	25	27	21	25	25	25
Biometric verification of drivers' identity	17	18	13	14	24	15	17	19	12	8	15	8	12	19	11	13	19
Data privacy protections	17	19	16	17	16	18	18	13	15	19	17	13	17	11	19	13	16

Q77: Which of the following needs to happen before autonomous vehicles are widely adopted in your country? Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

2a Testing and safety standards and tech industry standards need to be addressed before auto companies launch autonomous vehicles

- US Auto BDMs would also like to see wireless sensors on vehicles that communicate with other vehicles on that smart grid
- 1 in 3 Auto BDMs in Asia also prioritize insurance
- Chinese Auto BDMs are also looking for biometric verification of drivers' identity and privacy protections
- 1 in 3 EMEA Auto BDMs feel there needs to be legislation related to autonomous vehicles

Which of the following do you think is most important to be addressed before your company widely launches autonomous vehicles?
Up to 3 responses permitted, Ranked by USA Automotive BDMs

	Automotive BDMs			
	USA	EMEA	Asia	China
Extensive testing and proven safety standards	30	32	37	35
Technology industry standards covering the software in autonomous vehicles	29	24	27	24
Wireless sensors on vehicles that communicate with other vehicles and the smart grid	25	21	21	21
Insurance for autonomous vehicles	22	20	33	25
Protection against cybersecurity threats	21	23	27	27
Option to override the autonomous feature	20	20	20	21
My company has no current plans to widely launch autonomous vehicles	20	11	1	1
Smart grids with sensors that can interact with and inform autonomous vehicles	18	23	27	27
Biometric verification of drivers' identity	13	7	23	29
Data privacy protections	11	27	21	29
Legislation related to autonomous vehicles	8	32	25	27
Dedicated emergency response team	7	13	20	20

Q78: Which of the following do you think is most important to be addressed before your company widely launches autonomous vehicles? Omitting "other" and "none of the above"
Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

3 When asked about the Internet of Things, connectivity is top-of-mind

What is the first word or phrase that comes to mind when you hear “Internet of Things”?
Asked of Elites and Tech Enthusiasts

- ***“Total connectivity and intelligence*** *of the machines we depend upon.” – UK Broad Elite*
- ***“Being connected*** *to one another.” – Chinese Broad Elite*
- ***“Super connectivity.”*** *– French Tech Enthusiast*
- *“It is* ***smart internet connection technology*** *that can control everything remotely.” – Korean Broad Elite*
- ***“Connected devices*** *communicating with each other.” – US Tech Enthusiast*
- *“A proposed development of the internet in which everyday objects of* ***network connectivity****, allowing them to send data and receive data.” – US Tech Enthusiast*
- ***“Connecting all devices*** *and technology together.” – US Broad Elite*
- ***“Communication between devices*** *and control systems.” – UK Broad Elite*
- ***“Various ‘things’ are connected to the Internet*** *(not only interconnected but also online) and this mechanism allows mutual control by exchanging information.”- Japanese Broad Elite*
- *“Intelligent objects in the* ***‘Network of everything’ .”*** *– German Broad Elite*
- ***“Any device can connect to the internet.”*** *– UK Tech Enthusiast*
- ***“Nearly all devices will have Internet access and be able to be controlled remotely****, e.g., turning the heating up or down.” – German Tech Enthusiast*
- *“Internet,* ***virtual space, augmented reality,*** *smart watches.” – Korean Tech Enthusiast*
- ***“Virtual Reality****.” – French Broad Elite*

Q80: What is the first word or phrase that comes to mind when you hear “Internet of Things”? Asked of Elites and Tech Enthusiasts
Open-end responses are based off a smaller subset of random respondents pulled from each country

3 Security, costs, productivity, and customer service are the top priorities for business audiences as they prepare to adopt new technologies like IoT

What is your company's top priority as it prepares to adopt new technologies, including the Internet of Things?
Asked of BDMs and Tech Innovators

- *"The need for **enhanced security** and **protection of personal information**." – Korean BDM*
- *"Preserve confidentiality. **Security measures are a top priority**." – Japanese Cloud Computing BDM*
- ***"Security of patient records**." – US Healthcare BDM*
- ***"Ensuring the data is secure**." – UK Tech Innovator*
- *"Quality and **data protection** are paramount." – German Healthcare BDM*
- ***"Productivity** improvement and **security management**." – Japanese Tech Innovator*
- *"Technologies that increase **productivity**, **security**, and accessibility." – US Cloud Computing BDM*
- *"To **lower costs** and stay up to date with new technology." – US BDM*
- *"The **cost and effectiveness** of the technology." – UK BDM*
- ***"Cost-saving** technology." – Chinese Tech Innovator*
- *"Providing a **better customer experience**." – US Tech Innovator*
- *"To embrace new technology as quickly as possible and **improve customer service."** – UK BDM*
- *"A **positive user experience on the customer** side - the benefit must be clearly recognizable." – German Tech Innovator*
- *"To **facilitate fast connection between our company and our customers**" – French BDM*

Q82: What is your company's top priority as it prepares to adopt new technologies, including the Internet of Things? Asked of BDMs and Doers
Open-end responses are based off a smaller subset of random respondents pulled from each country

3 Top benefits of IoT include increased productivity, convenience, and pace of innovation

- European Tech Innovators, Opinion Leaders, and Tech Enthusiasts and US BDMs and Broad Elites believe it will lead to better health monitoring and diagnosis

In your opinion, what are the benefits of the Internet of Things being widely adopted in your country?
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Increased convenience	43	40	38	31	51	49	40	53	43	48	48	38	36	56	44	46	52
Increased productivity	42	39	47	38	44	35	33	39	59	41	52	48	40	47	52	43	42
Increased pace of innovation	36	36	31	41	42	37	32	36	48	28	39	33	35	39	39	27	44
Better health monitoring and diagnosis	32	29	35	27	25	30	32	26	32	40	28	33	33	31	38	33	33
Lower consumer costs for goods and services	23	23	23	23	27	18	22	24	20	23	23	19	27	25	15	18	26
Better educational opportunities	23	26	29	25	16	23	20	16	32	24	11	27	18	15	34	30	18
Improved environmental conditions	20	22	19	22	20	19	17	14	11	15	27	14	20	19	20	16	22
Reduced frequency of traffic accidents	18	17	15	19	20	13	17	16	19	16	20	17	17	18	21	23	18
Less government spending	12	12	13	13	14	13	11	11	7	15	19	8	11	10	9	10	14

Q81: In your opinion, what are the benefits of the Internet of Things being widely adopted in your country? Select up to 3 choices. Omitting “other” and “none of the above”
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

3 Top benefits of adopting tech enabled by IoT include development of new products, decreased operational costs, increased safety and quality of products, and better telecommuting opportunities

- US and EMEA BDMs across industries are also likely to emphasize enhanced communication

What are the potential benefits to your company if you start to adopt technologies enabled by the Internet of Things?
Up to 3 responses permitted, Ranked by BDM All SMEs

	BDMs																				Tech Innovators		
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive						
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia
Decreased operational costs	43	37	44	47	44	36	47	47	36	41	41	53	52	41	41	69	43	51	53	59	27	34	36
Better telecommuting opportunities	41	44	40	36	55	50	37	39	40	33	29	53	35	37	40	53	20	36	43	47	34	31	40
Enhanced communication	39	52	46	30	45	46	35	32	49	53	36	27	63	44	29	33	50	39	33	31	45	36	28
Increased safety and quality of products/offerings	38	39	38	48	40	30	49	53	51	34	35	63	36	37	49	60	30	41	52	56	34	31	35
Development of new products/offerings	37	39	36	36	43	47	61	59	49	54	53	49	33	28	23	32	28	44	48	56	46	45	52
Higher degree of redundancy (i.e. technology back-up or fail-safe)	25	25	18	28	40	29	21	28	36	29	37	43	28	16	25	21	28	17	31	35	31	20	26

Q83: What are the potential benefits to your company if you start to adopt technologies enabled by the Internet of Things? Select up to 3 choices. Omitting “other” and “none of the above”
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75), Tech Innovators (US n=150, EMEA n=227, Asia n=225)

Top 3 options per audience

3a US and EMEA respondents tend to say tech enabled by 5G will benefit healthcare research and scientific advancements, while Asian respondents point to healthcare system operations and efficiency

Thinking about healthcare specifically, do you think that the technologies enabled by 5G will primarily benefit…
Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Healthcare system operations and efficiency	35	35	28	22	44	29	25	48	21	37	45	39	23	44	27	27	40
Research and scientific advancements	32	32	32	42	26	29	32	24	35	37	32	25	37	28	34	40	30
Patient care	16	15	20	16	17	13	22	15	9	17	12	22	20	15	15	13	18
Medical training	10	11	9	10	9	12	10	8	11	4	8	4	11	10	9	12	9
All of the above	7	7	11	9	4	15	10	4	23	3	3	9	7	2	15	8	2

Q84: Thinking about healthcare specifically, do you think that the technologies enabled by 5G will primarily benefit… Omitting "other"
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

3a US and Asian Healthcare BDMs expect technologies enabled by 5G will benefit healthcare system operations, while EMEA Healthcare BDMs point to research and scientific advancements

Thinking about healthcare specifically, do you think that the technologies enabled by 5G will primarily benefit…
Ranked by All

	All	BDMs																		
		BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Healthcare system operations and efficiency	35	35	28	22	44	32	34	39	49	23	25	52	56	33	32	55	52	33	32	43	49
Research and scientific advancements	32	32	32	42	26	36	32	37	33	39	49	24	35	23	35	21	29	21	39	33	33
Patient care	16	15	20	16	17	16	17	11	8	15	8	11	1	24	13	9	4	17	8	11	11
Medical training	10	11	9	10	9	13	11	11	9	9	12	13	8	8	13	9	11	11	15	9	5
All of the above	7	7	11	9	4	3	4	3	0	15	4	0	0	12	5	5	4	17	5	4	1

