

Operation Strategy Note

Consumer Impact Assessment on Cross-Border Data Flow

1. Background

1.1 Introduction to Data Localisation

The digital technology revolution has bolstered globalisation¹, turning the *world into a global village*. Not only has it enhanced People to People (P2P) connectivity, but has also catalysed Business to Business (B2B) interaction. Reports suggest that cross-border data flow contributed USD 2.8 trillion to the global economy in 2014, which is expected to touch USD 11 trillion by 2025.²

However, governments of many countries have been prompted to restrict cross-border data flow and mandate ‘data localisation’³. Some of such countries include China, Russia, Vietnam, Indonesia etc., which have drafted provisions requiring localisation of certain data.⁴

Select provisions of different countries which have mandated Data Localisation (DL) in certain instances has been compiled by various previous studies.⁵ As can be observed, these can be in varying extent, i.e. fully or partially.

There are various driving factors for such a localisation mandate, such as: securing citizen’s data, data privacy, data sovereignty, national security, and economic development of the country. Also, the advent of cloud computing raises important questions on accountability of service providers who store Indian users’ data outside of the country’s boundaries, leading to a conflict of jurisdiction in case of any dispute. The ineffectiveness of Mutual Legal Assistance Treaties (MLATs) in this realm aggravates such government fears.⁶

India has also begun walking on the path of mandating DL. The timeline below is indicative of the same.

¹<https://www.mckinsey.com/~media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/Digital%20globalization%20The%20new%20era%20of%20global%20flows/MGI-Digital-globalization-Full-report.ashx>, accessed on 15.06.2018

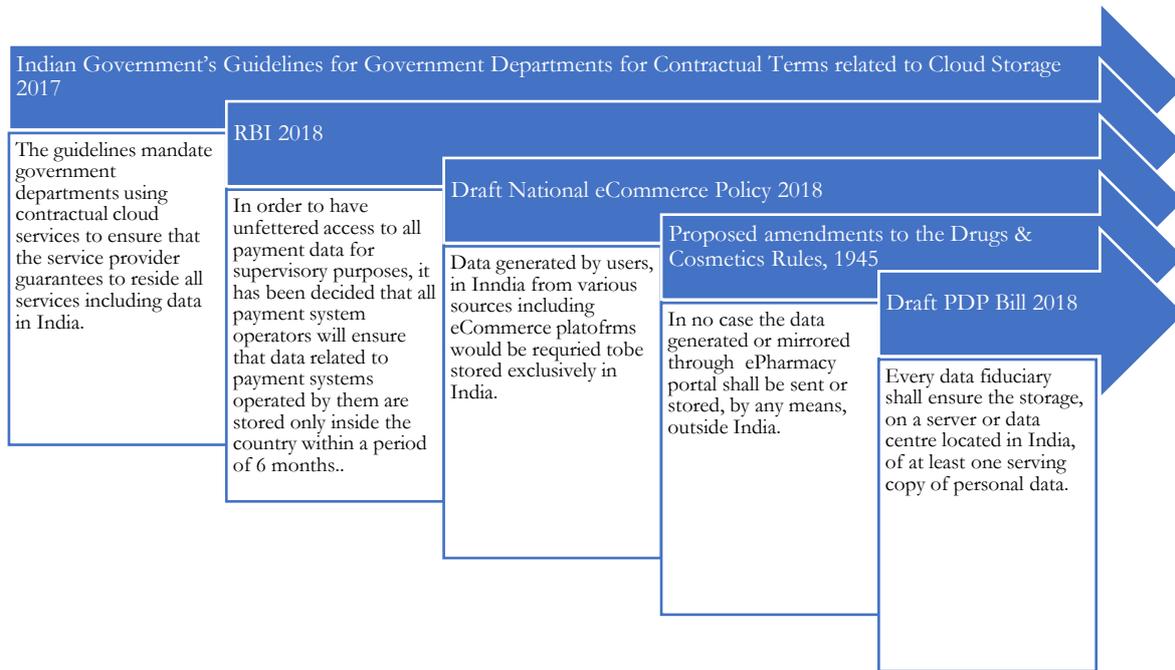
² <https://news.microsoft.com/cloudforgood/policy/briefing-papers/trusted-cloud/promoting-free-flow-data.html>, accessed on 21.05.2018

³ Data Localisation - Data localisation requires companies to store and process data on servers physically located within national borders.
http://www.meity.gov.in/writereaddata/files/white_paper_on_data_protection_in_india_171127_final_v2.pdf, accessed on 21.05.2018

