INSTITUTE FOR
BUSINESS IN THE
GLOBAL CONTEXT

THE "SMART SOCIETY" OF THE FUTURE DOESN'T LOOK LIKE SCIENCE FICTION

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21 May 2019











FLETCHER'S INSTITUTE FOR BUSINESS IN THE GLOBAL CONTEXT, WHERE "THE WORLD OF BUSINESS MEETS THE WORLD"





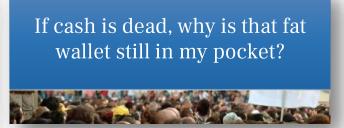








Is growth for good also good for growth?



Flying cars or flying toilets: what

Are cheeseburgers key to peace in the Middle East?

What is the fastest route to the Smart Inclusive City: through City Hall, the slum or the garage?





ALL THINGS INTERNET ARE INITIALLY MET WITH SKEPTICISM...









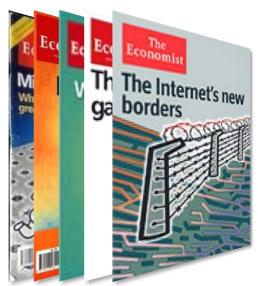
...BEFORE BEING EMBRACED.







WHILE THE WEST WAS GRAPPLING WITH A LOOMING ECONOMIC CRISIS, THE REST STARTED PLUGGING INTO THE GLOBAL DIGITAL ECONOMY.







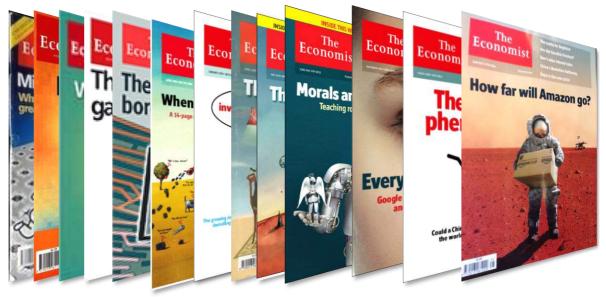
AS CONNECTIVITY BECAME UBIQUITOUS, SO DID CONCERNS AROUND SECURITY, TRUST AND PRIVACY







DESPITE THESE CONCERNS, THE MARCH TOWARDS UNIVERSAL CONNECTIVITY CONTINUES, UNABATED

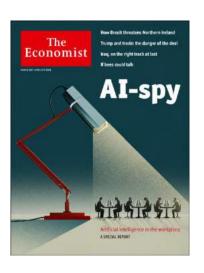






THE NEXT BILLION ARE GETTING ONLINE IN AN ERA OF NEAR-UNIVERSAL MOBILE CONNECTIVITY – WITH PROFOUND IMPLICATIONS FOR THE FUTURE OF THE GLOBAL





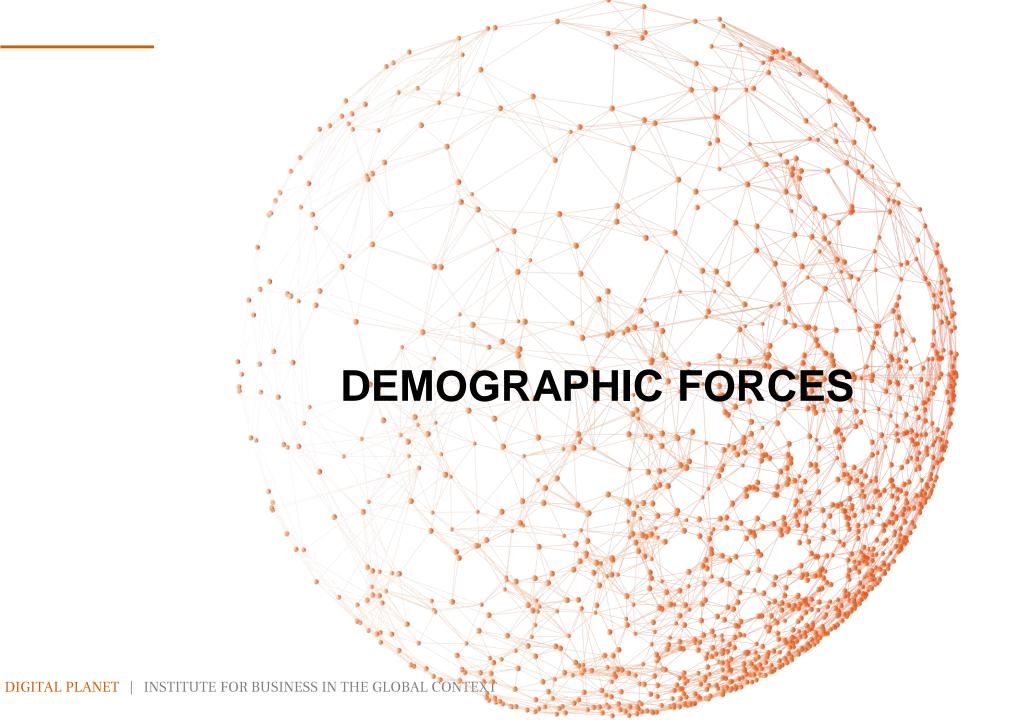


WHAT ARE THE FORCES SHAPING THE FUTURE OF OUR DIGITAL PLANET?

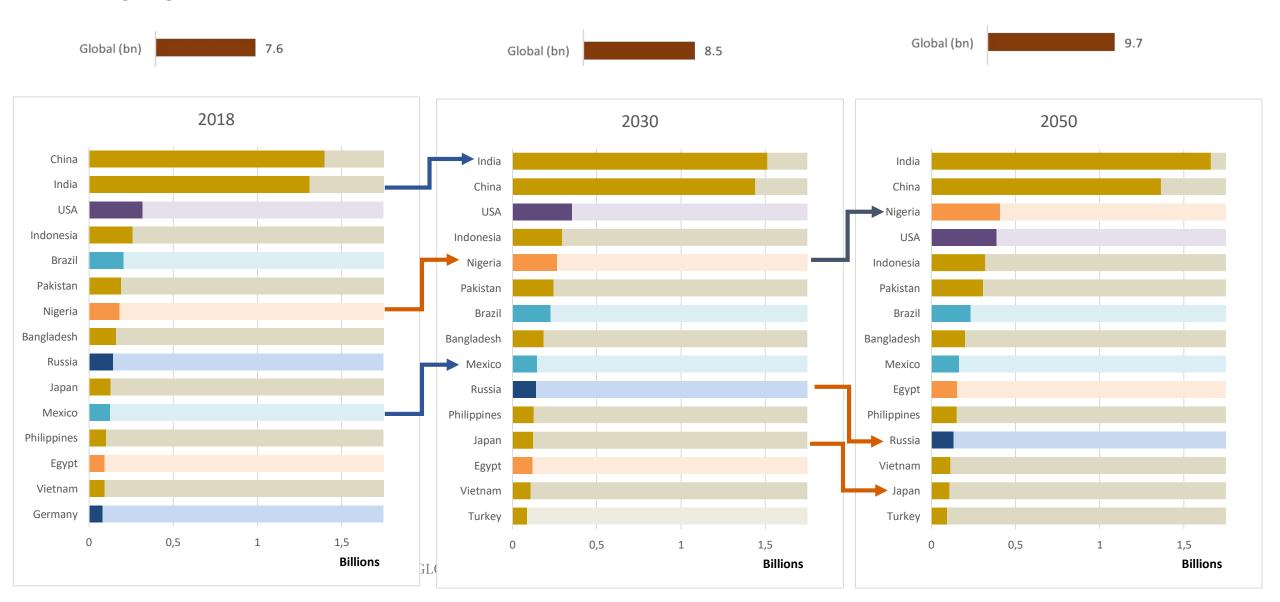








IN 2030: A CONNECTED PLANET WITH 8.5 BILLION PEOPLE AND 50+ BILLION DEVICES





Simple rule, easy to remember:

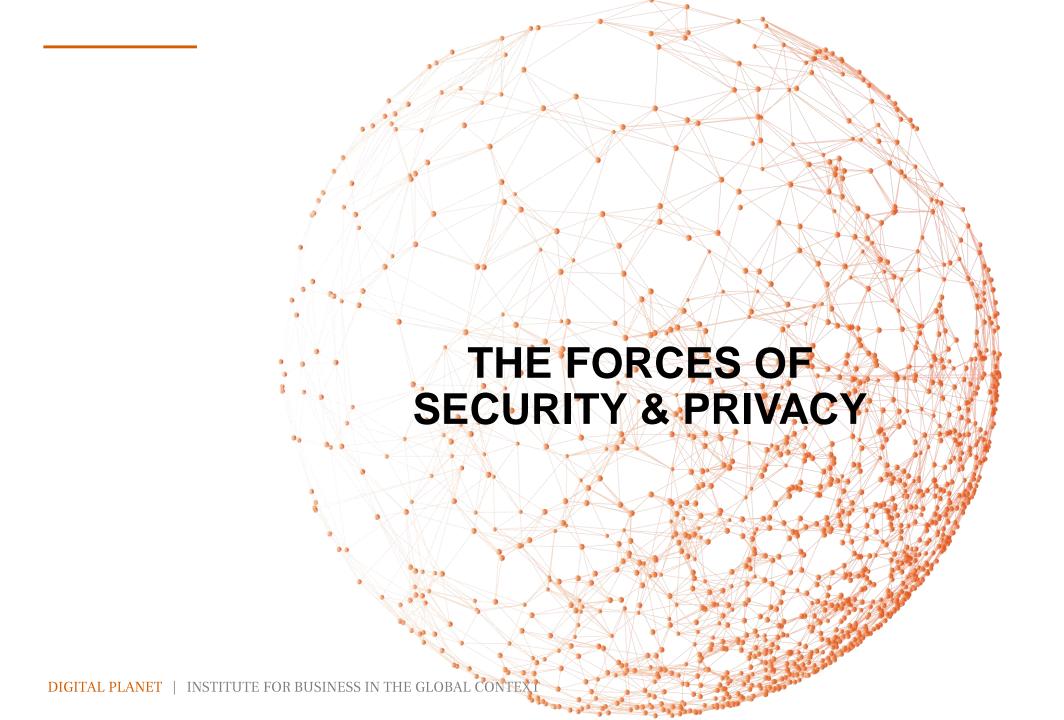
If you have a billion customers, we can find a way to make money

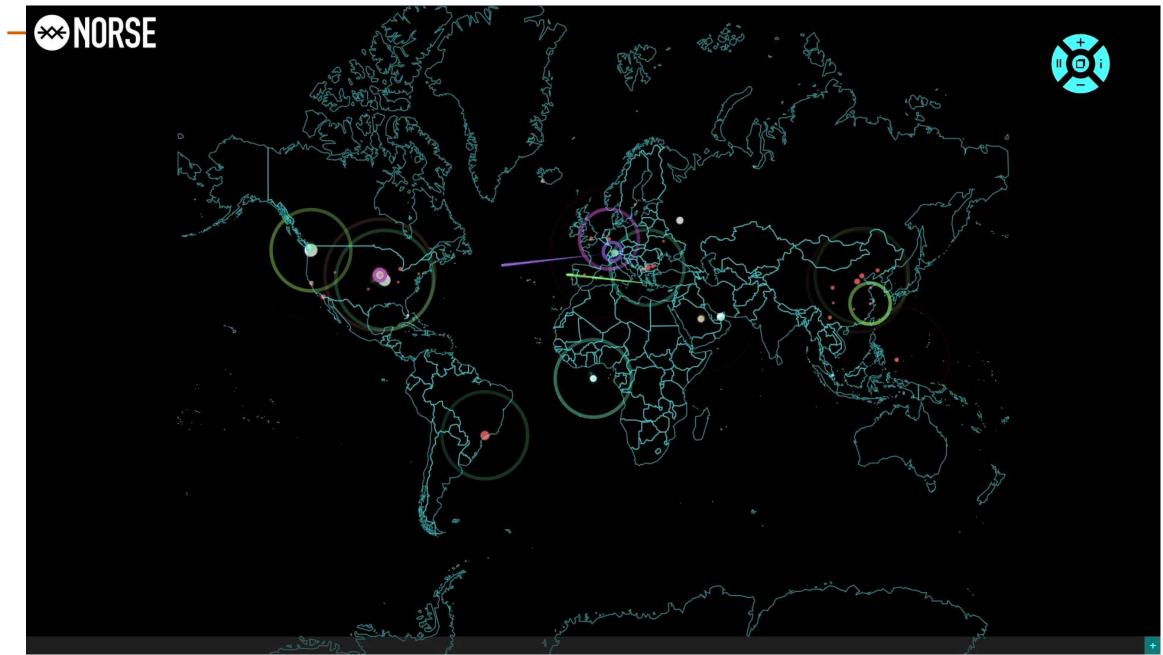
from them.