Q84: Thinking about healthcare specifically, do you think that the technologies enabled by 5G will primarily benefit… Omitting "other"
All (All N=3588), BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

3a Respondents want 5G to enable robotic surgery, virtual reality medical care, and medical training opportunities using virtual reality

- European Tech Innovators, Opinion Leaders, and Broad Elites are also more likely to point to advanced wearables

Which of the following healthcare services would you like to see enabled or improved by 5G?
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Robotic surgery	42	40	45	44	44	36	43	33	45	44	43	49	49	41	43	42	40
Virtual reality medical care	42	43	53	42	48	45	33	40	37	40	43	41	44	50	50	38	45
Medical training opportunities using virtual reality	39	38	39	37	29	39	31	39	48	36	37	43	34	37	46	39	42
Advanced wearables that go beyond monitoring	36	31	29	30	32	38	38	29	32	41	31	33	36	35	40	36	51
Advanced security for healthcare records	33	35	34	34	36	35	27	32	45	28	31	37	22	35	37	32	29
Remote access to healthcare records	33	32	32	32	29	33	31	38	37	39	39	29	31	36	34	32	29
Biometric authentication for patients	25	25	19	23	28	25	25	22	28	24	28	22	23	25	21	28	25

Q86: Which of the following healthcare services would you like to see enabled or improved by 5G? Select up to 3 choices. Omitting “other” and “none of the above”
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

3a Healthcare BDMs are especially likely to say they want 5G to enable advanced security for healthcare records

Which of the following healthcare services would you like to see enabled or improved by 5G?
Up to 3 responses permitted, Ranked by All

	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Robotic surgery	42	40	45	44	44	41	30	53	53	41	47	31	28	37	49	33	29	36	47	43	36
Virtual reality medical care	42	43	53	42	48	43	42	33	36	57	49	48	53	40	33	28	43	34	33	43	41
Medical training opportunities using virtual reality	39	38	39	37	29	41	32	39	40	36	42	39	51	45	39	53	47	36	40	37	43
Advanced wearables that go beyond monitoring	36	31	29	30	32	36	34	31	32	44	34	44	51	37	29	28	29	32	31	39	41
Advanced security for healthcare records	33	35	34	34	36	39	25	32	36	37	30	35	49	39	37	39	43	33	37	37	40
Remote access to healthcare records	33	32	32	32	29	43	21	37	41	29	32	28	29	36	36	29	39	34	20	35	40
Biometric authentication for patients	25	25	19	23	28	28	30	29	28	32	22	19	23	17	24	35	35	17	28	39	43

Q86: Which of the following healthcare services would you like to see enabled or improved by 5G? Select up to 3 choices. Omitting “other” and “none of the above”
All (All N=3588), BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

3a Respondents believe technologies enabled by 5G will lead to more accurate diagnoses of illnesses, earlier diagnoses, and secure access to medical records from any location

Thinking about healthcare specifically, how do you think that the technologies enabled by 5G will benefit patient care?
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
More accurate diagnoses of illnesses	32	32	33	32	35	25	27	32	44	31	32	35	33	34	30	33	36
Earlier diagnoses of illnesses	30	30	30	33	29	21	27	27	27	27	33	32	31	34	36	34	35
Secure access to medical records from any location	27	25	21	25	28	33	23	37	33	25	31	29	23	32	27	22	25
Reduced costs	23	23	21	24	23	29	23	15	27	19	15	25	23	21	27	20	22
Improved patient experience	22	23	33	18	12	24	24	19	25	21	13	29	17	16	27	22	17
Less invasive treatment and monitoring for chronic illnesses	21	20	21	18	20	18	19	24	19	27	25	27	17	23	26	18	23
New cures for diseases	19	21	15	15	28	12	12	19	12	20	24	16	14	23	20	20	28
Less invasive surgeries	19	18	27	24	14	17	23	10	28	31	21	20	21	12	22	20	14
Customizable treatment plans	19	18	15	16	19	18	14	18	19	19	24	18	19	21	21	16	26
Improved rehabilitation and recovery programs	19	18	13	17	21	16	18	20	20	19	24	11	19	24	13	16	24
Enhanced treatment for chronic illnesses	16	15	17	15	12	18	15	9	16	17	8	19	17	11	18	15	12
Reduced length of hospital stays	14	14	15	17	12	15	16	8	13	19	9	11	16	14	14	20	8

Q85: Thinking about healthcare specifically, how do you think that the technologies enabled by 5G will benefit patient care? Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

3a Healthcare BDMs feel technologies enabled by 5G will lead to improved patient experience, earlier and more accurate diagnoses, and more secure access to medical records

Thinking about healthcare specifically, how do you think that the technologies enabled by 5G will benefit patient care?
Up to 3 responses permitted, Ranked by All

	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
More accurate diagnoses of illnesses	32	32	33	32	35	19	25	31	29	31	28	39	32	25	28	35	40	29	35	25	23
Earlier diagnoses of illnesses	30	30	30	33	29	25	29	20	25	29	36	31	15	29	28	25	21	28	32	32	31
Secure access to medical records from any location	27	25	21	25	28	35	20	21	17	20	18	27	20	28	44	31	20	22	25	21	19
Reduced costs	23	23	21	24	23	28	24	28	32	23	34	23	15	23	20	19	21	18	23	29	27
Improved patient experience	22	23	33	18	12	28	24	24	27	33	29	21	36	35	25	28	31	36	17	15	23
Less invasive treatment and monitoring for chronic illnesses	21	20	21	18	20	25	17	21	25	23	17	23	43	21	16	24	24	24	9	17	25
New cures for diseases	19	21	15	15	28	16	13	21	27	20	25	20	23	13	19	24	21	17	24	28	25
Less invasive surgeries	19	18	27	24	14	13	14	21	24	19	18	12	24	19	23	16	19	20	28	20	23
Customizable treatment plans	19	18	15	16	19	25	21	19	16	16	12	20	12	27	12	21	25	11	16	28	31
Improved rehabilitation and recovery programs	19	18	13	17	21	20	22	24	27	20	20	24	39	13	17	16	17	13	13	17	19
Enhanced treatment for chronic illnesses	16	15	17	15	12	20	21	17	21	27	20	11	21	25	9	8	16	17	19	21	25
Reduced length of hospital stays	14	14	15	17	12	20	21	16	15	12	13	12	13	15	12	9	20	9	16	16	16

Q85: Thinking about healthcare specifically, how do you think that the technologies enabled by 5G will benefit patient care? Select up to 3 choices. Omitting "other" and "none of the above"
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

APPENDIX

APPENDIX: SUPPLEMENTARY FINDINGS

Supplementary Findings

1. There is low awareness of 5G, which leads to opportunity for education about 5G and its benefits

2. Tech Innovators and Opinion Leaders expect 5G to have ‘a great deal’ of impact on the economy in their country and on the development of new products and services

3. After completing the survey, 84% of respondents agree 5G is worth paying more for

4. While we know speed is important when it comes to wireless connectivity, we were surprised by respondents’ emphasis on cybersecurity, which rises to the top as one of the most critical features for 5G to deliver on

5. Healthcare is among the top industries respondents expect to benefit from technologies enabled by 5G; when asked to think about who can benefit the most from virtual reality, patients and healthcare professionals rise to the top

1 Awareness of 5G is low – especially in the US and EMEA

- There's opportunity for education about 5G

Which of the following innovations, if any, have you heard of before today?
Multiple responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
3D printing	93	92	93	93	91	95	93	84	95	92	93	99	96	94	96	96	91
Virtual reality	91	87	95	85	86	93	93	87	91	85	96	95	89	91	97	94	92
Autonomous vehicles	86	84	75	86	90	82	87	80	81	83	93	87	90	94	75	85	94
Delivery drones	81	76	77	82	78	81	85	67	83	81	80	88	91	87	89	85	85
Robotic surgery	73	72	75	69	74	75	72	55	75	64	77	85	79	73	79	67	76
Internet of Things	64	58	53	51	68	66	65	69	63	45	84	61	68	74	48	40	75
5G	**50**	**46**	**37**	**36**	**48**	**49**	**45**	**56**	**43**	**55**	**63**	**46**	**41**	**52**	**39**	**37**	**68**
Machine learning	45	38	33	38	35	60	54	37	51	40	57	43	45	41	36	31	50

