References

- ¹ https://www.chathamhouse.org/chatham-house-rule
- ² https://www.slideshare.net/futureagenda2/future-of-value-of-data-interim-summary-aug-2018compressed
- ³ https://integratedreporting.org/
- 4 https://www.weforum.org/agenda/2017/09/the-value-of-data/
- ⁵ London Workshop
- ⁶ Dakar
- 7 Jakarta
- ⁸ http://reports.weforum.org/rethinking-personal-data/executive-summary/?doing_wp_cron=1547984248.0330200195312 500000000
- ⁹ https://www.michalsons.com/wp-content/uploads/2017/11/PoPI-Regulations-Final-14-Dec-2018-3-languages-42110_14-12.pdf
- ¹⁰ Nairobi workshop
- ¹¹ Johannesburg workshop
- ¹² Nairobi workshop
- 13 Pretoria workshop
- 14 https://www.bigbangerp.com/blog/data-localization-laws/
- 15 https://www.econstor.eu/bitstream/10419/174802/1/ecipe-pb-2016-03-Unleashing-Internal-Data-Flows-in-the-EU.pdf
- ¹⁶ London Workshop
- ¹⁷ Madrid workshop
- 18 London workshop
- 19 Bogota workshop
- ²⁰ Lagos workshop
- ²¹ Bogota workshop
- ²² London Dinner 2018
- ²³ https://hbswk.hbs.edu/item/do-experts-or-collective-intelligence-write-with-more-bias-evidence-from-encyclopdia-britannica-and-wikipedia
- 24 Bangkok workshop
- ²⁵ Madrid workshop
- ²⁴ Tokyo Workshop 31
- ²⁵ Digital Skills Crisis report from UK Government
- ²⁶ https://publications.parliament.uk/pa/cm201617/cmselect/cmsctech/270/270.pdf
- ²⁷ e.g. https://www.weforum.org/reports/the-future-of-jobs-report-2018, https://ainowinstitute.org/Al_Now_2017_Report. pdf and
- 28 https://www.pwc.com/gx/en/services/people-organisation/workforce-of-the-future/workforce-of-the-future-the-competing-forces-shaping-2030-pwc.pdf $\,29\,$
- ²⁹ http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf 30
- 30 Tokyo Workshop 31
- 31 Washington DC Workshop

- 32 Nairobi workshop
- 33 Tokyo Workshop
- 34 Madrid Workshop
- ³⁵ https://www.theguardian.com/global-development/2019/feb/27/millions-of-ugandans-quit-internet-after-introduction-of-social-media-tax-free-speech
- 36 https://www.cbronline.com/opinion/data-privacy-day-2018
- ³⁷ https://www.wsj.com/articles/why-i-put-my-dogs-photo-on-social-media-but-not-my-sons-11552404655?mod=searchr esults&page=1&pos=12
- ³⁸ http://reports.weforum.org/rethinking-personal-data/executive-summary/?doing_wp_cron=1547984248.033020019531 2500000000
- 39 https://www.pewresearch.org/fact-tank/2016/09/21/the-state-of-privacy-in-america/
- ⁴⁰ https://dipp.gov.in/sites/default/files/DraftNational_e-commerce_Policy_23February2019.pdf
- 41 http://cyberlaw.stanford.edu/publications/thanks-amazon-government-will-soon-be-able-track-your-face
- ⁴² https://searchsecurity.techtarget.com/feature/Ciscos-chief-privacy-officer-on-the-future-of-data-after-GDPR?
- ⁴³ https://www.ft.com/content/ff2d9600-259a-11e9-8ce6-5db4543da632?
- ⁴⁴ Marreiros, H., Tonin, M., Vlassopoulos, M., & Schraefel, M. C. (2017). "Now that you mention it": A survey experiment on information, inattention and online privacy. Journal of Economic Behavior & Organization
- 45 http://www.meaningfulconsent.org/reports/2017/consentful_economy/
- ⁴⁶ This is an area which a number of regulatory authorities are already examining (e.g. the UK's CMA and the EC).
- ⁴⁷ Hong Kong Workshop
- ⁴⁸ Bangkok workshop
- ⁴⁹ https://webfoundation.org/2017/11/the-future-of-open-data-and-the-openness-agenda/
- 50 https://data.worldbank.org
- 51 https://data.oecd.org
- 52 https://data.europa.eu/euodp/en/home
- 53 http://data.un.org
- 54 https://opendatabarometer.org/
- 55 http://odin.opendatawatch.com
- 56 https://index.okfn.org/place/
- 57 https://www.microsoft.com/en-us/open-data-initiative
- ⁵⁸ Argast and Zvyagintseva 2016; Weerakkody et al. 2017; Robinson and Ward-Mather 2017.
- ⁵⁹ Janssen, Marijn, Yannis Charalabidis, and Anneke Zuiderwijk. "Benefits, adoption barriers and myths of open data and open government." Information systems management 29.4 (2012): 258-268
- 60 https://webfoundation.org/2017/11/the-future-of-open-data-and-the-openness-agenda/
- 61 https://www.ft.com/content/f8e9c2ea-b29b-11e8-87e0-d84e0d934341
- 62 https://blog.okfn.org/2017/05/31/open-data-quality-the-next-shift-in-open-data/
- 63 https://okfn.org/