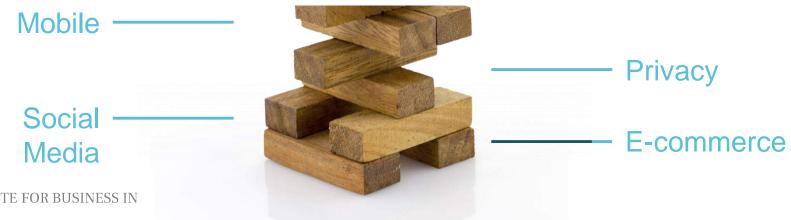
Eric Schmidt, Chairman, Google

In conversation @ The Fletcher School, Tufts February 2014











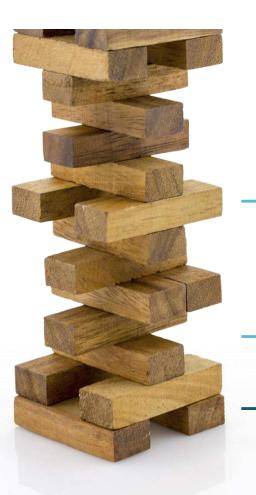
Personalization ———

Big

Data

Mobile

Social Media



· Cloud Internet

Privacy

E-commerce



Biometrics —

Internet of Things ———

Portable Devices —

Personalization ———

Big Data —

Mobile —

Social Media



Self-Driving Cars

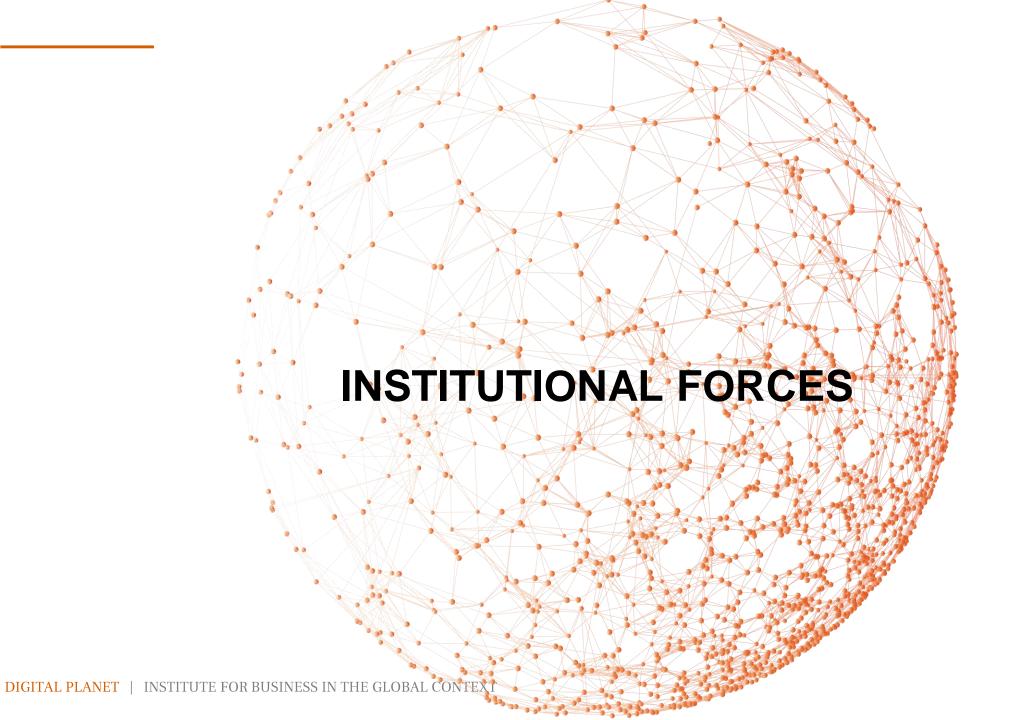
——— Next-Gen Genomics

— Machine Learning

Cloud Internet

Privacy

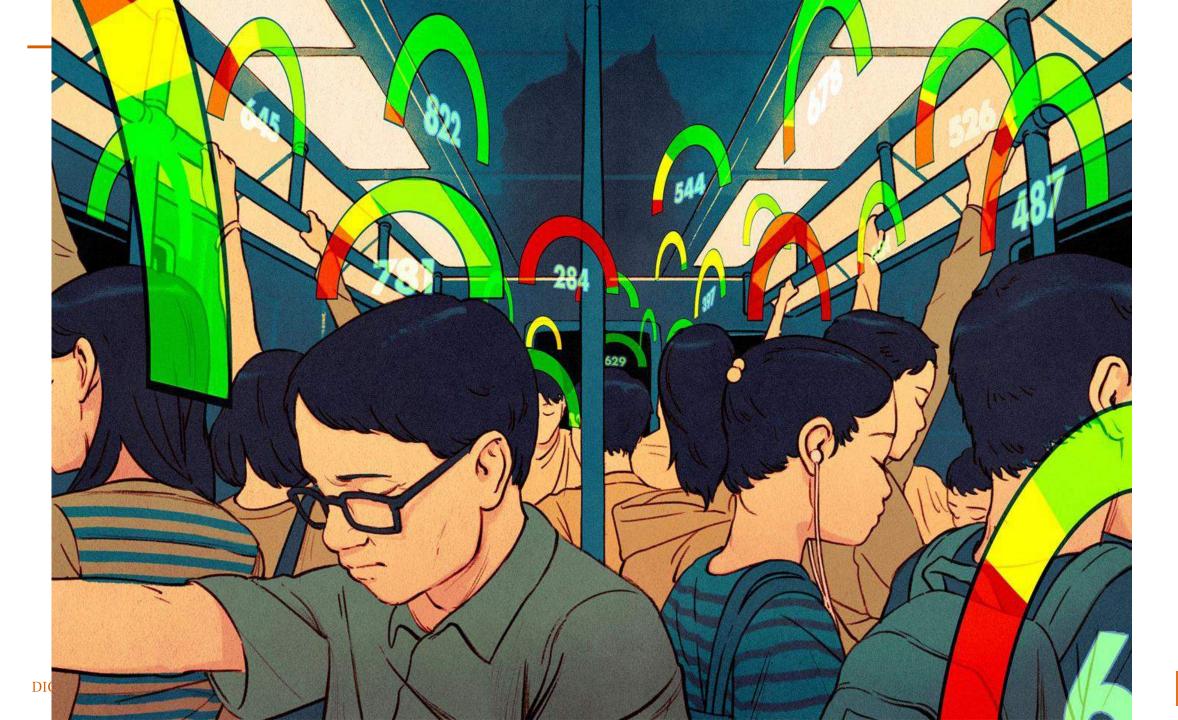
— E-commerce









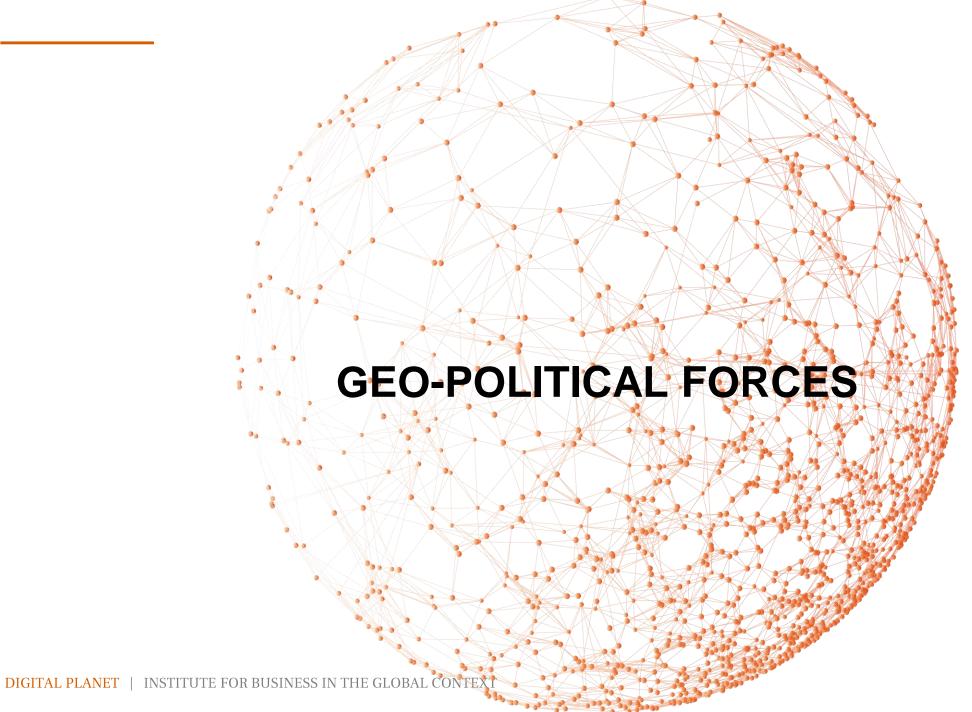




CIVIS ROMANUS SUM



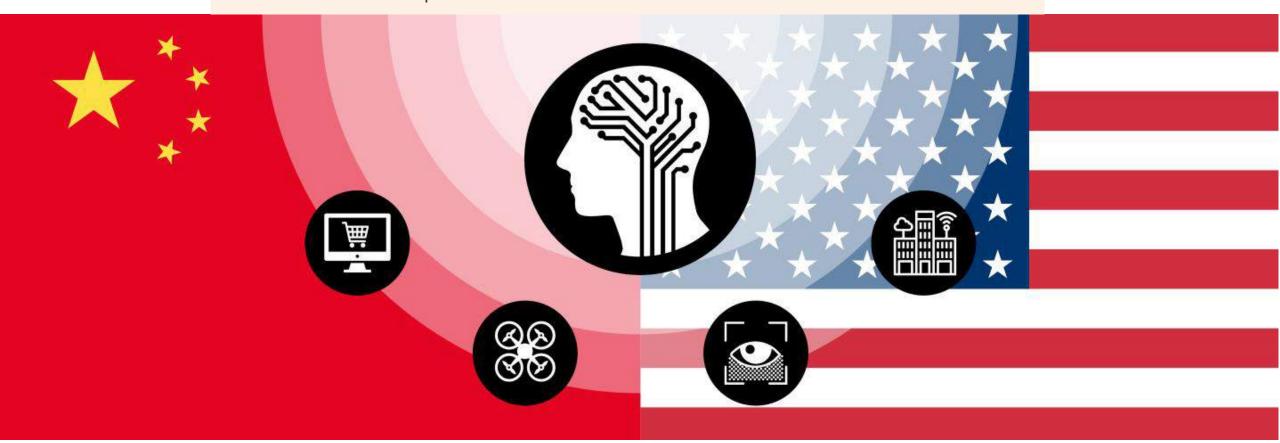
#DigitalRights #CivisEU





The AI arms race: China and US compete to dominate big data

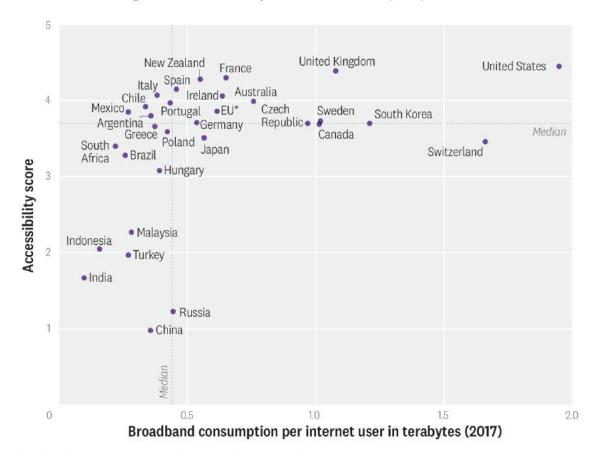
Beijing plans to be the world leader in the technology by 2030. The contest will come down to who can better manipulate the data



"GROSS DATA PRODUCT" - THE NEW GDP

A New World Data Order That Emphasizes **Openness and Digital Evolution**

Countries that rank highest in data accessibility and broadband consumption per user are clear winners.