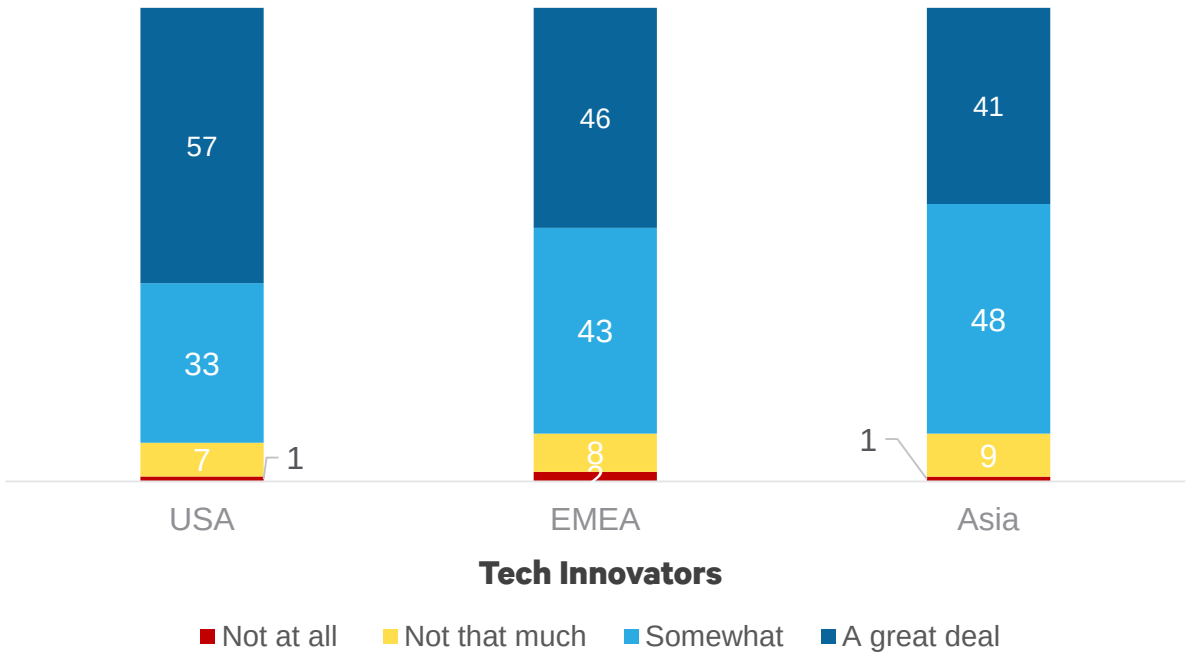
Q1: Which of the following innovations, if any, have you heard of before today? Select all that apply. Omitting "None of the above"
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

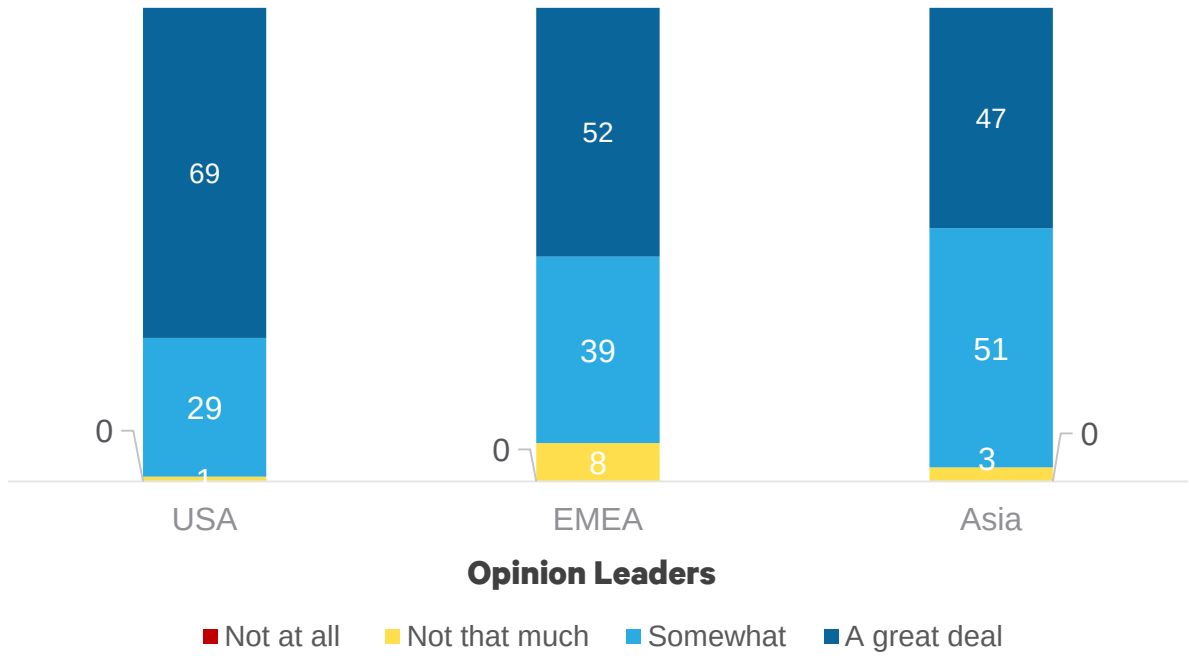
2 Tech Innovators and Opinion Leaders expect 5G to have ‘a great deal’ of impact on the economy in their country and on the development of new products and services

- US respondents are especially likely to feel this way

How much of an impact do you expect 5G will have on the development of new products, services, and innovations in your country?



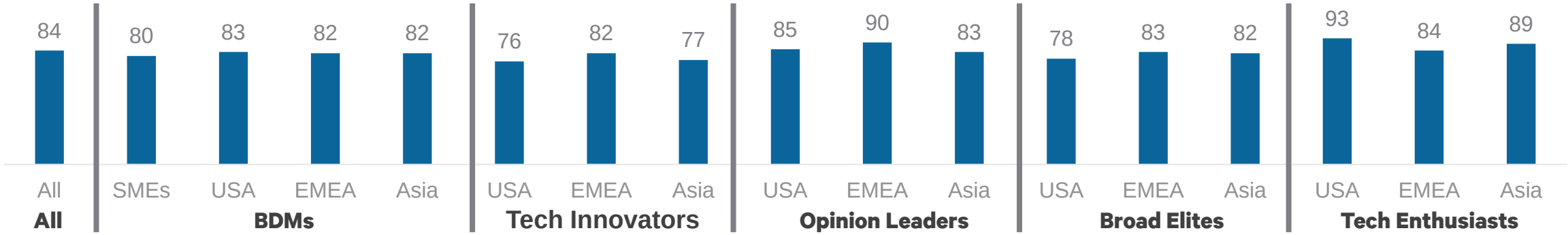
How much of an impact do you expect 5G will have on the economy in your country?



Q5GImpact3: How much of an impact do you expect 5G will have on the development of new products, services, and innovations in your country? Not showing “Not applicable - I don't expect my country will use 5G” (Tech Innovators)
Q5GImpact2: How much of an impact do you expect 5G will have on the economy in your country? Not showing “Not applicable - I don't expect my country will use 5G” (Opinion Leaders)
Tech Innovators (US n=150, EMEA n=227, Asia n=225) Opinion Leaders (US n=75, EMEA n=75, Asia n=75)

3 More than 3 in 4 respondents see the value of 5G – especially Tech Enthusiasts

How strongly do you agree or disagree with the following statement?
Considering the widespread benefits that 5G is expected to provide, 5G is worth paying more for.
% 'Agree (Top 2 Box)'



	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Agree (Top 2 box)	84	80	83	82	82	76	82	77	85	90	83	78	83	82	93	84	89
Disagree (Bottom 2 box)	16	20	17	19	18	23	18	23	15	11	17	22	17	18	6	16	11
Strongly agree	33	30	43	28	30	33	22	26	37	39	23	24	27	30	41	26	35
Somewhat agree	51	50	40	54	52	43	60	51	48	51	60	54	56	52	52	58	54
Somewhat disagree	12	14	11	12	14	17	14	18	12	8	16	17	12	17	5	13	10
Strongly disagree	4	6	6	7	4	6	4	5	3	3	1	5	5	1	1	3	1

Q107: How strongly do you agree or disagree with the following statement?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

4 Strong security and enhanced protections for sensitive data, ultra-high reliability, and extreme data speeds are top benefits for 5G to deliver

Thinking about your company, how important is it for 5G to deliver on each of the following?
% 'Very important'
Ranked by BDM All SMEs

	BDMs																			
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Strong security and enhanced protections for sensitive data	58	67	61	57	55	54	47	53	67	50	61	64	73	68	59	53	61	59	53	56
Ultra-high reliability	53	62	54	47	56	43	55	53	57	51	53	51	63	59	48	56	61	56	53	57
Extreme data speeds	52	62	52	47	64	42	51	56	71	43	55	59	53	53	51	57	62	47	49	51
Extreme user mobility	48	61	51	39	45	46	45	51	60	45	39	44	52	61	36	57	57	41	47	57
Extended coverage to reach challenging locations	46	51	53	31	55	47	47	55	60	49	41	33	49	51	35	47	53	61	47	51
Ultra-low energy consumption – certain types of sensors would have 10+ years of battery life without needing to be charged	45	61	51	37	48	41	45	55	56	50	41	48	44	49	40	45	54	44	43	47
Ultra-high density	42	54	48	35	51	50	47	52	56	47	45	48	39	45	29	44	53	41	36	45
Unified connectivity	36	43	42	32	43	43	43	47	51	30	32	63	37	41	35	47	49	28	37	43
Extreme capacity	36	49	35	29	41	42	45	45	55	34	36	41	44	44	39	52	38	31	31	33
Ultra-low latency to reduce the amount of time it takes devices to respond to each other	35	48	33	25	48	39	41	57	56	38	37	52	37	35	36	47	47	40	32	41
Ultra-low complexity	33	38	34	26	41	30	40	49	43	32	29	39	40	39	25	47	47	33	36	44

G16.mB: Thinking about your company, how important is it for 5G to deliver on each of the following? Answer choices abbreviated.
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75),

Top 3 options per audience

5 Respondents say healthcare and telecommunications will benefit the most from 5G

- 1 in 3 Tech Innovators also believe the cloud computing industry will see major benefits from 5G

What industries do you believe will benefit the most from innovations enabled by 5G?
Up to 3 responses permitted, Ranked by All