⁴https://www.americanbar.org/content/dam/aba/publications/antitrust_magazine/anti_fall2017_cohen.authcheckdam.pdf, dated 2017, accessed on 21.05.2018

⁵http://www2.itif.org/2017-cross-border-data-flows.pdf?_ga=2.217287702.1243138733.1526903757-905067474.1526903757 dated 1.05.2017, accessed on 21.05.2018

⁶ https://meity.gov.in/writereaddata/files/Data_Protection_Committee_Report-comp.pdf



The Draft Personal Data Protection Bill 2018 (the bill), along with other developments such as National Data Sharing and Accessibility Policy (NDSAP) of India 2012⁷, National Security Council's (NSC) Paper on Data Localisation 2014⁸, Indian Government's Guidelines for Government Departments for Contractual Terms related to Cloud Storage 2017⁹, RBI notification 2018¹⁰, Draft eCommerce Policy, Proposed Amendments to the Drugs and Cosmetics Rules, 1945 etc., are all indicating India's bent towards mandating DL.

More recently, Mukesh Ambani, Chairman, Reliance Industries has also backed the government's mandate of DL, citing data as the new oil – "data is the new wealth. India's data must be controlled and owned by Indian people and not by corporates, especially global corporations. For India to succeed in this data-driven revolution, we will have to migrate the control and ownership of Indian data back to India in other words, Indian wealth back to every Indian".¹¹

However, as is visible from the timeline above, different legislations mandate varying extent / degrees of DL, for different types of data. These degrees can primarily be classified as below.

⁷ http://www.dst.gov.in/sites/default/files/nsdi_gazette_0.pdf dated 17.03.2012, accessed on 8.05.2018

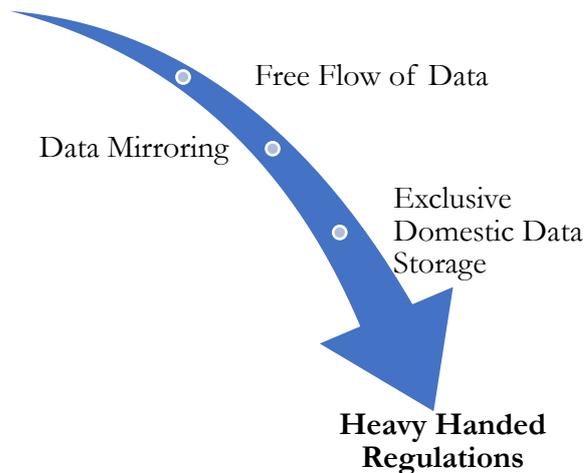
⁸ <https://www.thehindubusinessline.com/info-tech/National-Security-Council-proposes-3-pronged-plan-to-protect-Internet-users/article20727012.ece> dated 13.02.2014, accessed on 29.06.2018

⁹ http://meity.gov.in/writereaddata/files/Guidelines-Contractual_Terms.pdf dated 31.03.2017, accessed on 8.05.2018

¹⁰ <https://rbi.org.in/Scripts/NotificationUser.aspx?Id=11244&Mode=0> dated 6.04.2018, accessed on 8.05.2018

¹¹ <https://www.businesstoday.in/current/economy-politics/data-new-oil-mukesh-ambani-says-global-firms-should-not-control-india-data/story/311244.html>

**Light Touch
Regulations**



There are several arguments put forth by various stakeholder groups both in favour and against such a move. The Srikrishna Committee (the committee) report (the report) also recognises, ‘India would have to carefully balance possible enforcement benefits of localisation with the costs involved in mandating such a policy in law’¹².

There is therefore a need to assess the impacts of DL on different stakeholders, (particularly consumers), on various parameters and sub-indicators as mentioned later in this note.

1.2 Need for Regulatory Impact Assessment

There is a need to better understand costs and benefits of DL mandates, especially from developing countries’ perspective, taking into account their unique characteristics. The committee also noted that no evidence of a Cost-Benefit Analysis (CBA) was presented before it to determine if the costs of local data processing outweigh benefits to companies having access to burgeoning consumer database. Any regulation on cross-border data flow needs to consider interests of different stakeholder groups. These include, *inter alia*, consumers, government and industry players (data center operators, data processors, data users, start-ups and small and medium enterprises).

Regulatory Impact Assessment (RIA) is a process of systematically identifying and assessing direct and indirect impacts of regulatory proposals and existing regulations, using consistent analytical methods. It involves a participatory approach via public consultation to assess such impact, along with a determination of costs and benefits.