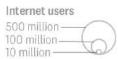


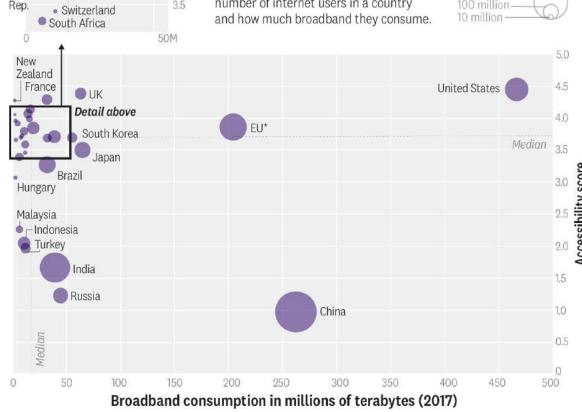
^{*}The EU data point contains 12 EU countries and almost 81% of the EU population. Source: Analysis of Euromonitor, Cisco, ITU, Global Open Data Index/Open Government Partnership, and CNIL data by The Digital Planet initiative at The Fletcher School, Tufts University; and Mastercard

THBR

A New World Data Order **That Emphasizes Data Access**

A simplistic U.S.-China superpower standoff gives way to a more nuanced picture when you account for the number of internet users in a country





The EU data point contains 12 EU countries and almost 81% of the EU population. Source: Analysis of Euromonitor, Cisco, ITU, Global Open Data Index/Open Government Partnership, and CNIL data by The Digital Planet initiative at The Fletcher School, Tufts University; and Mastercard

Spain

Australia Mexico

Poland Canada

0

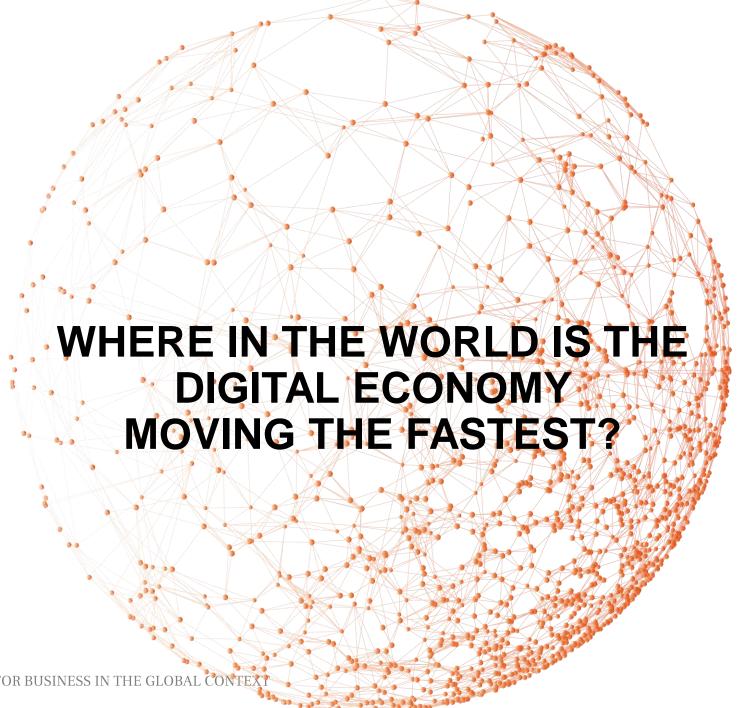
3.5

Portugal Argentina

Greece Sweden

Ireland 1 Italy





OUR DIGITAL EVOLUTION INDEX (DEI) MEASURES THE DIGITAL COMPETITIVENESS OF NATIONS





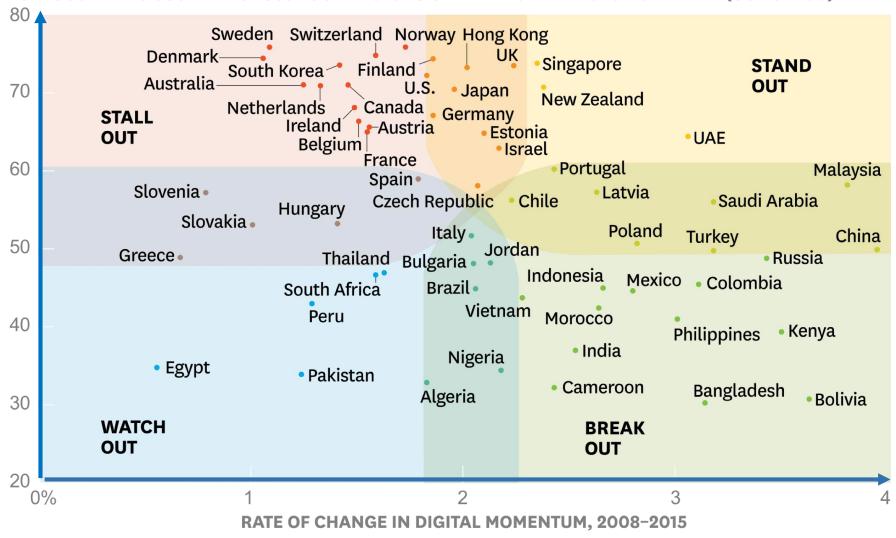




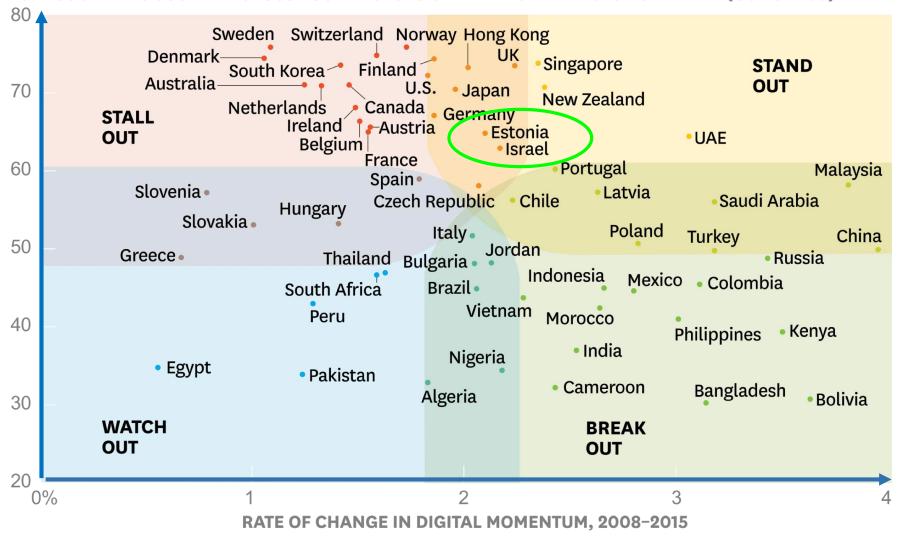




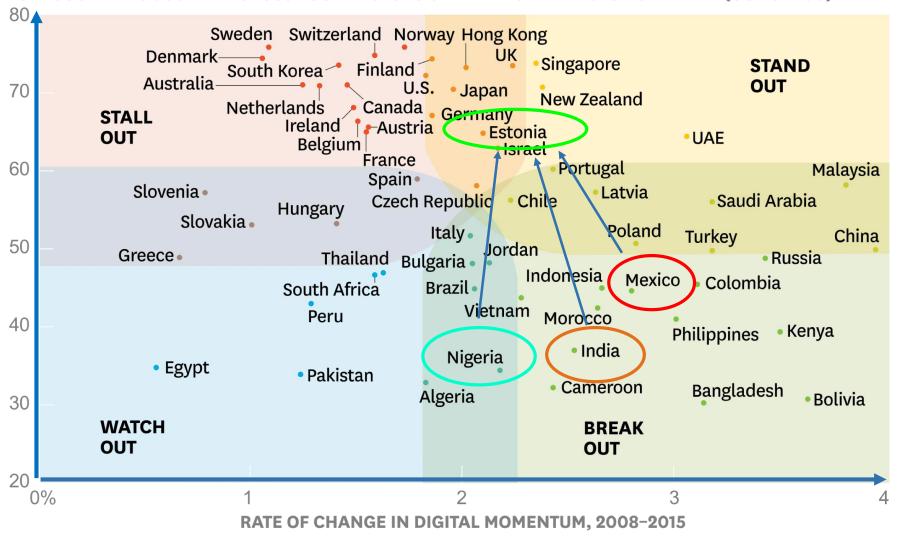
HOW COUNTRIES SCORED ACROSS FOUR FACTORS ON THE DIGITAL EVOLUTION INDEX (OUT OF 100)



HOW COUNTRIES SCORED ACROSS FOUR FACTORS ON THE DIGITAL EVOLUTION INDEX (OUT OF 100)



HOW COUNTRIES SCORED ACROSS FOUR FACTORS ON THE DIGITAL EVOLUTION INDEX (OUT OF 100)





WHAT IS A "SMART SOCIETY"?

Smart Society | n. A society in which digital technology and data, thoughtfully deployed by governments, improves three broad outcomes: well-being of people, robustness of the economy, and effectiveness of institutions.

Outcome Measure

PEOPLE

Component

Environment and Quality of Life

Inclusivity

State of Talenta nd the Human Condition Talent Development

Air, Water, and Sanitation Quality Labor Market Inclusion Current Vitals of Society