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Health Care	42	46	42	35	52	36	27	43	49	32	47	45	37	50	48	40	48
Telecommunications	42	40	41	46	30	51	49	37	43	40	35	44	48	37	34	49	40
Cloud-computing	29	27	17	27	28	33	39	36	24	24	33	16	31	30	19	24	39
Automotive	24	24	11	22	28	11	26	25	13	27	27	17	24	33	22	27	31
Transportation	18	17	22	16	21	12	13	18	17	16	29	17	16	25	21	15	24
Engineering	17	17	23	20	8	23	23	14	32	15	12	17	20	11	13	12	11
Education	16	16	23	11	14	19	16	13	32	20	13	22	16	18	21	18	12
Manufacturing / Production	15	15	21	14	20	11	8	20	16	13	16	23	14	16	15	13	12
Aviation	10	10	10	12	14	5	11	10	9	8	8	9	10	10	10	10	7
Utilities	9	8	12	8	7	11	8	6	4	12	5	16	7	9	15	12	8
Pharmaceuticals	8	10	8	9	12	5	4	7	5	11	7	9	10	7	9	7	8
Renewable energy	8	7	11	11	5	8	13	7	5	9	5	10	9	4	9	13	8
Government	7	6	11	8	3	6	7	3	11	13	1	11	6	4	15	8	3
Shipping (land and air)	7	9	0	9	13	7	8	6	5	9	8	3	5	10	5	6	10
Retail	5	5	7	6	4	6	6	4	1	5	5	3	5	4	8	7	3
Hospitality	4	4	9	2	2	5	3	2	3	4	12	4	3	3	11	3	3
Oil and gas	4	4	3	3	3	5	1	4	1	4	3	7	3	3	3	5	5
Construction	3	3	3	4	3	3	1	2	5	5	1	1	3	2	3	1	3
Farming and agriculture	3	3	4	2	2	1	1	2	3	1	5	6	3	3	1	1	4
Real Estate	2	2	1	5	0	3	1	1	0	5	4	2	3	0	1	2	2
Mining	1	1	2	1	1	0	1	2	0	1	1	1	1	1	1	1	1

Q104: What industries do you believe will benefit the most from innovations enabled by 5G? Select up to 3 choices. Omitting "other" and "none of the above"
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=575), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

5 Half of respondents feel patients and healthcare professionals will benefit from using virtual reality technologies

- Tech Enthusiasts are especially likely to feel they will personally benefit from virtual reality
- Tech Innovators are especially likely to see benefits for gamers

Who do you believe can benefit from using virtual reality technologies?
Up to 3 responses permitted, Ranked by All

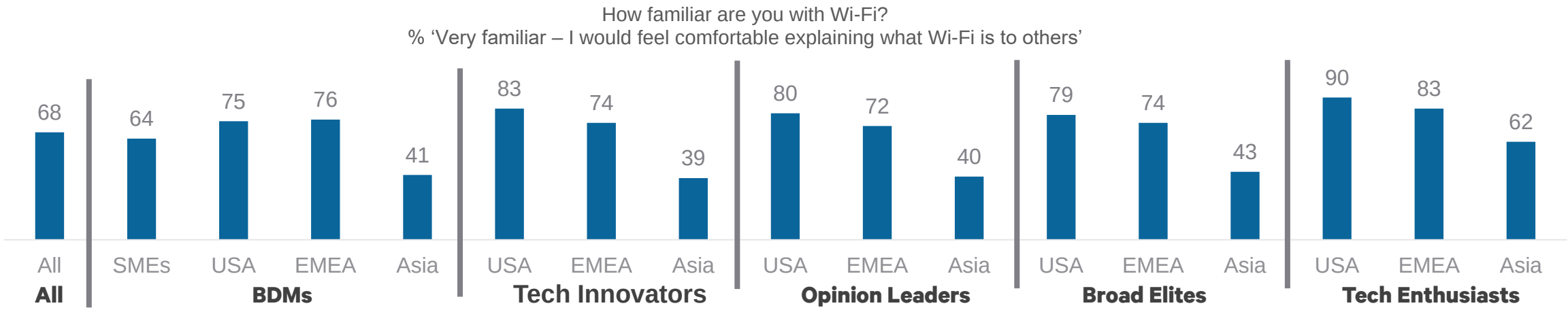
	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Patients and healthcare professionals	48	51	46	40	63	36	39	50	45	52	47	53	44	59	44	40	57
Gamers	39	36	35	36	36	53	54	50	28	40	51	21	37	40	36	40	41
Students and educators	38	36	45	29	29	42	30	33	44	37	49	49	40	36	50	39	36
Emergency response teams (police officers or firefighters)	36	38	39	41	38	36	32	31	45	37	29	41	31	26	36	33	35
Pilots, commercial drivers, or train operators	33	35	35	37	35	32	32	35	36	32	36	29	23	38	28	31	32
Myself	32	26	29	27	24	27	27	26	35	31	27	42	40	30	46	44	39
Disabled or elderly individuals	26	24	17	29	25	20	23	28	19	27	27	23	32	32	25	27	35
Soldiers	18	19	26	22	10	25	26	10	27	25	7	22	17	11	23	15	7

Q58: Who do you believe can benefit from using virtual reality technologies? Select up to 3 choices. Omitting “other” and “none of the above”
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

Top 3 options per audience

APPENDIX: LESSONS FROM 4G

How familiar are you with Wi-Fi?

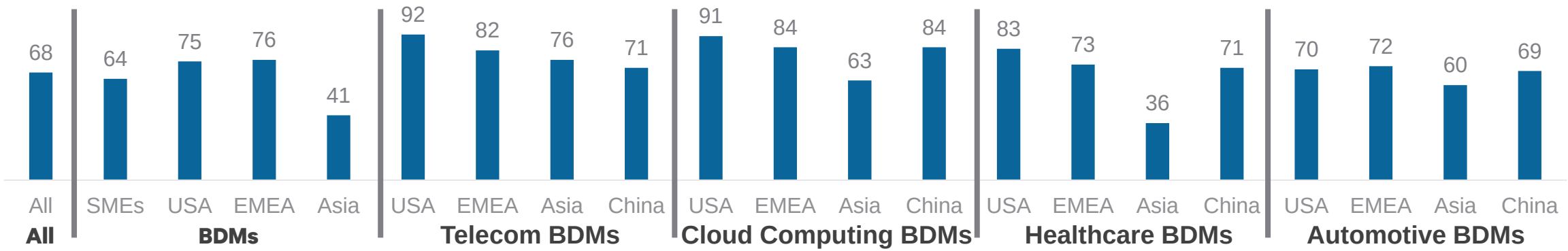


	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Very familiar - I would feel comfortable explaining what Wi-Fi is to others	68	64	75	76	41	83	74	39	80	72	40	79	74	43	90	83	62
I've heard/read about Wi-Fi and have basic knowledge about it	29	31	23	22	49	17	25	54	19	28	56	21	25	48	10	17	36
I've heard the term, but am not that familiar with Wi-Fi	3	4	1	2	8	1	1	7	1	0	4	1	1	9	0	0	2
I've heard the term but nothing else about Wi-Fi	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0
I've never heard of Wi-Fi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Q2: How familiar are you with Wi-Fi?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

How familiar are you with Wi-Fi?

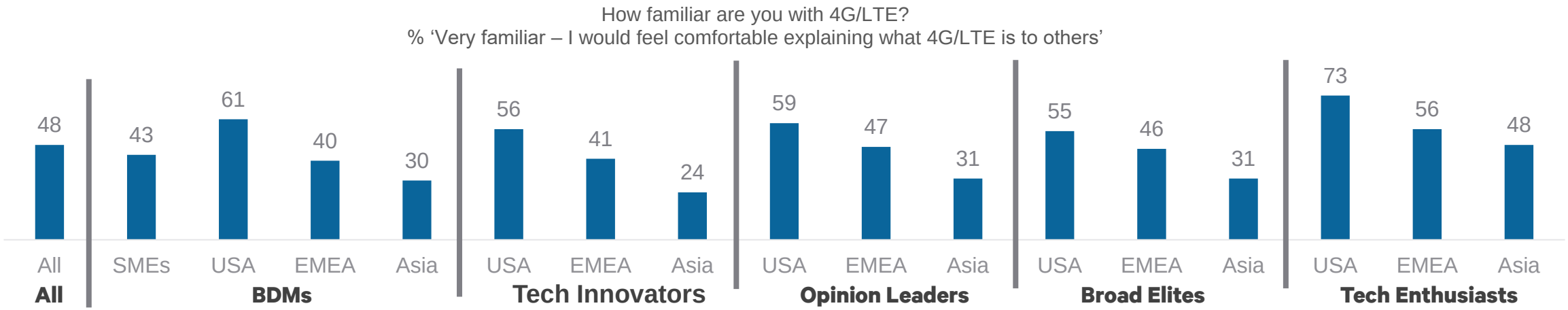
How familiar are you with Wi-Fi?
% 'Very familiar – I would feel comfortable explaining what Wi-Fi is to others'



	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Very familiar - I would feel comfortable explaining what Wi-Fi is to others	68	64	75	76	41	92	82	76	71	91	84	63	84	83	73	36	71	70	72	60	69
I've heard/read about Wi-Fi and have basic knowledge about it	29	31	23	22	49	8	18	23	29	9	14	36	16	17	23	55	28	28	25	32	29
I've heard the term, but am not that familiar with Wi-Fi	3	4	1	2	8	0	0	1	0	0	1	1	0	0	4	5	1	3	3	7	1
I've heard the term but nothing else about Wi-Fi	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0
I've never heard of Wi-Fi	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Q2: How familiar are you with Wi-Fi?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

How familiar are you with 4G/LTE?