- ⁶⁴ https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/open-data-unlocking-innovation-and-performance-with-liquid-information
- 65 https://www.govloop.com/community/blog/future-open-data-relationship-private-sector/
- 66 https://www.waze.com/en-GB/about
- 67 https://www.theverge.com/transportation/2015/5/19/8622831/uber-self-driving-cars-carnegie-mellon-poached
- 68 https://academic.oup.com/jlb/advance-article/doi/10.1093/jlb/lsy021/5114251
- 69 https://www.ft.com/content/94e86cd0-44b6-11e9-a965-23d669740bfb
- ⁷⁰ https://www.theguardian.com/science/2005/oct/14/genetics.research
- ⁷¹ https://eu.usatoday.com/story/news/2018/02/12/trump-budget-continues-support-air-traffic-control-privatization/324331002/
- 72 https://dq.dk/wp-content/uploads/2017/11/Open-Access-to-Data---It's-not-that-Simple.compressed-1.pdf
- 73 https://www.nature.com/articles/s41467-019-10933-3
- ⁷⁴ https://www.cigionline.org/publications/open-data-endgame-countering-digital-consensus
- 75 https://www.infineon.com/cms/en/discoveries/internet-of-things-2030/
- 76 https://www.intel.com/content/www/us/en/internet-of-things/infographics/guide-to-iot.html
- ⁷⁷ https://www.cisco.com/c/dam/en/us/products/collateral/se/internet-of-things/at-a-glance-c45-731471.pdf
- ⁷⁸ https://www.researchgate.net/publication/300366604_5G_Vision_and_Requirements_for_Mobile_Communication_ System_towards_Year_2020
- 79 https://www.seagate.com/gb/en/our-story/data-age-2025/
- 80 https://www.bain.com/insights/choosing-the-right-platform-for-the-industrial-iot
- 81 https://www.frontier-economics.com/media/1167/201803_the-economic-impact-of-iot_frontier.pdf
- 82 https://www.pwc.fr/fr/assets/files/pdf/2017/03/2017_ai_and_iot_v13b.pdf
- 83 Frankfurt workshop
- ⁸⁴ https://www.futurefarming.com/Tools-data/Articles/2018/10/Data-ownership-questions--and-why-theyre-important-340743E/
- 85 https://www.flagshipfarmers.com/en/about-the-program/
- 86 https://newsroom.toyota.co.jp/en/detail/18135029/
- 87 https://www.futureagenda.org/news/the-future-of-automotive-data-and-its-potential-value
- 88 https://www.futureagenda.org/news/future-of-autonomous-vehicles-building-the-informed-view
- 89 https://www.futureagenda.org/news/the-future-of-automotive-data-and-its-potential-value
- 90 https://www.sciencedirect.com/science/article/pii/S0963868717302615
- 91 https://publications.parliament.uk/pa/ld201719/ldselect/ldai/100/100.pdf
- 92 https://www.thetimes.co.uk/article/nhs-data-is-a-such-precious-asset-it-must-be-given-a-proper-valuation-7967nbmvd
- 93 https://www.imf.org/~/media/Files/Conferences/2018/6th-stats-forum/presentations/session-3-wendy-li-value-of-data-presentation.ashx?la=en
- 94 https://www.ft.com/content/93ffec82-ed2a-11e8-8180-9cf212677a57
- ⁹⁵ https://www.reuters.com/article/us-cybersecurity-hospitals/your-medical-record-is-worth-more-to-hackers-than-your-credit-card-idUSKCN0HJ21I20140924