Training and Education

Cluster

Health

Economic Mobility

Retaining Talent Attracting Talent

Work Life Balance Diversity and Acceptance

Transportation

Inclusive Policies



Outcome Measure

ECONOMY

Component

Global Connectedness Economic Robustness

Entrepreneurship

Innovation

Mobility of Data Economic Productivity

Fundingfor New Businesses

Innovation Readiness

Mobility of Goods and Services

Economic Diversification

Ease of Starting
New Ventures

Investment in Innovation

Cluster

Mobility of Financial Flows

Economic Stability

Vibrancy of Start Up Environment Innovation Collaboration

Uptake of New Technology



Outcome Measure

INSTITUTIONS

Component

Freedoms

General

Trust

Safety and Security

Public Services

Freedoms

Trust in Technology

Physical Safety

Regulatory Regime

Cluster

Online Freedoms

Government Accountability

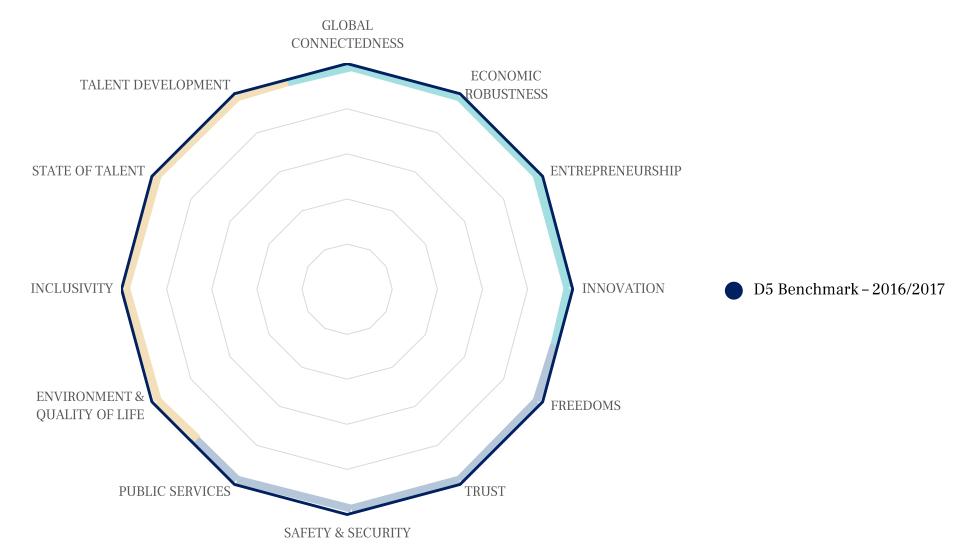
Cyber Security

Government Use of Technology

e-ID in Public Services



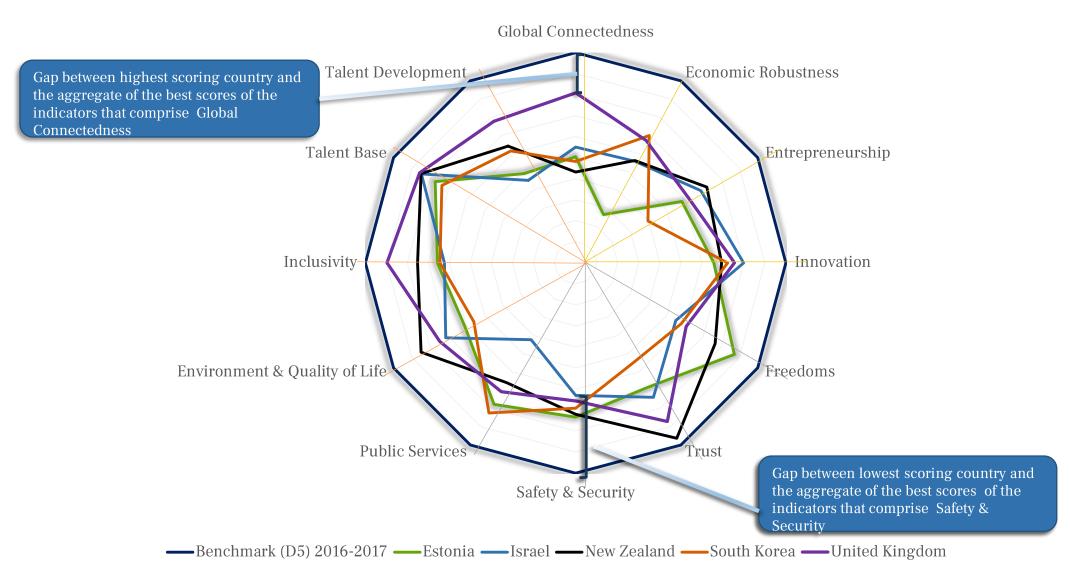
A "SMART SOCIETIES" BENCHMARK





WHAT IS THE BENCHMARK?





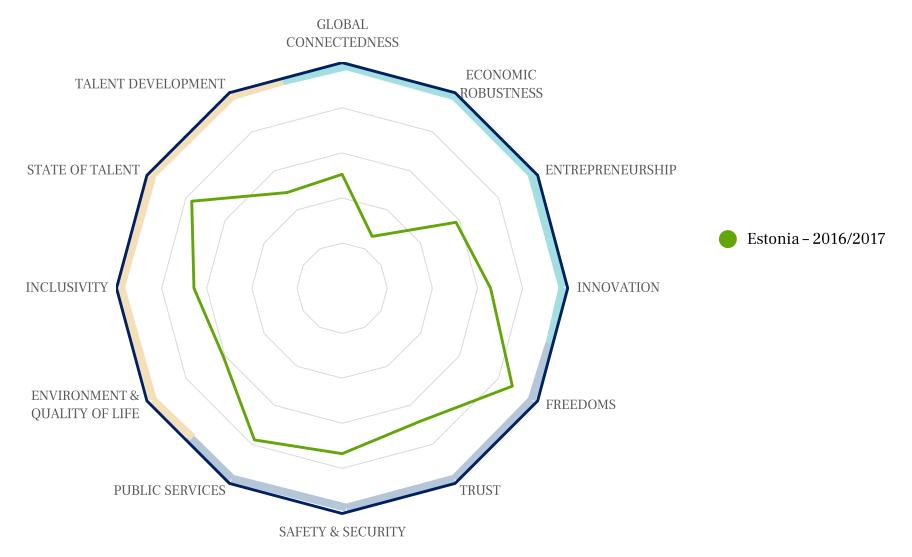


ESTONIA'S "SMART SOCIETIES" FOOTPRINT IN 2013



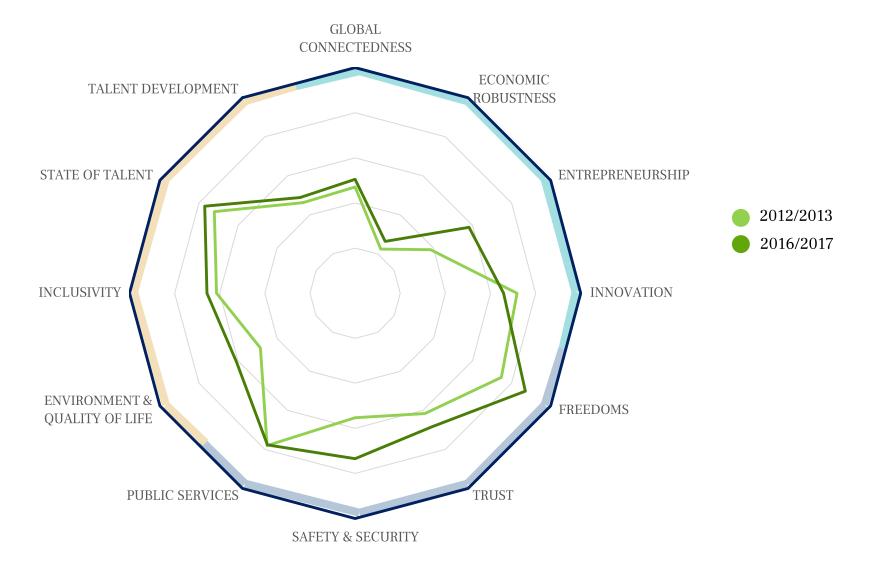


ESTONIA'S "SMART SOCIETIES" FOOTPRINT IN 2017

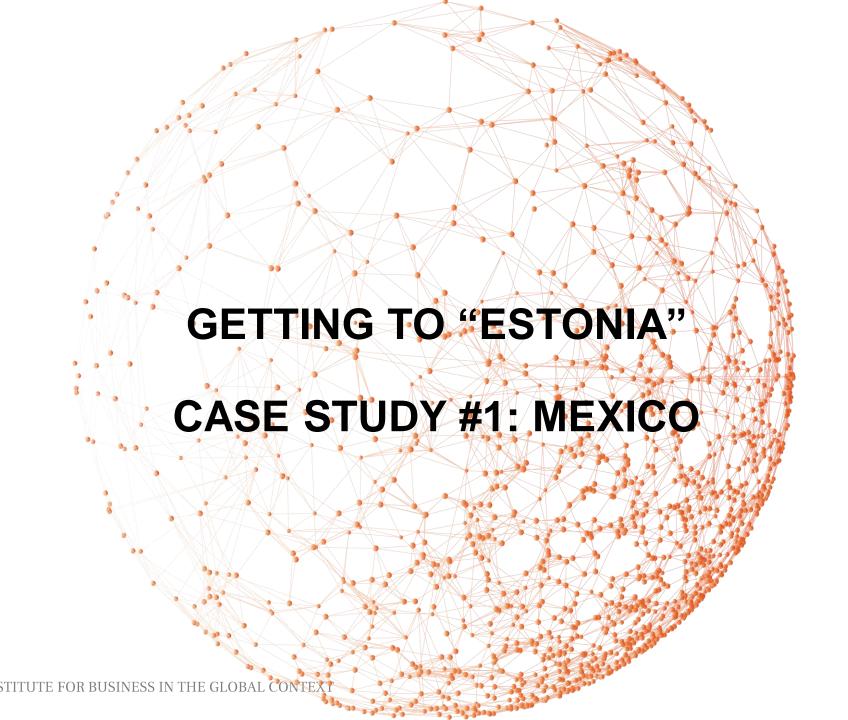




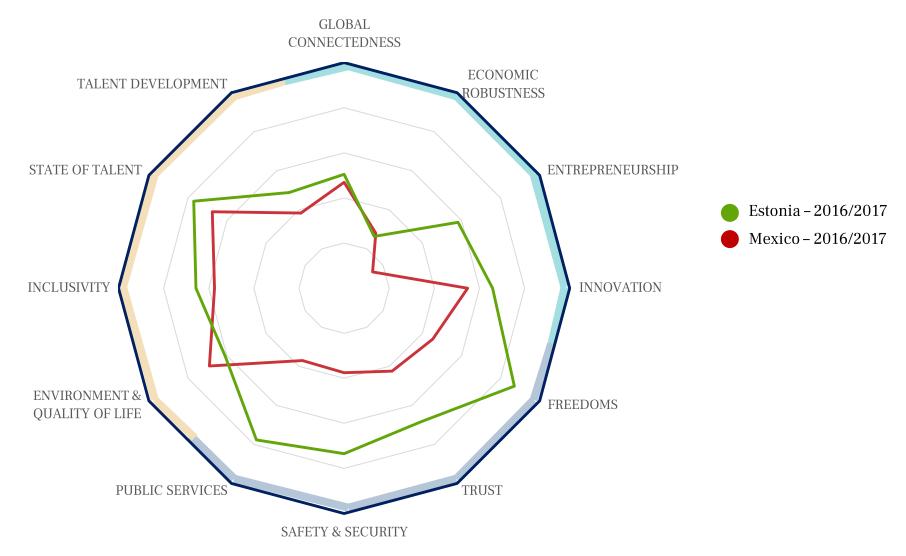
ESTONIA'S "SMART SOCIETIES" FOOTPRINTS OVER TIME





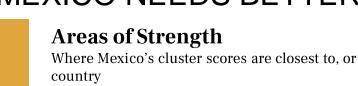


MEXICO VS. ESTONIA – FOOTPRINTS IN 2017



Peopl

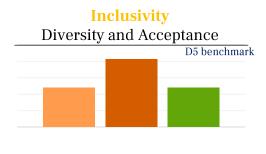
AREAS OF STRENGTH AND WEAKNESS: MANY REPORT BEING SATISFIED, BUT MEXICO NEEDS BETTER POLICIES TO ATTRACT THE BEST TALENT



Where Mexico's cluster scores are closest to, or equal, the highest scoring EM5



To what extent is there work/life balance and a general sense of well-being?



Are people accepted, included, and able to participate in public life?



Does the society have an active population able to engage in work?

Areas of Weakness

Where Mexico's cluster scores are furthest from the highest scoring EM5 country



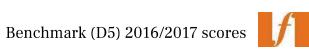
How adept is a society at attracting talent from abroad?



Are there are policies to promote inclusion?



Does high skilled talent want to stay in country?



Economy

AREAS OF STRENGTH AND WEAKNESS: MEXICO HAS STRONG FLOWS OF GOODS, SERVICES AND DATA TO THE REST OF THE WORLD, BUT NEEDS TO BUILD UP ITS

ENTREPRENEURIAL ECOSYSTEMS



Where Mexico's cluster scores are closest to, or equal, the highest scoring EM5 country

Global Connectedness Mobility of Data D5 benchmark

To what degree are there data flows to and from the rest of the world?

Global Connectedness Mobility of Goods and Services D5 benchmark

To what degree are goods and services able to be imported or exported?



Are new technologies available and being used?

Areas of Weakness

Where Mexico's cluster scores are furthest from the highest scoring EM5 country

Entrepreneurship

Ease of Starting New Ventures D5 benchmark

How easy is it to start a new venture in terms of cost and time?

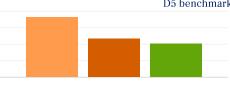
Entrepreneurship

Funding for New Businesses D5 benchmark How easy it is for start-ups to access money?

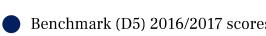
Innovation

Investment in Innovation

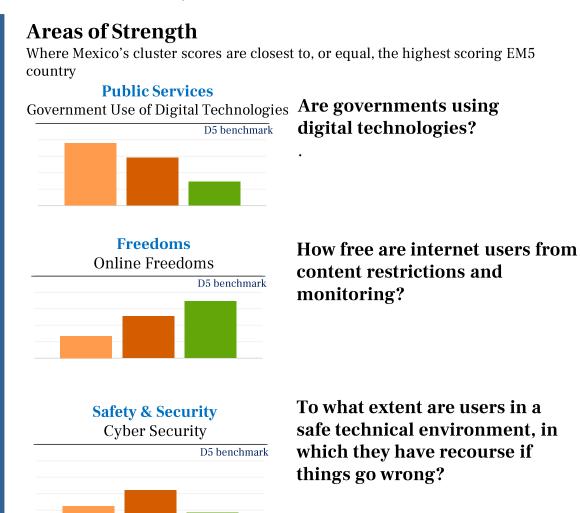
D5 benchmark



How much is the private sector investing in innovation?