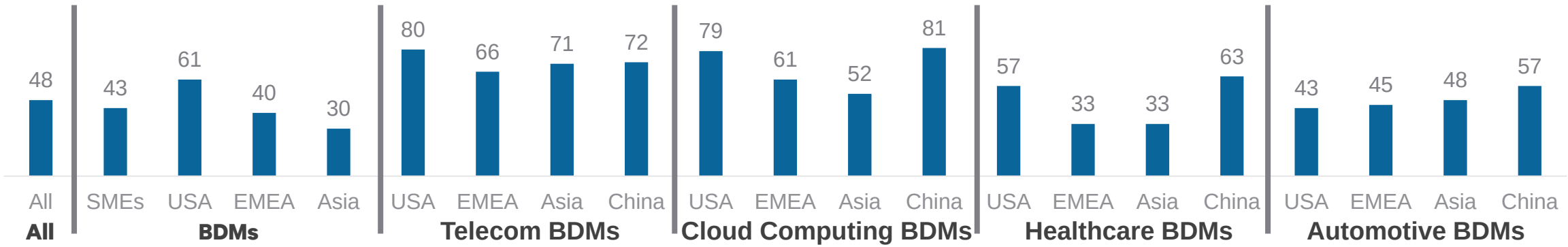


	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Very familiar - I would feel comfortable explaining what 4G/LTE is to others	48	43	61	40	30	56	41	24	59	47	31	55	46	31	73	56	48
I've heard/read about 4G/LTE and have basic knowledge about it	39	40	26	38	50	34	44	54	27	35	53	35	40	52	25	37	49
I've heard the term, but am not that familiar with 4G/LTE	9	11	9	13	14	8	11	20	12	9	15	8	8	12	3	5	3
I've heard the term but nothing else about 4G/LTE	3	4	3	5	5	2	2	2	3	5	0	1	4	4	0	1	0
I've never heard of 4G/LTE	1	2	1	4	1	0	1	0	0	4	1	0	2	0	0	0	0

Q3: How familiar are you with 4G/LTE?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

How familiar are you 4G/LTE?

How familiar are you with 4G/LTE?
% 'Very familiar – I would feel comfortable explaining what 4G/LTE is to others'

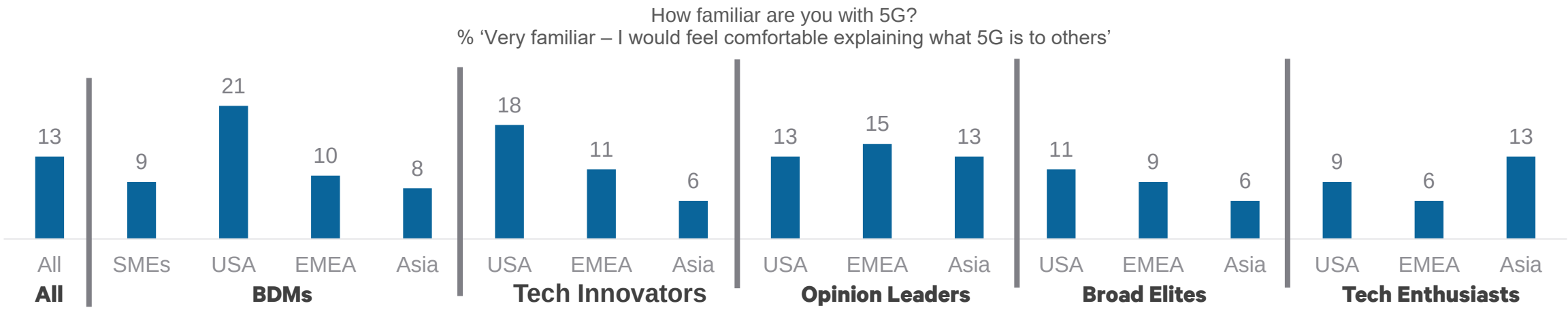


	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Very familiar - I would feel comfortable explaining what 4G/LTE is to others	48	43	61	40	30	80	66	71	72	79	61	52	81	57	33	33	63	43	45	48	57
I've heard/read about 4G/LTE and have basic knowledge about it	39	40	26	38	50	17	26	27	28	17	36	40	17	31	44	45	25	39	35	39	41
I've heard the term, but am not that familiar with 4G/LTE	9	11	9	13	14	1	4	3	0	3	1	8	1	8	15	9	11	13	12	11	1
I've heard the term but nothing else about 4G/LTE	3	4	3	5	5	0	1	0	0	1	1	0	0	3	7	7	1	4	7	1	0
I've never heard of 4G/LTE	1	2	1	4	1	1	3	0	0	0	1	0	0	1	1	5	0	0	1	1	0

Q3: How familiar are you with 4G/LTE?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

APPENDIX: AWARENESS, EXPECTATIONS, AND IMPACT OF 5G

How familiar are you with 5G?

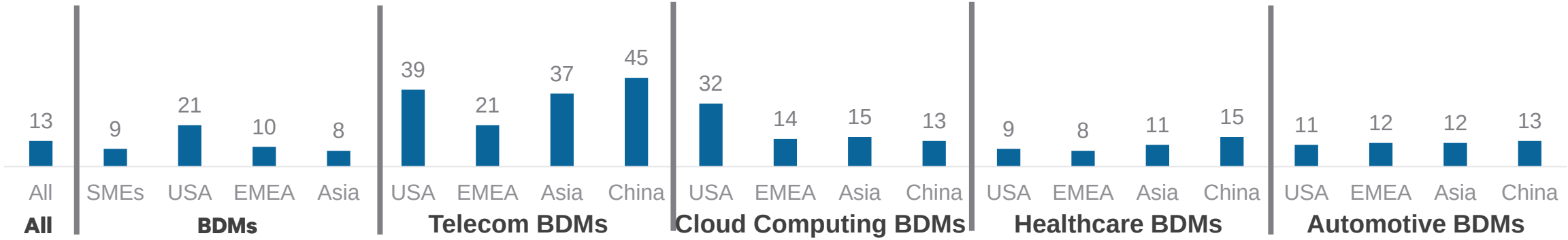


	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Very familiar - I would feel comfortable explaining what 5G is to others	13	9	21	10	8	18	11	6	13	15	13	11	9	6	9	6	13
I've heard/read about 5G and have basic knowledge about it	34	31	35	30	29	27	30	35	35	39	36	29	25	30	38	35	50
I've heard the term, but am not that familiar with 5G	28	31	17	25	34	29	30	37	33	20	36	29	29	39	23	29	25
I've heard the term but nothing else about 5G	11	13	10	14	15	9	11	11	7	12	7	13	17	16	11	12	8
I've never heard of 5G	14	16	17	21	13	16	18	11	12	15	8	17	20	9	19	19	4

Q5: How familiar are you with 5G?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225)

How familiar are you with 5G?

How familiar are you with 5G?
% 'Very familiar – I would feel comfortable explaining what 5G is to others'



	All	BDMs																			
		BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Very familiar - I would feel comfortable explaining what 5G is to others	13	9	21	10	8	39	21	37	45	32	14	15	13	9	8	11	15	11	12	12	13
I've heard/read about 5G and have basic knowledge about it	34	31	35	30	29	43	51	49	49	37	38	32	51	25	35	20	33	22	27	35	37
I've heard the term, but am not that familiar with 5G	28	31	17	25	34	11	13	7	5	24	30	35	21	33	24	41	40	34	25	32	33
I've heard the term but nothing else about 5G	11	13	10	14	15	4	7	5	0	4	12	12	11	9	13	11	4	16	12	15	13
I've never heard of 5G	14	16	17	21	13	4	8	1	0	3	5	7	4	23	20	17	8	17	24	7	3

Q5: How familiar are you with 5G?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

To what extent do you agree or disagree that innovations enabled by 5G will contribute to each of the following?

To what extent do you agree or disagree that innovations enabled by 5G will contribute to each of the following? Top 2 Box % 'Strongly agree or somewhat agree' *Ranked by All (Economic vs. Societal)*

	All	BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Economic Benefits																					
Enable new products, services, and use cases that have not been invented yet	91	89	93	86	89	87	84	86	95	95	88	90	97	95	90	93	95	91	84	89	93
Increase productivity	89	88	91	85	90	90	85	86	92	91	86	86	96	93	88	89	97	94	83	93	96
Allow for new industries to emerge	87	86	86	84	89	96	85	87	92	89	88	84	90	88	91	86	93	85	79	89	94
Make companies more globally competitive	85	84	87	84	87	85	69	89	98	87	90	77	93	87	84	85	92	81	86	92	96
Enable the development and growth of small businesses	82	84	86	84	84	88	78	85	92	93	80	74	91	88	86	91	93	83	83	83	92
Drive economic growth in my country	82	81	87	78	84	84	80	85	89	86	77	80	89	80	79	90	93	83	77	85	96
Improve operational cost efficiencies for your business	82	83	87	80	89	85	84	91	93	89	77	87	93	84	80	86	96	84	69	85	92
Create new jobs	80	79	80	74	82	93	80	83	92	87	73	83	93	83	78	80	94	83	72	88	96
Support economic growth in developing markets	78	77	80	76	76	91	72	87	90	87	85	68	93	83	81	81	91	75	77	84	95
Societal Benefits																					
Make the internet accessible to all	85	84	84	83	87	86	87	90	92	89	84	83	91	85	86	86	94	78	84	86	92
Increase access to education	83	83	88	79	78	88	79	83	90	96	84	76	92	92	83	87	92	83	83	88	97
Increase access to healthcare to more people in more places	79	79	76	71	80	81	72	85	86	81	73	85	92	86	81	84	98	78	77	88	96
Improve quality of healthcare and overall life expectancy	74	73	70	61	80	82	68	84	94	68	68	79	96	77	85	82	92	63	60	81	95
Improve quality of life in cities, including reducing traffic congestion and pollution	73	73	74	65	76	80	76	86	90	84	70	72	88	76	66	83	94	73	67	91	98
Improve safety/security from natural and man-made threats	73	77	76	68	80	80	73	81	89	83	72	77	92	83	74	86	94	75	73	92	97
Lower global energy use	70	69	70	66	72	66	69	74	84	76	66	69	87	64	75	78	88	59	74	86	93
Discover alternative energies	63	65	68	59	69	69	62	70	76	80	62	55	80	60	70	72	89	60	64	87	96
Increase efficiency of water supply	57	59	55	48	63	68	59	73	86	74	47	64	91	44	57	72	92	46	54	78	93
Slow climate change	48	49	38	44	54	49	52	64	76	59	45	54	84	39	52	62	84	28	50	72	92
Reduce world hunger	45	47	40	39	55	52	56	72	82	57	41	54	88	32	40	60	79	32	41	79	95

G27: To what extent do you agree or disagree that innovations enabled by 5G will contribute to each of the following? *Only asked among BDMs and Tech Innovators
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

APPENDIX: INDUSTRY LEADERSHIP

Which countries do you think could benefit most from the adoption of 5G?