- ⁹⁶ https://www.experian.com/blogs/ask-experian/heres-how-much-your-personal-information-is-selling-for-on-the-dark-web/
- 97 https://ig.ft.com/how-much-is-your-personal-data-worth/
- 98 http://reconanalytics.com/2017/05/digital-advertising-takes-the-lead-dominated-by-google-and-facebook/
- 99 https://www.ft.com/content/e38b60ce-27d7-11e8-b27e-cc62a39d57a0
- 100 https://www.ft.com/content/a8c36a90-dba5-11e8-9f04-38d397e6661c
- 101 https://www.ft.com/content/f00d2f70-8a6f-11e9-a1c1-51bf8f989972
- 102 https://www.theguardian.com/commentisfree/2018/apr/27/chris-hughes-facebook-google-data-tax-regulation
- 103 Manila Workshop
- ¹⁰⁴ https://ec.europa.eu/digital-single-market/en/news/study-emerging-issues-data-ownership-interoperability-re-usability-and-access-data-and
- 105 http://integratedreporting.org
- 106 https://www.bbc.co.uk/news/business-46050724
- 107 https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=UG
- 108 http://ecipe.org/publications/restrictions-to-cross-border-data-flows-a-taxonomy/
- 109 https://www.ft.com/content/6f0f41e4-47de-11e8-8ee8-cae73aab7ccb
- 110 https://www.bigbangerp.com/blog/data-localization-laws/
- 1111 https://www.forbes.com/sites/ronakdesai/2019/04/30/indias-data-localization-remains-a-key-challenge-for-foreign-companies/#45fe7713e0a3
- 112 https://itif.org/publications/2017/05/01/cross-border-data-flows-where-are-barriers-and-what-do-they-cost
- ¹¹³ Nairobi workshop
- 114 https://economictimes.indiatimes.com/tech/ites/all-about-indias-data-localisation-policy/articleshow/66297596.cms
- $^{115} \, https://www.business-standard.com/article/companies/google-facebook-protesting-data-localisation-to-evade-taxes-phonepe-118091300023_1.html$
- ¹¹⁶ https://economictimes.indiatimes.com/news/economy/policy/localisation-heat-data-bank-here-may-help-government-debit-taxes/articleshow/67120911.cms
- 117 https://www.ft.com/content/92bb34a8-b4e5-11e8-bbc3-ccd7de085ffe
- 118 http://knowledge.freshfields.com/m/Global/r/3824/where_are_we_now_with_data_protection_law_in_china_
- 119 https://jsis.washington.edu/news/chinese-data-localization-law-comprehensive-ambiguous/
- 120 https://www.theguardian.com/technology/2016/feb/22/tim-cook-apple-refusal-unlock-iphone-fbi-civil-liberties
- ¹²¹ https://www.theguardian.com/commentisfree/2018/mar/04/apple-users-icloud-services-personal-data-chinacybersecurity-law-privacy
- 122 https://www.endgame.com/blog/technical-blog/march-toward-data-localization
- 123 https://www.gsma.com/newsroom/press-release/gsma-free-flow-of-data-across-borders-essential-for-asias-digital-economies/
- 124 https://theaseanpost.com/article/data-localisation-southeast-asia
- 125 https://www2.deloitte.com/insights/us/en/focus/tech-trends/2018/data-sovereignty-management.html
- 126 https://restoreprivacy.com/5-eyes-9-eyes-14-eyes/