AREAS OF STRENGTH AND WEAKNESS: THE GOVERNMENT READILY ADOPTS DIGITAL TECHNOLOGIES, BUT NEEDS TO IMPROVE THEIR USE IN FREEDOMS AND SAFETY.

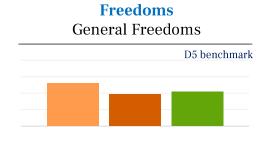


Areas of Weakness

Where Mexico's cluster scores are furthest from the highest scoring EM5 country



Are people safe in their communities from physical violence?



To what extent are societies free to exercise civil liberties, political rights, and freedom of the press?



How accountable is representative government to the people?

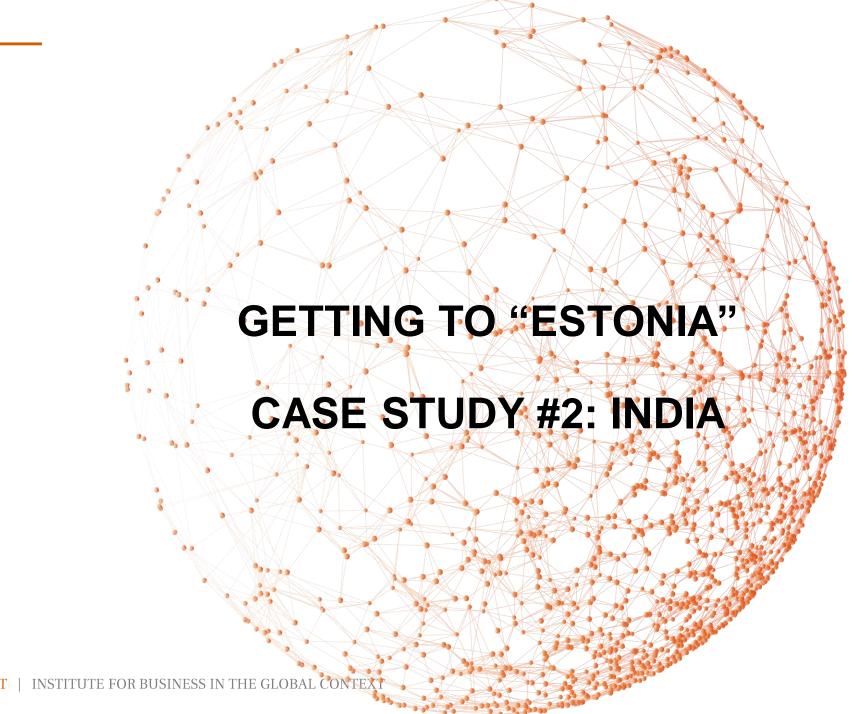




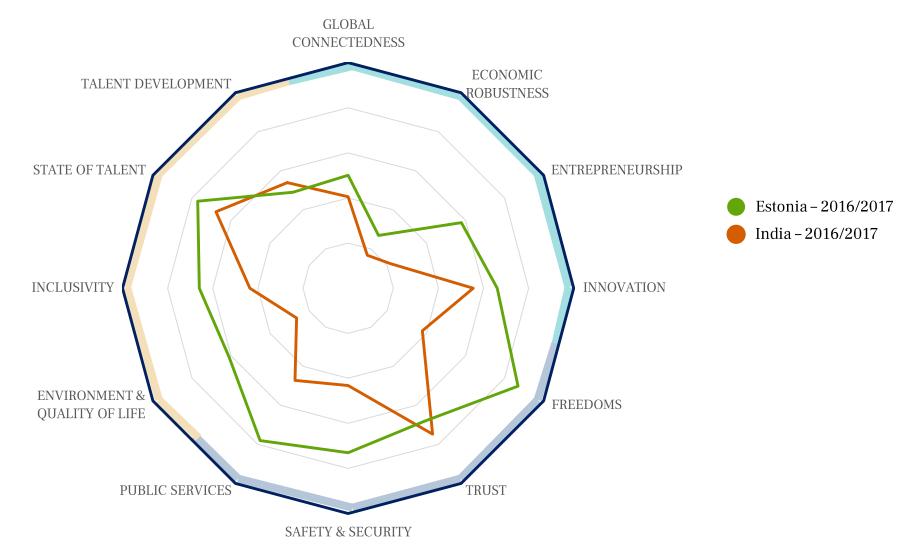








INDIA VS. ESTONIA – FOOTPRINTS IN 2017



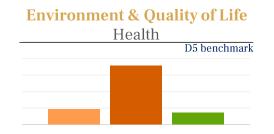


AREAS OF STRENGTH AND WEAKNESS: INDIA HAS A HIGHLY SKILLED LABOR FORCE, BUT IT MUST WORK TO IMPROVE THE HEALTH AND WELL-BEING OF ITS CITIZENS.



Areas of Weakness

Where India's cluster scores are furthest from the highest scoring EM5 country



Are people living longer and are children and adults healthier?

Though health standards in India are rapidly improving, India's life expectancy remains low at 68 years, compared to Poland's 77.6 years.



Life Satisfaction

Do people of different genders and identity groups have equal opportunities to participate in the labor force?

Women comprise only 24.5% of India's total labor force, compared to 45% of Poland's, and 45.4% of Nigeria's labor force.

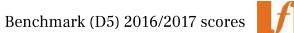
To what extent is there work/life balance and a general sense of wellbeing?

In a 2017 Gallup survey, only 3% of respondents in India reported feeling that they are thriving, in contrast to the EM5 average of 24%.









compared to 1.7% from Mexico.

D5 benchmark

omv

Econ

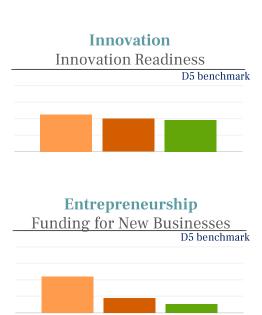


Where India's cluster scores are closest to, or exceed, the highest scoring EM5 country



How much is being spent on innovation

The World Economic Forum gives India a 4.5/7 rating on company R&D spending. This is the highest value within the EM5 cohort, at 73% of the D5 Benchmark in 2016/2017



Are individuals, companies, and governments willing to innovate?

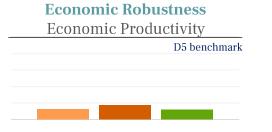
Among its EM5 peers, India's capacity for innovation rating by the WEF is second only to that of the Philippines. The number of researchers per million citizens, however, is dramatically below the D5 benchmark for all countries besides Poland.

How easy is it for startups to borrow money?

In 2017, Indian startups received the most seed and early stage investments, compared to those of the other EM5 countries. This is achieves 44% of the D5 benchmark.

Areas of Weakness

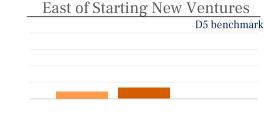
Where India's cluster scores are furthest from the highest scoring EM5 country



How productive and vibrant is the economy?

While India lags behind Poland in productivity, GDP per person employed has grown 29% since 2012, suggesting that India is catching up.



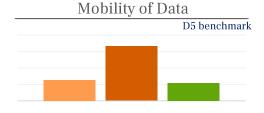


How easy is it and has it become to start a new venture?

Starting a business in India takes an average of 29.8 days and 14.8% of per capita income. The D5 average is 4.9 days and 3.86% per capita income, and the EM5 average is 24.4 days and 18.1% per capita income.

To what degree are there data flows to and from the rest of the world?

India has low bandwidth speeds compared to EM5 peers, low average numbers of megabytes delivered by unique IP address.

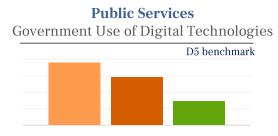


Global Connectedness

AREAS OF STRENGTH AND WEAKNESS: THE INDIAN GOVERNMENT HAS BEEN EMBRACING DIGITAL TECHNOLOGIES TO DELIVER BETTER PUBLIC SERVICES.



Where India's cluster scores are closest to, or exceed, the highest scoring EM5 country



Are government prioritizing ICT and supporting open data?

India's telecom industry is the most competitive in the EM5, being 3x more competitive than the Philippines in the Herfindahl-Hirschman Index.

Trust Government Accountability D5 benchmark Safety and Security Physical Safety D5 benchmark

How accountable is representative government to the people?

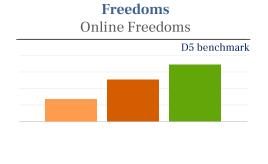
India's citizens report a stronger confidence in government than any other EM5 country. According to a 2017 Gallup survey, 84% of Indian respondents trust their national government, the same as the Philippines.

Are people safe in their communities from physical violence?

Compared to its digital peers, India has low rates of robbery and intentional homicides, with 15x lower reported robbery rates than the Philippines.

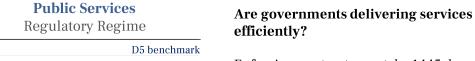
Areas of Weakness

Where India's cluster scores are furthest from the highest scoring EM5 country



How free are internet users from content restrictions and monitoring?

India performs less well than its peers on Freedom House's Freedom on the Net, scoring a less desirable 40 versus top scorer Philippines which score a more favorable 28.

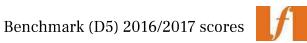


Enforcing contracts can take 1445 days. This is over 3x as long as it takes to enforce contracts in Mexico.



To what extent are users in a safe technical environment, in which they have recourse if things go wrong?

India has a developing legal framework for personal data protection, but Open Data Barometer scoring both the Philippines, Mexico, and Poland more highly.

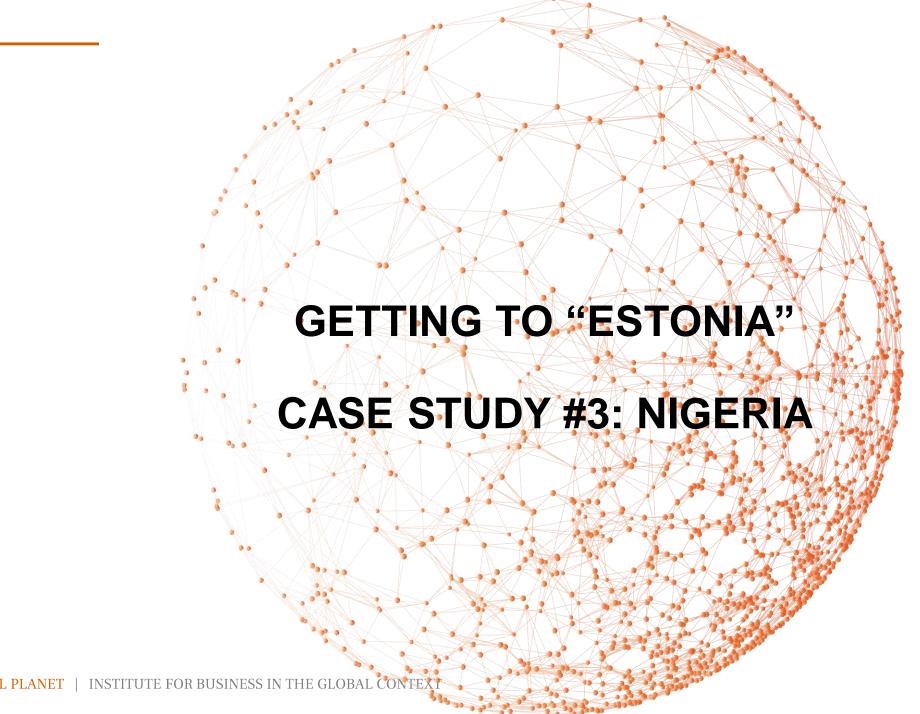






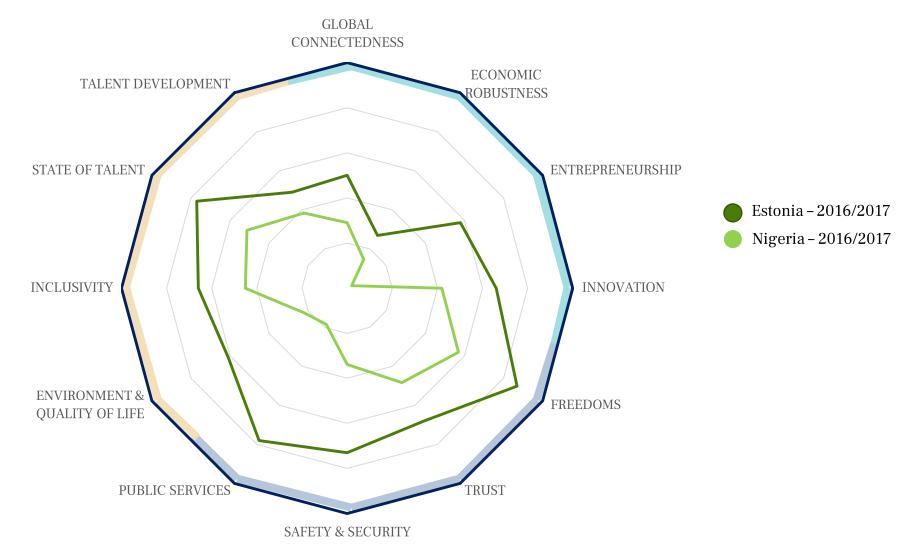


Mexico





NIGERIA VS. ESTONIA – FOOTPRINTS IN 2017





AREAS OF STRENGTH AND WEAKNESS: IMPROVING SKILLS AND QUALITY OF LIFE ARE KEY TO HARNESSING NIGERIA'S DEMOGRAPHIC DIVIDEND.