Which countries do you think could benefit most from the adoption of 5G?
Up to 3 responses permitted, ranked by All

	All	Broad Elites						
	All	USA	UK	Germany	France	China	Korea	Japan
United States	68	88	56	49	71	76	63	73
China	42	38	28	35	28	80	44	43
Japan	31	29	15	17	31	32	33	55
United Kingdom	23	27	64	11	17	17	1	8
Germany	21	24	25	52	25	16	12	17
South Korea	16	7	8	12	17	12	72	5
India	14	17	21	19	8	12	23	25
Canada	8	17	8	7	3	4	0	0
France	8	5	1	3	33	4	0	0
Dubai	4	2	3	3	5	0	4	4
Brazil	4	5	5	9	3	4	0	3
Bangladesh	3	3	8	8	0	0	1	4
Nigeria	3	3	8	4	0	0	4	4
Taiwan	3	1	3	3	3	3	1	3
Sweden	2	1	5	0	3	1	0	0
Norway	2	1	3	1	4	0	1	0
Italy	2	1	0	1	3	1	0	0
Poland	1	1	3	3	0	1	1	0

Q103: Which countries do you think could benefit most from the adoption of 5G? Omitting “other” and “none of the above”
All (n=3,588), Broad Elites (US n=150, UK n=75, Germany n=75, France n=75, China n=75, Korea n=75, Japan n=75)

Top 3 options per audience

Which countries do you think could benefit most from the adoption of 5G?

Which countries do you think could benefit most from the adoption of 5G?
Up to 3 responses permitted, ranked by All

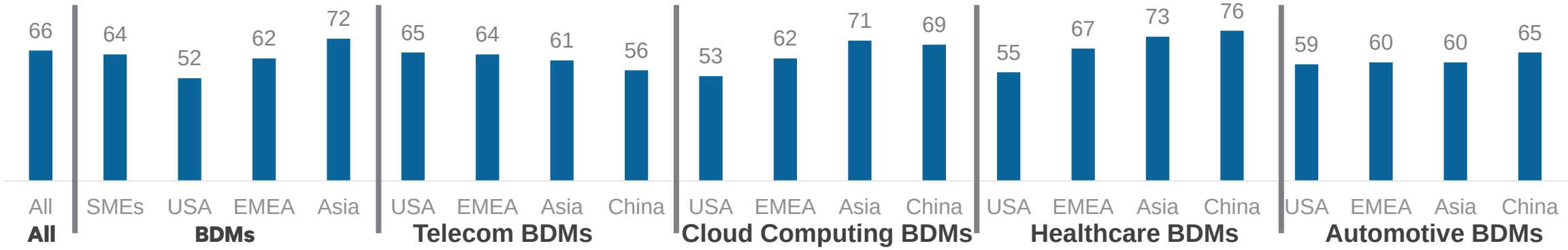
	All	Tech Enthusiasts						
	All	USA	UK	Germany	France	China	Korea	Japan
United States	68	88	64	55	79	68	65	77
China	42	35	25	32	36	81	40	43
Japan	31	37	15	21	37	36	33	57
United Kingdom	23	36	79	16	13	17	8	12
Germany	21	9	12	71	24	13	11	9
South Korea	16	8	7	11	12	11	63	5
India	14	9	17	14	5	21	9	20
Canada	8	21	4	7	8	8	3	1
France	8	7	5	11	43	5	1	1
Dubai	4	5	3	4	12	5	7	7
Brazil	4	1	5	7	0	5	1	3
Bangladesh	3	2	9	7	1	0	1	3
Nigeria	3	5	8	9	1	1	1	1
Taiwan	3	1	1	5	3	1	3	4
Sweden	2	0	1	0	1	1	1	3
Norway	2	0	1	1	0	1	3	3
Italy	2	3	0	4	4	0	0	1
Poland	1	1	0	1	0	0	0	0

Q103: Which countries do you think could benefit most from the adoption of 5G? Omitting “other” and “none of the above”
All (n=3,588), Tech Enthusiasts (US n=151, UK n=75, Germany n=76, France n=75, China n=75, Korea n=75, Japan n=75)

Top 3 options per audience

Which of the following is closer to your view?

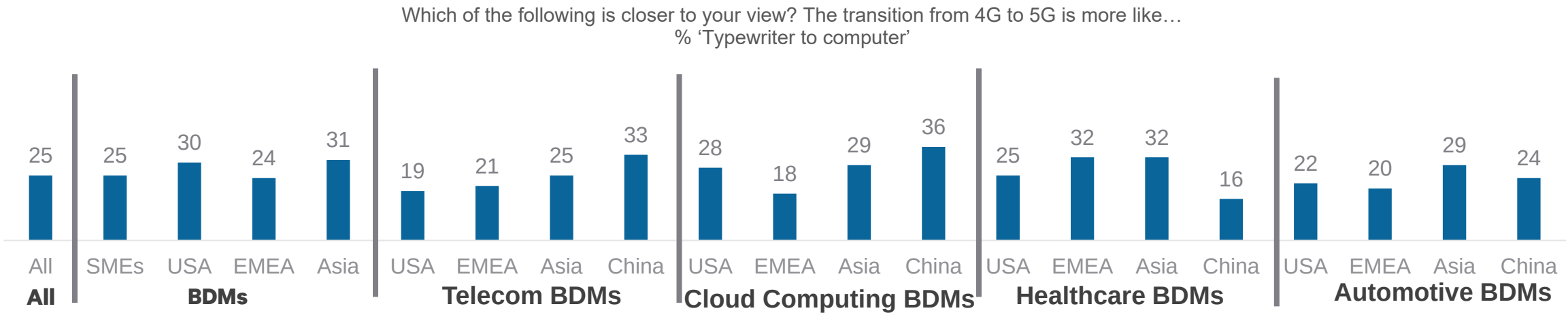
Which of the following is closer to your view?
% 'Companies that are leaders in 4G/LTE, Wi-Fi, and 3G will leverage their success in the development and adoption of 5G'



	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Companies that are leaders in 4G/LTE, Wi-Fi, and 3G will leverage their success in the development and adoption of 5G	66	64	52	62	72	65	64	61	56	53	62	71	69	55	67	73	76	59	60	60	65
Any company, regardless of their involvement in past generations of wireless technologies, can drive the development and adoption of 5G	34	36	48	38	28	35	36	39	44	47	38	29	31	45	33	27	24	41	40	40	35

Q54: Which of the following is closer to your view?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

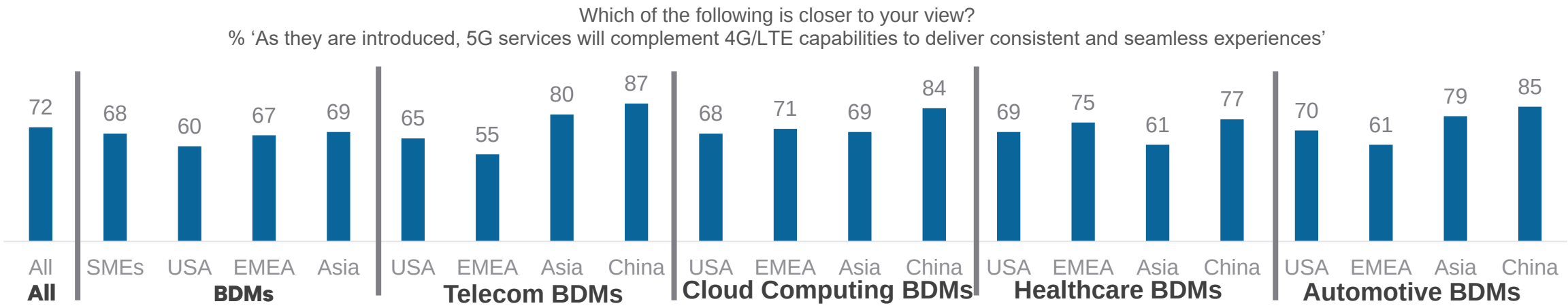
Which of the following is closer to your view?



	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Standard definition TV to high definition TV	75	75	70	76	69	81	79	75	67	72	82	71	64	75	68	68	84	78	80	71	76
Typewriter to computer	25	25	30	24	31	19	21	25	33	28	18	29	36	25	32	32	16	22	20	29	24

Q51: Which of the following is closer to your view? The transition from 4G to 5G is more like…
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Which of the following is closer to your view?



	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
As they are introduced, 5G services will complement 4G/LTE capabilities to deliver consistent and seamless experiences	72	68	60	67	69	65	55	80	87	68	71	69	84	69	75	61	77	70	61	79	85
5G services and capabilities will be fundamentally separate from 4G/LTE capabilities	28	32	40	33	31	35	45	20	13	32	29	31	16	31	25	39	23	30	39	21	15

Q53: Which of the following is closer to your view?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

APPENDIX: BARRIERS AND OPPORTUNITIES FOR GROWTH

If 5G is not made broadly available in your country within the next decade, how concerned are you that each of the follow could occur?