- 127 https://itif.org/publications/2017/05/01/cross-border-data-flows-where-are-barriers-and-what-do-they-cost
- ¹²⁸ Nairobi workshop
- 129 https://www.nytimes.com/2018/05/04/books/review/automating-inequality-virginia-eubanks.html
- ¹³⁰ https://www.forbes.com/sites/davidshaywitz/2018/02/18/the-deeply-human-core-of-roches-2-1b-tech-acquisitionand-why-they-did-it/#e2d838e29c21
- 131 https://hbr.org/2018/08/what-data-scientists-really-do-according-to-35-data-scientists
- 132 https://qz.com/1427621/companies-are-on-the-hook-if-their-hiring-algorithms-are-biased/
- ¹³³ https://www.reuters.com/article/us-amazon-com-jobs-automation-insight/amazon-scraps-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK08G
- 134 2017 survey by talent software firm CareerBuilder
- ¹³⁵ https://www.technologyreview.com/s/612775/algorithms-criminal-justice-ai/
- ¹³⁶ https://www.futureagenda.org/news/future-of-digital-identity-report-launch
- ¹³⁷ Madrid workshop
- 138 Washington DC workshop
- $^{139}\,\text{https://www.accenture.com/t00010101T000000Z}_w_/gb-en/_acnmedia/PDF-22/Accenture-Data-Ethics-POV-WEB. pdf#zoom=50$
- 140 https://www.ft.com/content/24aaaa9a-674a-11e8-8cf3-0c230fa67aec
- 141 https://www.blog.google/technology/ai/ai-principles/
- 141 https://www.salesforce.com/company/ethical-and-humane-use/
- 143 https://www.bbc.co.uk/news/technology-47825833
- 144 https://www.techatbloomberg.com/blog/time-data-ethics-conversations-dinner-table/?utm_source=dsorg
- ¹⁴⁵ https://www.theguardian.com/commentisfree/2018/mar/04/apple-users-icloud-services-personal-data-chinacybersecurity-law-privacy
- ¹⁴⁶ https://www.bloomberg.com/news/articles/2017-09-28/microsoft-ceo-urges-tech-to-focus-on-self-policing-not-regulation-fears
- 147 https://www.partnershiponai.org
- 148 https://www.thebritishacademy.ac.uk/sites/default/files/JBA-6s1-Hamdani-Hashai-Kandel-Yafeh.pdf
- ¹⁴⁹ https://www.thebritishacademy.ac.uk/future-corporation-research-programme
- 150 https://www.thebritishacademy.ac.uk/sites/default/files/JBA-6s1-Hamdani-Hashai-Kandel-Yafeh.pdf
- 151 https://marianamazzucato.com/publications/books/value-of-everything/
- 152 https://www.shoshanazuboff.com/new/
- ¹⁵³ https://www.thebritishacademy.ac.uk/future-corporation-research-programme
- 154 https://www.theguardian.com/uk-news/2018/feb/04/cambridge-most-unequal-city-population-divide-income-disparity
- ¹⁵⁵ https://www.cityoflondon.gov.uk/business/economic-research-and-information/research-publications/Documents/research-2017/total-tax-report-2017.pdf
- ¹⁵⁶ https://csimarket.com/stocks/singleProfitabilityRatiosy.php?code=AAPL&itx
- ¹⁵⁷ https://www.ft.com/content/ec84ac4e-4653-11e9-a965-23d669740bfb
- 158 https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c