Areas of Strength

Where Nigeria's cluster scores are closest to, or equal, the highest scoring EM5 country

Talent Development

Participation in Training and Education work force?



State of Talent



Inclusivity

Labor Market Inclusion D5 benchmark



What sort of training is available for the

The World Economic Forum scores Nigeria in terms of "availability of training and research services" at 4.2 out of 7. This is within range of the other D5 countries, which score between 4.4 and 4.9.

Does the society have an active population able to engage in work?

55% of Nigerians over the age of 15 are participating in the labor force and 5.5% are unemployed. Nigeria also has a low median age and old age and child dependency ratios relative to peers. Nigeria's 'Current Vitals of the Society' score is 76% of the EM5 benchmark and 87% of the D5 benchmark. **Do people of different genders and** identity groups have equal opportunities to participate in the labor force?

In 2017, Nigeria had the highest ratio of female to male labor force participation rate among EM5 countries. There were 84% as many women in the labor force as there are men, compared to the EM5

Areas of Weakness

Where Nigeria's cluster scores are furthest from the highest scoring EM5 country

Environment & Quality of Life Air, Water, and Sanitation Quality

D5 benchmark

Environment & Quality of Life

Health

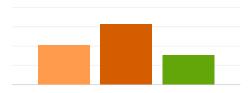
D5 benchmark



State of Talent

Availability of Talent

D5 benchmark



Nigeria has not yet made it onto the Smart Society

How clean and habitable is the local

environment?

scale. The mortality rate attributed to air pollution in 2016 was 145.6 per 100,000 people compared to the EM5 average of 107.7. Average annual air pollution is higher in Nigeria than the rest of the EM5, and access to improved sanitation facilities and water sources are lower.

Are people living longer and are children and adults healthier?

Nigeria has the highest infant mortality rate out of the EM5 countries, with 66.9 deaths per 1.000 live births in 2016. This is over 2x the EM5 average of 27.92 deaths per 1,000 live births.

Do people have the skills and technical literacy necessary to participate in the economy?

In 2016, Nigeria's adult literacy rate was nearly 60%. This is 14 percentage points lower than India's rate, which is the next lowest among the EM5. Nigeria has lower adoption rates for internet, personal computers, cellular phones and smartphones compared to EM5 peers.





Benchmark (D5) 2016/2017 scores

Economy

AREAS OF STRENGTH AND WEAKNESS: NIGERIA STRUGGLES TO FIND FINANCING FOR NEW AND EXISTING BUSINESS VENTURES. NEVERTHELESS, ITS START-UP ENVIRONMENT IS THRIVING.

Areas of Strength

Where Nigeria's cluster scores are closest to, or equal, the highest scoring EM5 country

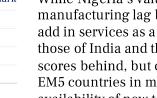
Global Connectedness Frictionlessness of Financial Flows D5 benchmark





Innovation

Uptake of New Technologies D5 benchmark



Are individuals, companies, and governments ready to innovate?

Nigeria has longer page response time than other D5 countries, and less consistency in data management approaches. Its 'Frictionlessness of Financial Flows' score is 89.6% of the EM5 benchmark and 74.5% of the D5 benchmark.

Are individuals, companies, and governments willing to innovate?

The World Economic Forum ranked Nigeria's capacity for innovation at 3.94 out of a possible 7, which places it slightly behind the EM5 average (4.21). Its 'Innovation Readiness' score is 83.4% of the EM5 benchmark and 38.25% of the D5

Are new technologies available and being used?

While Nigeria's value add in industry and manufacturing lag behind EM5 peers, its value add in services as a percentage of GDP exceeds those of India and the Philippines. Nigeria scores behind, but closely within range of other EM5 countries in measures expressing availability of new technology, firm-level tech

absorption and production process sophistication.

Areas of Weakness

Where Nigeria's cluster scores are furthest from the highest scoring EM5 country

Entrepreneurship

Ease of Starting New D5 benchmark Ventures

Economic Robustness

Economic Stability D5 benchmark

Entrepreneurship

Funding for New D5 benchmark Businesses

How easy is it and has it become to start a new venture?

According to the World Bank, Nigeria has the highest cost for business start-up procedures out of the EM5 countries, at 28.8% of GNI per capita. The EM5 average is 17.8% of GNI per capita and the D5 average is 3.9% of GNI per capita.

Is there a high volume of portfolio investment crossing country boundaries?

Portfolio flow in and out of the country is uniformly low across EM5 countries, with a noticeable exception only for Mexico.

How easy it is for start-ups to borrow money?

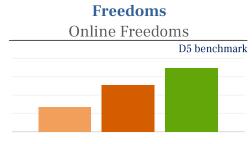
Nigerians have greater difficulties accessing loans than the rest of the D5 countries and a smaller sum of venture capital investment. Its 'Funding for New Businesses' score is 24.0% of the EM5 benchmark and 10.5% of the D5 benchmark.

Benchmark (D5) 2016/2017 score

AREAS OF STRENGTH AND WEAKNESS: WHILE NIGERIA ENJOYS GREATER ONLINE FREEDOMS, THERE IS A NEED TO STRENGTHEN INSTITUTIONS.

Areas of Strength

Where Nigeria's cluster scores are closest to, or equal, the highest scoring EM5 country



Safety & security

Physical Safety

Trust

Government Accountability

How free are internet users from content restrictions and monitoring?

In 2017, Nigeria had the lowest numbers of government requests for Facebook user data (5) and content removal from Google (1) among EM5 countries, which averaged 2,458.8 requests for user data and 100.4 for content removal.

Are people safe in their communities from physical violence?

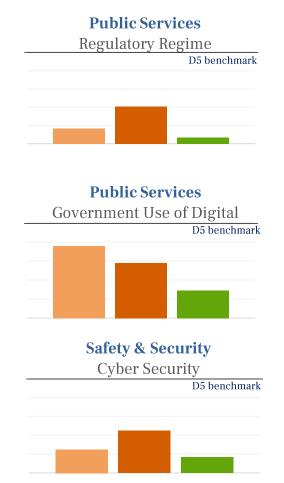
In 2016, Nigeria's intentional homicide rate was 9.8 per 100,000 people, which is close to the EM5 average of 8.13. Reported rates of robbery and sexual violence were low relative to peers-1.12 robberies per 100,000 people and 1.03 accounts of sexual violence per 100,000 people, respectively.

How accountable is representative government to the people?

In 2017, Gallup poles reported that 84% of
Nigerians had confidence in their national
government. This is the third highest
confidence rate among EM5 countries, after
India and the Philippines. Nigeria's
'Government Accountability' score is 48% of
the D5 benchmark and 51% of the EM5

Areas of Weakness

Where Nigeria's cluster scores are furthest from the highest scoring EM5 country



Are governments delivering services efficiently?

According to the World Bank, Nigeria ranks low in government effectiveness and regulatory quality when compared to the rest of the EM5 countries. It's 'Regulatory Regime' score is 6.9% of the D5 benchmark and 11.8% of the EM5 benchmark.

Are governments prioritizing ICT and supporting open data?

Nigeria scores last among EM5 peers in laws relating to ICTs and in the quality and use of online government services. Its Herfindahl-Hirschman Index score shows that its telecom market is more competitive than that of Mexico or the Philippines, but not as competitive as India or Poland.

To what extent are users in a safe technical environment, in which they have recourse if things go wrong?

Nigeria has the highest percentage of software piracy (81% of all software), and the lowest levels of legal protections against cybercrime (rating a "1" on a 0 to 10 scale). EM5 averages for these measures are 63% and 5.4, respectively.

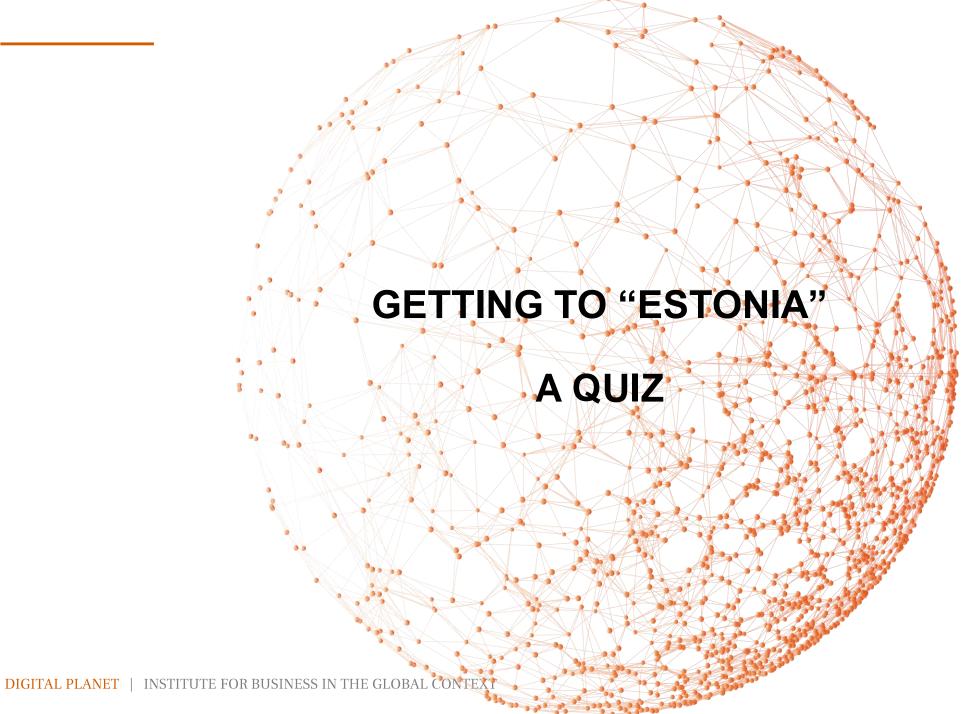
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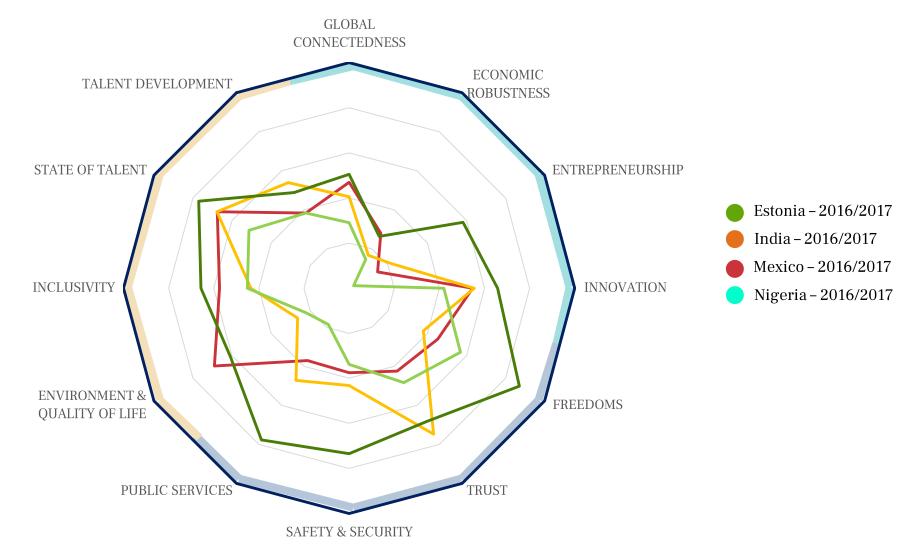


Ď5 benchmark





WHERE DOES YOUR COUNTRY HAVE THE BIGGEST GAPS?