If 5G is not made broadly available in your country within the next decade, how concerned are you that each of the follow could occur?
Showing 'very + somewhat concerned', Ranked by All

	All	BDMs																		
		BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Individuals and companies in my country would be more susceptible to data security threats	71	67	76	69	72	88	75	86	88	76	65	62	57	80	67	81	68	75	64	46	41
My country will become less competitive globally	69	62	73	76	61	78	71	73	88	73	75	65	62	65	69	65	48	66	65	56	47
The pace of innovation will slow down	66	60	68	64	61	87	64	84	90	69	70	62	55	73	64	68	48	67	67	49	38
The economy would suffer	62	57	66	68	53	77	67	78	92	69	62	59	55	67	62	61	44	60	66	48	40
My company will fall behind competitors in my industry	61	53	66	60	61	85	71	84	86	72	72	57	56	56	52	65	47	53	53	42	37

G98: If 5G is not made broadly available in your country within the next decade, how concerned are you that each of the following could occur?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

Generally speaking, when do you think 5G will be broadly adopted in your country?

When do you think 5G will be broadly adopted in your country?

	All	BDMs																		
		BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Less than 5 years	76	75	86	68	73	88	72	76	80	81	69	69	41	88	79	70	64	80	75	60	52
More than 5 years	24	26	15	32	28	11	28	24	20	19	30	30	59	12	21	30	36	20	25	39	48
Less than 3 years	42	42	51	31	41	59	29	36	32	56	39	37	13	56	40	41	27	63	44	32	20
3-4 years	34	33	35	37	32	29	43	40	48	25	30	32	28	32	39	29	37	17	31	28	32
5-7 years	18	18	11	24	18	9	25	11	7	16	22	25	47	11	12	23	28	13	13	21	24
8-10 years	4	6	3	4	7	1	0	13	13	3	4	5	12	1	4	3	4	4	9	17	23
More than 10 years	2	2	1	4	2	1	3	0	0	0	3	0	0	0	5	3	4	3	3	1	1
Never	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0

Q10: Generally speaking, when do you think 5G will be broadly adopted in your country?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

When do you think 5G will be broadly adopted in your company?

When do you think 5G will be broadly adopted in your company?

	BDMs																				Tech Innovators		
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive						
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia
Less than 5 years	59	68	51	53	78	61	76	79	80	61	50	34	69	63	56	64	69	62	52	53	66	46	51
More than 5 years	42	32	49	48	23	38	24	22	19	39	50	67	31	38	44	36	30	37	48	47	35	54	49
Less than 3 years	27	33	21	22	43	18	35	35	40	33	19	11	36	27	28	27	39	25	24	20	32	17	23
3-4 years	32	35	30	31	35	43	41	44	40	28	31	23	33	36	28	37	30	37	28	33	34	29	28
5-7 years	26	23	30	28	17	30	21	19	13	25	36	52	24	19	27	24	18	19	27	23	21	28	29
8-10 years	7	3	9	10	3	5	3	3	4	9	13	12	4	7	5	8	1	9	15	23	5	13	4
More than 10 years	3	1	4	2	3	3	0	0	1	5	0	3	0	8	1	3	4	4	5	1	3	7	5
Never	6	5	6	8	0	0	0	0	1	0	1	0	3	4	11	1	7	5	1	0	6	6	11

Q11: When do you think 5G will be broadly adopted in your company?
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75), Tech Innovators (US n=150, EMEA n=227, Asia n=225)

When do you think you will personally adopt 5G?

When do you think you will personally adopt 5G?

	All	BDMs				Tech Innovators			Opinion Leaders			Broad Elites			Tech Enthusiasts		
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia	USA	EMEA	Asia
Less than 5 years	69	63	74	58	59	77	54	58	77	64	72	75	63	69	89	72	85
More than 5 years	31	36	25	42	40	23	45	42	22	35	28	26	38	30	10	28	15
Less than 3 years	34	32	43	25	26	41	19	27	48	27	29	43	23	33	54	36	44
3-4 years	35	31	31	33	33	36	35	31	29	37	43	32	40	36	35	36	41
5-7 years	21	22	19	25	25	14	26	27	16	20	23	17	28	22	8	21	14
8-10 years	6	7	3	10	9	3	12	7	5	9	5	3	7	5	1	5	1
More than 10 years	2	2	0	2	1	5	4	4	1	5	0	4	2	2	1	2	0
Never	2	5	3	5	5	1	3	4	0	1	0	2	1	1	0	0	0

	All	BDMs																		
		BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Less than 5 years	69	63	74	58	59	84	68	88	92	84	67	53	38	80	76	61	71	72	67	55	56
More than 5 years	31	36	25	42	40	16	31	11	8	16	34	46	62	20	25	39	28	27	33	46	43
Less than 3 years	34	32	43	25	26	44	26	37	37	48	38	24	15	45	28	33	32	42	39	24	23
3-4 years	35	31	31	33	33	40	42	51	55	36	29	29	23	35	48	28	39	30	28	31	33
5-7 years	21	22	19	25	25	15	21	9	5	11	21	32	49	13	11	25	21	13	20	25	21
8-10 years	6	7	3	10	9	1	9	1	3	5	7	13	12	4	4	3	5	4	8	15	21
More than 10 years	2	2	0	2	1	0	1	1	0	0	3	0	1	0	3	3	1	5	0	3	1
Never	2	5	3	5	5	0	0	0	0	0	3	1	0	3	7	8	1	5	5	3	0

Q12: When do you think you will personally adopt 5G?
All (All N=3588), BDMs (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Tech Innovators (US n=150, EMEA n=227, Asia n=225), Opinion Leaders (US n=75, EMEA n=75, Asia n=75), Broad Elites (US n=150, EMEA n=225, Asia n=225), Tech Enthusiasts (US n=151, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

What concerns, if any, do you have about the adoption of 5G?

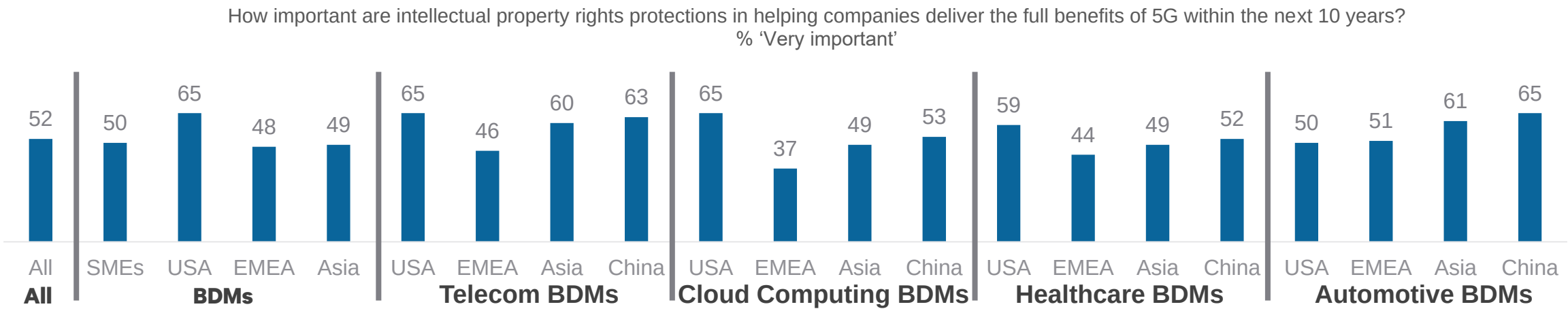
What concerns, if any, do you have about the adoption of 5G?
Up to 3 responses permitted, Ranked by All

	All	BDMs																		
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Consumers and businesses will have to replace all of their devices for ones that are compatible with 5G	30	32	39	30	32	23	25	19	21	40	22	37	31	36	31	29	21	38	24	19	16
The extent of coverage provided by 5G	28	26	23	26	24	29	39	35	35	23	30	32	31	20	23	24	39	17	31	20	24
More susceptible to cybersecurity attacks	25	24	21	25	28	25	22	27	21	20	30	31	29	17	27	28	24	16	21	27	24
Privacy infringement	24	24	23	22	27	21	17	28	32	20	25	17	17	24	24	32	25	32	31	25	23
It will only last 5-10 years before being replaced	23	24	30	23	16	23	22	21	23	25	26	29	15	23	23	17	17	30	45	15	17
Lack of infrastructure within my country	21	21	14	26	25	19	22	21	27	16	39	16	19	15	20	19	24	13	21	27	36
Uneven availability within my country	21	18	13	26	12	21	17	17	19	20	36	12	21	27	27	11	16	7	20	19	28
Small and medium businesses will not be able to keep up with new technologies	21	24	27	20	23	23	18	21	20	28	18	19	21	29	24	15	17	21	36	27	19
It will lead to a monopoly within the technology industry	17	16	18	12	19	23	13	24	29	19	8	17	29	16	11	23	21	13	8	21	17
Lack of agreement on technology industry standards	17	16	9	20	13	19	16	27	19	24	11	19	37	13	13	15	23	17	11	16	17
Companies will focus their time and resources on developing 5G rather than developing other potentially life-changing innovations	13	12	15	13	11	17	18	12	16	19	13	19	19	8	17	8	16	12	12	19	13
Lack of user-friendliness	8	9	11	6	9	12	13	16	17	9	9	8	15	15	8	4	9	16	9	15	16

Q47: What concerns, if any, do you have about the adoption of 5G? Omitting “other” and “none of the above”
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

How important are intellectual property rights protections in helping companies deliver the full benefits of 5G within the next 10 years?