- 159 https://www.gov.uk/government/publications/unlocking-digital-competition-report-of-the-digital-competition-expert-panel
- 160 http://umich.edu/~thecore/doc/Friedman.pdf
- ¹⁶¹ https://www.ft.com/content/a84647f8-0d0b-11e9-a3aa-118c761d2745
- 162 https://www.ft.com/content/3732eb04-c28a-11e9-a8e9-296ca66511c9
- ¹⁶³ https://www.thebritishacademy.ac.uk/programmes/future-of-the-corporation
- 164 https://www.wired.com/story/paris-call-cybersecurity-united-states-microsoft/
- ¹⁶⁵B Smith and C Browne, "Tools and Weapons, The promise and the peril of the digital age," Penguin, 2019
- ¹⁶⁶ https://www.theguardian.com/commentisfree/2018/sep/16/wanted-in-digital-monopoly-age-powers-to-curb-online-giants
- ¹⁶⁷ https://www.ft.com/content/b16fd228-ea72-11e9-a240-3b065ef5fc55
- 168 https://www.wsj.com/articles/google-to-be-fined-5-billion-by-eu-in-android-case-1531903470?mod=article_inline
- ¹⁶⁹ https://www.theguardian.com/technology/2016/may/12/facebook-free-basics-india-zuckerberg
- ¹⁷⁰ Frankfurt Workshop
- ¹⁷¹ Nigeria Workshop
- ¹⁷² https://www.ft.com/content/d72fb54c-ffc1-11e8-b03f-bc62050f3c4e
- ¹⁷³ Hong Kong workshop
- ¹⁷⁴ Hong Kong workshop
- 175 https://www.wsj.com/articles/the-global-tech-backlash-is-just-beginning-1540476151?ns=prod/accounts-wsj

Context

This is one of 18 key insights to emerge from a major global open foresight project exploring the future value of data.

Throughout 2018, Future Agenda canvassed the views of a wide range of 900 experts with different backgrounds and perspectives from around the world, to provide their insights on the future value of data. Supported by Facebook and many other organisations, we held 30 workshops across 24 countries in Africa, Asia, the Americas, and Europe. In them, we reviewed the data landscape across the globe, as it is now, and how experts think it will evolve over the next five to ten years.

The aim of the project was to gain a better understanding of how perspectives and priorities differ across the world, and to use the diverse voices and viewpoints to help governments, organisations, and individuals to better understand what they need to do to realise data's full potential.

From the multiple discussions 6 over-arching themes were identified alongside 12 additional, related future shifts as summarised in the diagram below.

About Future Agenda

Future Agenda is an open source think tank and advisory firm. It runs a global open foresight programme, helping organisations to identify emerging opportunities, and make more informed decisions. Future Agenda also supports leading organisations, large and small, on strategy, growth and innovation.

Founded in 2010, Future Agenda has pioneered an open foresight approach bringing together senior leaders across business, academia, NFP and government to challenge assumptions about the next ten years, build an informed view and establish robust growth strategies focused on major emerging opportunities. We connect the informed and influential to help drive lasting impact.

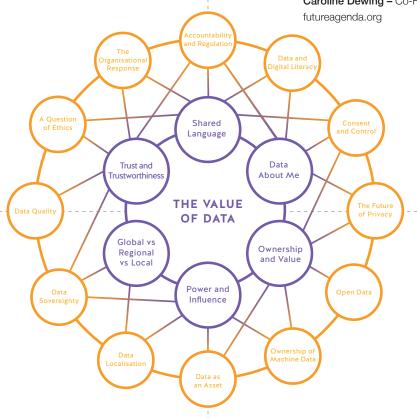
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Details of each of these, a full report and additional supporting information can all be found on the dedicated mini-site: www.deliveringvaluethroughdata.org

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