Life [on the Digital Planet] can only be understood backwards; but it must be lived forwards.

Søren Kierkegaard, updated for the Digital Era





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ARTICLE EMERGING MARKETS

How Effective Is India's Government, Compared with Those in Other Emerging Markets?

by Bhaskar Chakravorti and Ravi Shankar Chaturvedi

Harvard Business Review

EMERGING MARKETS

How Effective Is India's Government, Compared with Those in Other Emerging Markets?

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India is in the midst of a closely-watched election. The incumbent, Prime Minister Narendra Modi, is seeking a second term and there are 900 million people eligible to vote, making this — potentially — the largest exercise in democracy anywhere in the world.

Both voters and policymakers in India face a crush of information as they consider their choices in the election and the priorities that lie beyond; there are numerous report cards on the Modi administration circulating on both mainstream and social media, including those prepared by the administration itself. Unfortunately, they also face a crush of misinformation and confusion on social media. In our view, another critical missing element — especially for a country like India with big, global aspirations — is an objective evaluation of the government's performance in policy areas such as citizen welfare, economic growth, and functioning public institutions.

To address this gap, we developed a performance evaluation framework with three attributes: datadriven measures of progress across a broad spectrum of policy goals; progress against a comparable peer group of emerging markets; and, given the Indian government's emphasis on technology as a policy driver, benchmarks against global technology standards set by the world's most digitally advanced governments.

As part of the Smart Societies research initiative launched by The Fletcher School at Tufts University, we introduced a similar framework in an earlier HBR article: "The Smart Society of the Future Doesn't Look Like Science Fiction". In that piece, we evaluated how any country's policy performance can be measured across three broad areas: well-being of its citizens; robustness of the economy; and functioning of its institutions. We used a global benchmark for that analysis, based on the performance of the "Digital 5" (D5) countries – Estonia, Israel, New Zealand, South Korea, and the United Kingdom – to capture the standards set by the digitally most advanced governments in the world.

To adapt the framework to this analysis of India's policy performance, we retained the D5 as a global standard and we also created a new benchmark using a comparable peer group comprising five emerging market countries: India, Nigeria, the Philippines, Mexico, and Poland. This geographically-diverse group offers different stages of economic development and represent democracies that are either amid or just out of an elections cycle. All five countries are also emerging in terms of their digital economies; they are "Break Out" nations, as measured by our Digital Evolution Index.

In this peer group, two countries, Nigeria and the Philippines, are close to India in terms of GDP per capita. Two others are more advanced. Mexico is a richer country, but is proximate to India in terms of the dynamism of its economy — it is ranked close to India on the Global Innovation Index. Poland helps set a longer-term "stretch" target for economic advancement; while it is part of the benchmark MSCI emerging markets index, Poland is on the cusp of moving from emerging to advanced economic status and has been upgraded to advanced status by the FTSE Russell index.

On the voting side, Mexicans voted in July of 2018 and elections concluded in Nigeria in February 2019; the former elected a new president, who started a term in December 2018, while the latter returned the incumbent. The Philippines, with a crucial mid-term referendum on the current government, and Poland, with parliamentary elections, are going to the polls in May and November 2019, respectively.

We refer to this group of five emerging market countries as the EM5. For these countries, we brought together data on over 178 different indicators, from over 40 data sources, including public and proprietary databases. Each country was given a score for its performance on each indicator; we used the best score for each indicator to create the EM5 Benchmark. The methodology for arriving at this new benchmark follows the one used for the earlier D5 Benchmark created as part of the Smart Societies research initiative. Given the large number of indicators analyzed, we organized them so that each indicator could be classified under one of 12 broad benchmark components.

• Citizens/People Components:

- o inclusivity,
- o environment and quality of life,
- o state of talent and the human condition,
- o talent development.

• Economy Components:

- o global connectedness,
- o economic robustness,
- o entrepreneurial ecosystem,
- o innovation capacity.

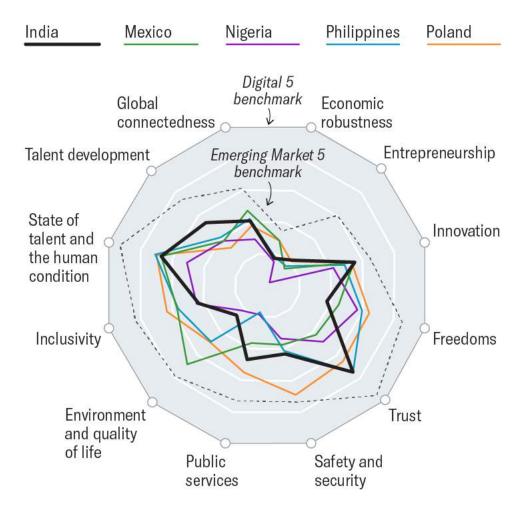
• Institutions Components:

- o freedom of speech, expression and access to content, both offline and online,
- o trust,
- o safety and security,
- o public services.

We picked the time-frame for the analysis to be 2016-2017 to align with the mid-point of the current Indian government's administration and to enable better comparisons with the peer group. Specifically, we wanted to avoid campaign-related activity and other factors in the comparison countries that might cloud the picture. We posed questions such as: How do the EM5 countries compare against each other and against the global D5 benchmark, introduced in our earlier article? How does India, in particular, perform relative to its peers? The chart below shows a summary of our analysis:

How India Compares to Its Peers on Social, Economic, and Institutional Benchmarks

It leads other countries on innovation and talent development, but falls short on inclusivity, the environment, and quality of life.



Note: These countries, chosen because they have emerging digital economies and are democracies in the midst of election cycles, are referred to as the "Emerging Market 5." The five most digitally advanced governments in the world — Estonia, Israel, New Zealand, South Korea, and the UK — are referred to as the "Digital 5." The benchmarks for both are based on the cumulative scores of best performing countries for each component.

Source: The Fletcher School at Tufts University



For each country, we computed a score for its performance on each of the 12 components. The scores helped facilitate several comparisons: between India and another country; between any set of countries among the EM5; and against the EM5 and D5 benchmarks. This framework also offered a perspective for each country on relative areas of strengths and weaknesses in individual areas.

To get a sense of how the scores were derived, here's an example. Pick one component and ask: how well a country is doing in terms of facilitating, say, an inclusive society? The inclusivity component, like all the others, is given a score, which itself is based on scores earned along various contributing factors. The inclusivity score is an aggregate of scores earned for several factors, including labor market inclusion, economic mobility, diversity and acceptance, and government policies that promote inclusion. We also observed how these scores have changed over a five year period, 2011/2-2016/7 to get a sense of how the performance has improved or declined leading up to the point of evaluation, which is mid-way through the administration's tenure in 2016-2017.

Areas of India's strengths: talent and innovation

The number one issue for Indian voters, according to multiple surveys, is jobs. While India has a long way to go in building the requisite levels of job-ready skills and education in the country's abundant labor pool, it performs the strongest among the EM5 in Talent Development as well as on other key questions we sought answers to as part of our analysis. We asked questions like these:

Are ventures able to find people with the right skills? For example, one of the data points we surfaced found that Indian workers offer the largest pool among the EM5 on the digital freelancing website Toptal, one measure of the country's labor supply with relevant skills.

How adept is a country at attracting talent from abroad? India possesses the longest entrepreneur and investor visa length of all the EM5 countries, making it attractive to entrepreneurs and investors.

Is there training for the work force? In addition to a greater availability of public and private training services, there are generally more Indians registered in online education platforms from multiple international sources than the other four countries in our analysis.

India leads the EM5 cohort in innovation. It performs particularly well on several key questions, with some examples given below:

How much is being spent on innovation? The World Economic Forum gives India a 4.5/7 rating on company R&D spending. This is the highest value within the EM5 cohort, at 73% of the D5 Benchmark.

Are individuals, companies, and governments willing to innovate? Among its EM5 peers, India's innovation capacity rating by the WEF is second only to that of the Philippines.

How easy is it for startups to borrow money? Indian startups received the most seed and early stage investments, compared to those of the other EM5 countries. Here, India achieved 44% of the D5 benchmark.

Is this a favorable environment to start a business? India leads the EM5 in terms of conditions favorable to starting a business and is 45% of the D5 benchmark. That said, it takes time to start a business in India, an average of 29.8 days, compared to the D5 average of 4.9 days and the EM5 average of 24.4 days.

Overall, India's strong performance in innovation against the benchmarks is helped by the government's emphasis on adoption of digital services and prioritization of a robust ICT industry.

Weaker performance for India in public health, environment, and inclusivity

The state of public health, the environment, and the degree of inclusion are India's principal areas of weakness relative to the EM5. We asked questions like these to analyze this:

To what extent is there a general sense of well-being? In a 2017 Gallup survey, for instance, only 3% of respondents in India reported feeling that they are thriving, in contrast to the EM5 average of 24%.

Are people living longer and are children and adults healthier? Though health standards in India are improving, India's life expectancy remains low at 68 years, compared to Poland's 77.6 years.

Do people of different genders and identity groups have equal opportunities to participate in the labor force? Women comprise only 24.5% of India's total labor force, compared to 45% of Poland's, and 45.4% of Nigeria's labor force.

How productive is the workforce? While GDP per person employed in India has grown 29% since 2012, the country lags the EM5 average in productivity.

Other notable peer comparisons

Comparing India to the two countries that are closest in socio-economic terms, Nigeria and the Philippines, India outperforms Nigeria on all but two components, Freedoms and Inclusivity, and does better than the Philippines on Talent Development, Public Services, and Innovation.

Particularly notable is India's weaker performance on inclusivity across the board. Among the many gaps, consider the low participation of women in the workforce. For India, women constitute 24.5% of the workforce, whereas Nigeria has the highest ratio of female to male labor force participation — 84% as many women in the labor force as there are men, compared to the EM5 average of 63%. This true even though Nigeria has only a marginally higher female to male ratio in the 25-54 age category

than India. The Philippines has a 40% female labor force and laws mandating equal pay for men and women.

When compared with richer countries, such as Mexico and Poland, India outperforms Mexico on a number of components: Trust, Talent Development, Safety and Security, and Public Services. As for Poland, India outperforms it on Trust and Talent Development. India had the highest trust in government institutions among the EM5. However, Mexico boasts a more satisfied population, with 41% reporting that they were "thriving" in 2017. By contrast, 30% of Poles surveyed report to be "thriving." In India, the number was a dismal 3%.

As India votes, our analysis finds shows that the Modi administration has made advances on several fronts, most notably in education, skill-building, and support for innovation and it has improved trust in government institutions relative to previous administrations and relative to its peer group; overall India had improved in seven out of the 12 components when studied over a five year period leading up to 2016-17. There are still crucial areas where India is lagging its peers: fewer freedoms, lingering low productivity – and most significantly, insufficient progress towards building a more inclusive society.

Economic robustness has suffered as well, with a combination of drastic measures, such as demonetization, poor implementation of tax reform, and increasingly protectionist policies. The next administration – whether it is a return of the incumbents or new leadership – should pay close attention to these gaps and prioritize closing them to ensure inclusive growth and India's role as an emerging global power. It is, after all, expected to be the world's fastest growing large economy for years to come – and uneven performance against its peers and global benchmarks will only serve to undermine the nation's impact on the world.