	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Very important	52	50	65	48	49	65	46	60	63	65	37	49	53	59	44	49	52	50	51	61	65
Somewhat important	42	43	31	41	46	32	43	39	37	27	53	47	47	40	48	48	47	43	37	36	35
Not that important	5	6	5	9	3	1	7	1	0	8	8	3	0	1	7	1	1	4	12	0	0
Not at all important	1	2	0	1	2	1	4	0	0	0	3	1	0	0	1	1	0	3	0	3	0

Q93: How important are intellectual property rights protections in helping companies deliver the full benefits of 5G within the next 10 years? Omitting "other" and "none of the above"
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

APPENDIX: 5G USE CASES

Which of the following needs to happen before autonomous vehicles are widely adopted in your country?

Which of the following needs to happen before autonomous vehicles are widely adopted in your country?
Up to 3 responses permitted, Ranked by All

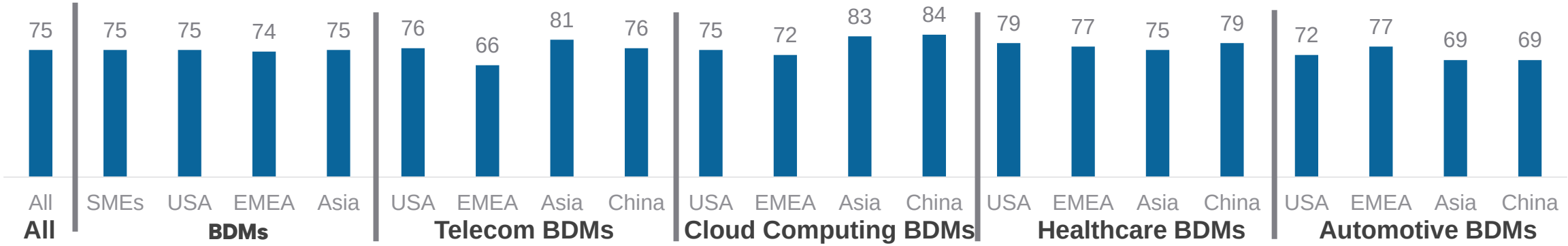
	All	BDMs																			
		BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Extensive testing and proven safety standards	45	47	51	38	39	43	29	33	25	40	46	47	29	57	48	49	36	49	41	52	49
Protection against cybersecurity threats	33	31	29	30	28	39	38	33	32	32	39	39	29	28	31	25	23	39	24	31	28
Technology industry standards covering the software in autonomous vehicles	29	25	19	29	32	31	20	35	32	32	25	45	40	21	19	29	28	24	16	27	27
Legislation related to autonomous vehicles	28	28	29	28	34	28	32	29	31	24	24	21	20	27	27	31	35	14	41	23	25
Smart grids with sensors that can interact with and inform autonomous vehicles	28	27	30	28	29	31	32	23	21	33	18	17	35	25	28	24	27	24	36	21	19
Wireless sensors on vehicles that communicate with other vehicles and the smart grid	27	26	25	27	25	33	29	24	33	32	26	24	29	21	29	21	32	29	31	25	25
Option to override the autonomous feature	25	28	29	37	16	24	25	21	25	20	37	17	24	33	32	17	17	38	33	23	23
Insurance for autonomous vehicles	24	23	27	23	23	19	20	20	25	16	25	31	25	21	27	28	27	20	21	35	23
Biometric verification of drivers' identity	17	18	13	14	24	13	17	27	27	25	12	19	28	16	17	23	28	9	15	31	35
Data privacy protections	17	19	16	17	16	17	17	23	23	23	26	17	29	15	15	13	27	13	21	19	33

Q77: Which of the following needs to happen before autonomous vehicles are widely adopted in your country? Omitting "other" and "none of the above"
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

Which of the following is closer to your view? When it comes to mission critical services (emergency response, etc.) in my country…

Which of the following is closer to your view? *When it comes to mission critical services (emergency response, etc.) in my country…*
% 'New technologies can greatly improve the mission critical services in my country'



When it comes to mission critical services (emergency response, etc.) in my country…	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
New technologies can greatly improve the mission-critical services in my country	75	75	75	74	75	76	66	81	76	75	72	83	84	79	77	75	79	72	77	69	69
The current technology in place is effectively delivering on the mission-critical needs in my country	25	25	25	26	25	24	34	19	24	25	28	17	16	21	23	25	21	28	23	31	31

Q79: Which of the following is closer to your view? When it comes to mission critical services (emergency response, etc.) in my country…

All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Please complete the following sentence: Significant investments in 5G by companies and governments are necessary to…

Please complete the following sentence: *Significant investments in 5G by companies and governments are necessary to…*
Up to 3 responses permitted, Ranked by BDM All SMEs

	BDMs																			
	BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Increase access to healthcare and robotic surgery	54	52	49	60	48	50	53	53	61	46	48	59	69	63	65	52	47	40	56	60
Improve emergency response services	49	56	47	43	56	46	40	35	56	54	51	63	63	53	51	53	59	48	47	51
Enhance remote utility monitoring (oil, gas, water)	42	40	44	49	52	39	43	51	49	39	49	52	48	33	37	41	39	40	45	52
Reduce traffic congestion and automobile accidents	39	39	33	40	43	33	43	47	45	34	37	48	31	33	37	47	38	44	53	53
Develop alternative sources of energy	33	39	34	34	28	30	44	43	37	50	36	35	23	35	20	31	30	32	35	36
Decrease carbon emissions	21	19	22	20	17	29	23	27	20	17	23	31	16	23	25	40	14	28	23	29

Q75: Please complete the following sentence: Significant investments in 5G by companies and governments are necessary to… (Select up to 3 choices) Omitting "other" and "none of the above"
BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

Which do you believe are the benefits of having autonomous vehicles on the road? Select up to 3 choices.

Which do you believe are the benefits of having autonomous vehicles on the road?
Up to 3 responses permitted, Ranked by All

	All	BDMs																		
		BDM All				Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Fewer traffic accidents	44	41	47	38	46	39	30	48	45	39	33	51	36	43	51	40	36	36	40	41	33
Increased access to transportation for individuals who are disabled or senior citizens	33	31	25	30	41	35	24	28	20	31	24	32	33	33	32	28	20	25	31	37	31
Less distracted driving	29	31	35	29	26	35	24	21	25	32	29	33	28	41	36	31	36	36	28	21	27
Less congestion	27	26	17	29	30	13	29	24	20	21	37	28	25	9	17	35	41	18	33	28	31
Less stressful commutes	25	24	21	23	24	31	29	29	28	21	32	27	27	31	25	20	25	26	32	28	25
Reduce the frequency of DUIs	25	24	27	19	28	28	14	19	29	28	20	23	33	31	24	16	24	32	16	29	32
Increased productivity or ability to focus on other tasks	22	20	19	21	25	29	33	27	24	25	21	23	36	17	17	13	13	22	11	33	27
Fewer carbon emissions	18	19	18	22	13	16	25	23	23	23	26	13	16	16	20	25	27	14	23	19	20
Increased gas mileage	15	16	13	21	9	20	21	15	12	23	21	7	9	13	17	19	16	13	17	12	21
More quality times with friends/family in the car	14	14	13	13	13	15	14	15	20	9	8	19	24	8	5	17	27	18	20	24	21
More people ride sharing	12	10	11	12	8	19	12	20	24	20	14	12	23	7	8	12	12	9	12	13	21

Q76: Which do you believe are the benefits of having autonomous vehicles on the road? Select up to 3 choices. Omitting “other” and “none of the above”
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience

In your opinion, what are the benefits of the Internet of Things being widely adopted in your country?

In your opinion, what are the benefits of the Internet of Things being widely adopted in your country?
Up to 3 responses permitted, Ranked by All

	All	BDMs																			
		BDM All					Telecom				Cloud Computing				Healthcare				Automotive			
	All	SMEs	USA	EMEA	Asia	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China	USA	EMEA	Asia	China
Increased convenience	43	40	38	31	51	48	33	36	31	45	38	52	36	37	24	35	27	32	31	44	29
Increased productivity	42	39	47	38	44	43	38	47	43	52	32	47	39	48	43	37	52	39	36	40	41
Increased pace of innovation	36	36	31	41	42	39	33	41	37	27	42	39	32	31	28	41	40	33	40	35	32
Better health monitoring and diagnosis	32	29	35	27	25	23	32	28	31	40	33	29	44	31	43	43	35	24	288/	29	33
Lower consumer costs for goods and services	23	23	23	23	27	29	20	25	27	16	20	24	45	20	20	20	32	20	21	27	33
Better educational opportunities	23	26	29	25	16	27	21	21	21	29	30	24	29	32	27	28	31	33	24	21	29
Improved environmental conditions	20	22	19	22	20	19	18	31	37	28	18	13	43	15	16	25	37	17	20	36	40
Reduced frequency of traffic accidents	18	17	15	19	20	20	21	21	31	20	26	19	11	12	17	16	17	8	24	23	23
Less government spending	12	12	13	13	14	16	16	17	20	17	14	9	13	17	9	13	13	9	17	16	24

Q81: In your opinion, what are the benefits of the Internet of Things being widely adopted in your country? Select up to 3 choices. Omitting “other” and “none of the above”
All (All N=3588) BDM All (SMEs N=1035,US n=150, EMEA n=226, Asia n=225), Telecom (US n=75, EMEA n=76, Asia n=75, China n=75), Cloud Computing (US n=75, EMEA n=76, Asia n=75, China n=75), Healthcare (US n=75, EMEA n=75, Asia n=75, China n=75), Automotive (US n=76, EMEA n=75, Asia n=75, China n=75)

Top 3 options per audience