The adoption of RIA has also been recommended by various committees which have been highlighted in a CUTS paper¹³, a version of which was also presented to the Better Regulatory Advisory Group (BRAG) which was constituted by the Department of Industrial Policy and Promotion (DIPP) to look into the issues to improve regulatory processes for fast tracking of investments.¹⁴

Various studies have estimated the potential impact of DL on various stakeholders. However, a void may be observed regarding undertaking an in-depth analysis of impact on consumers, emanating from DL. This gap needs to be filled. Considering a top-down approach adopted by the above studies, a bottom-up approach¹⁵ needs to be adopted for taking a consumer perspective.

Understanding consumer impacts is critical to the success of public policies. Consumers not only benefit from competition, but also drive it, directly impacting on the competitiveness of firms and the productivity of a nation. However, consumers can also bear disproportionate risks and

¹² http://meity.gov.in/writereaddata/files/Data_Protection_Committee_Report.pdf

¹³ http://www.cuts-ccier.org/pdf/ViewPointPaper-Regulatory_Reforms_Needed_for_Ease_of_Doing_Business_in_India.pdf

¹⁴ <http://pib.nic.in/newsite/PrintRelease.aspx?relid=176264>

¹⁵ Such an approach highlights the perspective of those at the bottom of the pyramid, thereby inducing transparency, accountability and ownership, especially by opening up the process of developing and implementing social and economic policies to involvement by key stakeholders. http://www.cuts-international.org/pdf/CUTS_Strategic_Business_Plan-2014-2018.pdf

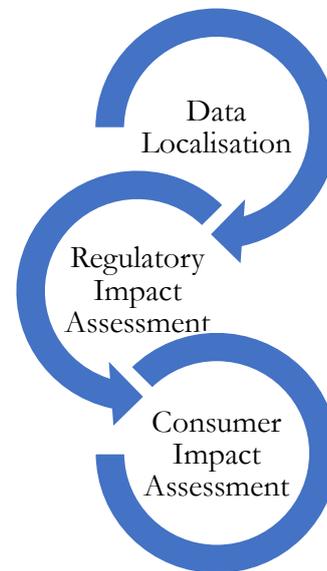
unintended consequences if expert evidence-based analysis is not provided in the early stages when policies are being developed.

1.3 CUTS Study

As a part of RIA, Consumer Impact Assessments (CIA) require an understanding of the nature of consumer demand in an industry, insight into the effect the policy may have on consumer information, and knowledge as to how consumers may respond to complex products, services and transactions that the policy may help promote. Such tools of impact assessments have been a recognised as important scientific tool by countries, such as Canada, which consider it as a useful tool in measuring and ensuring the success of proposed regulations from a consumer perspective.¹⁶

Being a consumer facing organisation (and considering the previously conducted above mentioned studies), Consumer Unity and Trust Society (CUTS) is undertaking an evidence-based RIA, i.e. a CBA, while keeping consumers at the centre, with the primary objective of ‘mapping the interests of consumers¹⁷ with respect to DL, to ensure consumer welfare¹⁸’.

From the point of view of DL, the key parameters which may impact consumers have been given below, along with a review of previously conducted studies surrounding them.



2. Parameters Affecting Consumers

The parameters given below, have been identified based on a literature review, supported by previous studies conducted by CUTS titled ‘Data Privacy and User Welfare in India: A User Perception Analysis¹⁹, ‘Consumer Perception Survey on Over The Top (OTT) Services in Rajasthan²⁰ and DigiPay Survey.

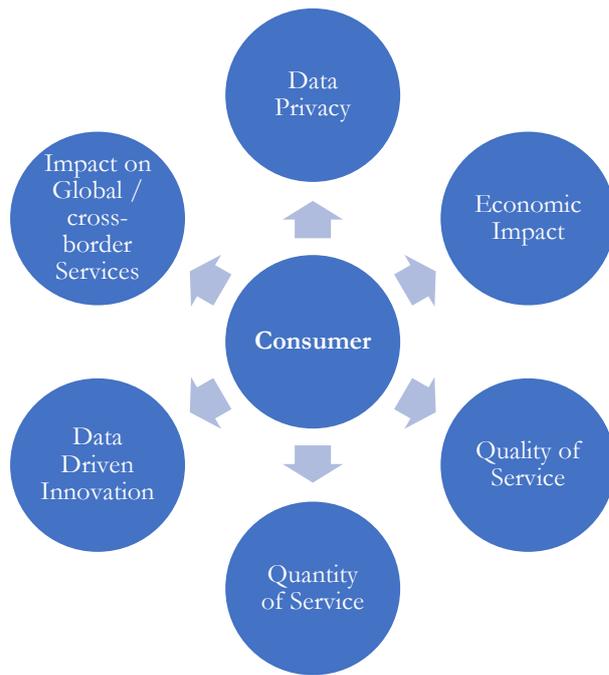
¹⁶ <http://www.ic.gc.ca/eic/site/oca-bc.nsf/eng/ca02565.html>

¹⁷ For the purpose of this study, consumers shall deem to mean end consumers, i.e. individual consumers availing digital technology and telecom services.