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ARTICLE GLOBAL STRATEGY

The "Smart Society" of the Future Doesn't Look Like Science Fiction

by Bhaskar Chakravorti and Ravi Shankar Chaturvedi

Harvard Business Review

GLOBAL STRATEGY

The "Smart Society" of the Future Doesn't Look Like Science Fiction

by Bhaskar Chakravorti and Ravi Shankar Chaturvedi october 05, 2017



What is a "smart" society? While flights of imagination from science-fiction writers, filmmakers, and techno-futurists involve things like flying cars and teleportation, in practice smart technology is making inroads in a piecemeal fashion, often in rather banal circumstances. In Chicago, for example, predictive analytics is improving health inspections schedules in restaurants, while in Boston city officials are collaborating with Waze, the traffic navigation app company, combining its data with inputs from street cameras and sensors to improve road conditions across the city. A city-state such as Singapore has a more holistic idea of a "smart nation," where the vision includes initiatives from self-driving vehicles to cashless and contactless payments, robotics and assistive technologies, dataempowered urban environments, and technologyenabled homes.

More broadly, we might define a smart society as one where digital technology, thoughtfully deployed by governments, can improve on three broad outcomes:

the well-being of citizens, the strength of the economy, and the effectiveness of institutions.

The potential for technologies to enable smart societies is rising. For example, internet-of-things sensor applications are envisioned to deliver a wide range of services, from smart water to industrial controls to e-health. The market for smart technologies is predicted to be worth up to \$1.6 trillion by 2020, and \$3.5 trillion by 2026. Surely, given the size of the opportunity, increasing interest among governments and policy makers, and the explosion of relevant technologies, we can start to understand what smart societies are and establish standards and ideals to aim for.

The Fletcher School at Tufts University and Microsoft Digital have launched an initiative to explore this issue, with several questions as the guiding framework:

- 1. What are smart societies, and what are their core components?
- 2. Are there countries that might offer realistic models for such societies?
- 3. Are there patterns of different approaches to smartness reflecting different contexts, histories and societal priorities?
- 4. What are the implications for policy makers, particularly as they consider digital technology whose applications are growing at an accelerated pace as a lever for getting to smartness?

To answer these questions, we began with a simple premise: Neither "smartness" nor the technology to be deployed is the end goal. A smart society ought to be defined by a framework that is based on outcomes. Its building blocks are what governments and policy makers aim to provide for their citizens. The technology is just a way to get there.

The next step was to identify potential models for smart societies. A natural group of countries to use as role models was the Digital 5, or D5, nations, representing the most digitally advanced governments in the world. The group comprises Estonia, Israel, New Zealand, South Korea, and the UK. Their objective, as set out by the D5 charter, is to provide the best digital public services and to share practices across these high-performing digital governments. There is a plan to admit more countries to this group as it establishes practices that can benefit countries from across the world.

To set an aspirational but realistic target, we created a benchmark that combines the best attributes of these advanced digital nations. Our hope is that it serves several purposes. First, it sets a standard for policy makers based on what has been demonstrated to be feasible by at least one of the D5 nations. Second, with the benchmark as a composite, no single nation achieves it and yet each of the five countries' progress toward the ideal can be assessed in terms of performance against the benchmark. If any country intends to close a gap, it can turn to the others to learn about best practices and import knowledge that could help it get to the benchmark. The benchmark, therefore, is a tool for policy makers, technology innovators, and others to evaluate progress and prioritize the gaps, thus enabling a dialogue among the key actors and a plan for action.

Methodology

We collected data on the D5 countries on over 240 different indicators, covering three major areas: citizens and their well-being, the economy, and the state of institutions. Over 40 data sources were used, including public and proprietary databases. Each country was given a score for its performance on each indicator; we used the best score for each indicator to create the Smart Societies Benchmark. Given the large number of indicators analyzed, we organized them so that each indicator could be classified under one of 12 broad benchmark components. These broad components were:

- **Citizens/People Components:** the four components in this category are:
 - o inclusivity,
 - o environment and quality of life,
 - state of talent and the human condition,
 - o talent development.
- **Economy Components:** the four components in this category are:
 - o global connectedness,
 - o economic robustness.
 - o entrepreneurial ecosystem,
 - innovation capacity.
- **Institutions Components:** the four components in this category are:
 - o freedoms offline and online,
 - o trust,
 - o safety and security,
 - o public services.

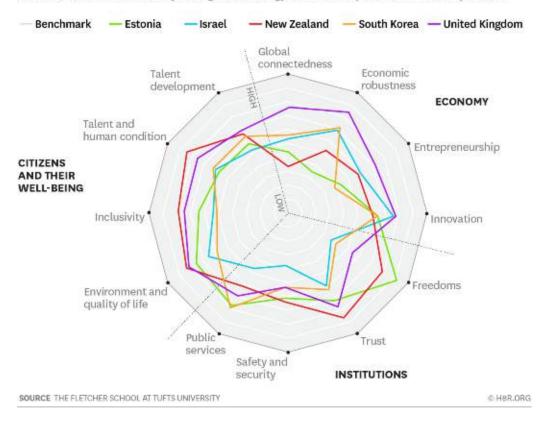
Each component is made up of different clusters of indicators. As an example, consider the first component listed above: inclusivity. The score assigned to this component is an aggregate of scores earned by different clusters of inclusion-related indicators; the clusters that make up inclusivity are labor market inclusion, economic mobility, diversity and acceptance, and policies that promote inclusion. In turn, the "policies that promote inclusion" cluster includes indicators such as data on policies, laws, and regulations that promote access for marginalized or disadvantaged groups. As observed above, each D5 country gets a score along each indicator. Thus, the benchmark score for the Inclusivity component is the aggregate of the top scores for each indicator within this broad benchmark component. The scores for each component were normalized.

Finally, each of the D5 countries was scored along these indicators, and the resulting country score was compared with the benchmark to evaluate each country's progress and to derive patterns and differences in priorities. Collectively, the D5 nations serve two important purposes for our project: They give us a way to construct a global benchmark that can be used to assess D5 nations and other countries, and they each offer a case study and model for what smart can look like.

The outcomes of this exercise are shown in the exhibits below. Higher scores along each of the 12 components are represented by the distance from the center. The line connecting each country's component scores across all 12 components is its "Smart Society Footprint."

How 5 Countries Rank Against Smart Society Benchmarks

Each was rated on how well they use digital technology across 12 competencies in three major areas.



There are several implications that flow from this analysis.

- The D5 nations constitute an extraordinary group, with the world's most digitally advanced governments, and collectively they help us define a global benchmark for a smart society. The benchmark is aspirational and yet feasible.
- The D5 nations share several characteristics, even as they offer role models for different types of smart societies. Each has a democratically elected government that plays an active role in offering services to its citizenry. Each is a highly evolved digital player. As reported in our recent *HBR* article "60 Countries' Digital Competitiveness, Indexed," each scored highly on our Digital Evolution Index; with the exception of South Korea, each is also in a state of high digital momentum. Yet each also has a unique context.

Consider some of the key differences:

• Estonia is an outlier. It is a small country, formed out of the breakup of the Soviet Union. It used technology to build out its government services and embrace a market economy.

- Despite their historical associations, the UK and New Zealand are at extreme ends of the
 connectivity spectrum. The UK is often identified as a global hub (a position that is going to be
 tested during the Brexit process), with strong global economic and political connections; New
 Zealand is geographically distant from much of the economic and political centers of the world, and
 is used to operating at the periphery of the global economy.
- Both Israel and South Korea have escaped the "middle-income trap", successfully transitioning from middle-income to high-income status a relatively rare feat. They both are key players in the global economy today, have great geopolitical significance, and are strong U.S. allies. Israel is mostly surrounded by hostile neighbors in a politically tense region. South Korea resides in a different politically tense region, in North Asia, with an active threat of conflict with its nuclear-armed neighbor, North Korea, and the added tensions created by China's growing dominance.

We asked Colin MacDonald, Chair of the D5 and the New Zealand's Government Chief Digital Officer, about the differences between the D5 countries. He said: "Although we all bring a diverse range of perspectives, the D5 allows us to leverage the knowledge and experience of our smartest people, creating faster and more efficient digital governments for our citizens. We do this through collaboration and sharing. We all learn from one another, and adopt the solutions that will work in our own countries. Ultimately, this makes us all stronger as digital nations."

The Smart Societies Footprint analysis reveals that each D5 nation is an archetype of a distinct model of "smartness," which reflects a combination of the country's context and priorities. In a world with limited resources, the ability to prioritize and identify areas of focus and particular form of smartness that fits with each country's circumstances can prove to be essential. Here are some of the distinct patterns, which offer models for other countries to use.

Strong Institutions Footprint: Estonia's footprint reveals its initial priorities on establishing strong institutions, particularly in its commitment to assuring post-Soviet era freedoms to its citizens. Its esolutions have resulted in high levels of government transparency and easy access to data and public services. Its priorities on creating an open and decentralized system that links multiple digital applications and services are core to how it accomplished these outcomes. Its key gap areas as revealed by its distance from the benchmark are in establishing greater connectedness and robustness of its economy. Given its heavy investment in digital infrastructure, the government can leverage this foundation to narrow the gaps.

Strong Innovation Footprint: Israel demonstrates strength in the area of innovation, while its greatest opportunities for closing gaps are in the area of strengthening institutions. In addition to the technology-related innovations that are a product of Israel's investment in its national security infrastructure, a major government plan, the Digital Israel initiative, with its emphasis on high-speed internet connectivity, has been a boon for businesses looking to operate online. The country can utilize the same technological platforms for improving public services and improving the state of interaction between the government and its people – which our analysis has identified as being among the gaps that need to be narrowed.

Strong Well-Being Footprint: New Zealand offers a case study in strengths in the components that ensure well-being of a country's people, including the environment and quality of life, inclusivity, and the state of its talent base. Here, policy makers view digital government as one where digital technology is a tool for governments to interact with its "customers" — citizens and businesses — so that they can experience public services in a seamless, integrated, and trusted manner. Given its physical distance from much of the world, New Zealand has some inherent challenges in narrowing the gap in its global connectedness; its investment in a seamless digital ecosystem to enhance the well-being of its people and the quality of its institutions indicates a focus on areas where it can compensate for its physical distance, and also attract and retain talent to narrow the gaps in the areas of innovation and entrepreneurship.

Strong Public Services Footprint: South Korea has utilized a digital initiative, Government 3.0, to provide personalized public services. One of the key areas where the government needs to narrow the gap is in the robustness of the economy and the quality of its institutions. The Government 3.0 initiative is potentially a powerful lever in advancing such an objective through several means: ensuring greater transparency and providing more data on the workings of public agencies, encouraging more cross-agency collaborations, and helping people find jobs and economic opportunities more readily.

Strong Economy Footprint: Historically, the UK has been one of the world's most significant economies. It is the fifth largest in terms of GDP, and is one of the most globally connected of all major economies. It has historically been the preeminent hub for global finance because of a combination of history, geography, and its strengths in digital technologies. As one of the authors of this article (Chakravorti) has observed earlier in HBR, "Would a Hard Brexit Cripple the EU's Digital Economy?" the UK is a star performer among EU digital economies. These strengths show in the benchmarking analyses above. The conundrum for the UK is that, with Brexit, it runs the risk of diminishing its economic strengths. Already, since the Brexit referendum, it has been the worst-performing advanced economy in terms of growth; its currency has lost more than 13% of its value against the dollar because of the uncertainties caused by Brexit. In order to compensate for the turbulence ahead for the economy, it is essential for the government to use tools at its disposal to shore up the other aspects of society. Here the UK's Government Transformation Strategy 2017-2020 and "Government as a Platform" approaches help provide first-rate digital services to grow talent, improve workplace conditions, and help transformations through shared platforms and data.

These case studies suggest that before we can take advantage of the ways in which smart technology can strengthen economies, make institutions more effective, and improve citizens' well-being, we need to bring the idea of a "smart society" down to earth, defining it in ways that are practical, actionable, and focused on outcomes. Benchmarking can help governments better understand their current capabilities.

Of course, it's quite possible that one day all smart societies will be traversed by flying cars and lighted by streetlights that communicate with each other. In the meantime, we can get societies to be

a whole lot smarter by making better use of the technology we have at hand. As the footprints of the world's most digitally advanced governments indicate, even the best-positioned nations have some gaps to close. And those gaps, and the technologies to close them, vary according to every country's unique context and priorities.

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