¹⁸ Consumer welfare refers to the individual benefits derived from the consumption of goods and services. In theory, individual welfare is defined by an individual's own assessment of his/her satisfaction, given prices and income. Exact measurement of consumer welfare therefore requires information about individual preferences. <https://stats.oecd.org/glossary/detail.asp?ID=3177>

¹⁹ <http://www.cuts-ccier.org/cdpp/>

²⁰ <http://www.cuts-ccier.org/OTT-Services/>



Select findings from the two studies have been listed below.

- Users perceive to have received various benefits by using digital technologies.
- Users are generally comfortable in sharing their personal data with service providers, but the same is not the case with sensitive personal data²¹.
- Consumers perceive their data being collected will be used for the purpose of providing them better and improved services, among other purposes.
- Reputation of service providers was biggest confidence building factor for consumers to share their data.
- Many consumers were wary of their

accounts being hacked, or misuse of their photos / videos, and also of financial fraud.

- More consumers were satisfied with the level of data security and online privacy in 2018 when compared with their satisfaction level as of 2013.
- Not many consumers had perceived to have experienced a violation of data privacy. However, of those who did, a sizeable number of them went on to report the same.
- Apart from the lack of awareness and or capacity regarding the available data protection tools, the perception about their ineffectiveness in protecting data, was a common reason for their non-usage. However, they were aware and using other tools such as apps settings and anti-viruses.
- One of the popular measures for consumers to protect their data, was to stop accessing a service for which data sharing is required.
- Most consumers felt that internet connectivity in the state needs significant improvement, which is a major deterrent towards better experience of OTT services.
- Substantial number of consumers felt that OTT service providers need to provide more information on grievance redressal. Absence of or incredulity of an effective grievance redressal mechanism is perceived to be one of the major factors in low adoption of OTT services, which gives OTT service providers a strong indication to work on this aspect in order to earn consumer trust.
- Business owners in Rajasthan perceived to be able to significantly increase their profitability and become more competitive through OTT services, while also improving productivity and efficiency in operations.
- Frequent interruptions or shutdown of internet have hindered the optimum utilisation of OTT services.

²¹ “Sensitive Personal Data” means personal data revealing, related to, or constituting, as may be applicable— (i) passwords; (ii) financial data; (iii) health data; (iv) official identifier; (v) sex life; (vi) sexual orientation; (vii) biometric data; (viii) genetic data; (ix) transgender status; (x) intersex status; (xi) caste or tribe; (xii) religious or political belief or affiliation; or (xiii) any other category of data specified by the Authority under section 22.

http://meity.gov.in/writereaddata/files/Personal_Data_Protection_Bill,2018.pdf

- Most consumers availing digital financial services were comfortable in transacting upto INR 2,000 through digital means. Few consumers were transacting for an amount greater than INR 5,000.

Given below are brief summaries of the literature review conducted on the above depicted select parameters.

2.1 Data Privacy

Right to privacy has been declared as a fundamental right, thereby making it necessary to protect personal data as an essential facet of informational privacy.²² The Srikrishna Committee has linked data privacy with DL by stating – “It has been argued by some scholars that requirements of storing data within territorial borders may be useful in boosting data security by safeguarding the privacy and security of personal information against non-governmental actors”²³.

The table below gives a literature review of previous studies conducted in measuring the impact of data breaches (thereby hurting data privacy) on consumers.

Methodology	Finding(s)
1. <u>Customer Loyalty, Trust and Data Breaches²⁴ - Gemalto</u>	
Global survey of consumers to assess how they perceive organizations that are the victim of data breaches.	<p>Breaches and the perceptions customers have of organizations’ data security standards have a significant impact on consumers’ willingness to continue engaging with a business.</p> <p>75% of consumers surveyed believe that companies do not take the protection and security of their data very seriously.</p> <p>31% of consumers have been a victim of a data breach.</p> <p>69% of consumers believe that companies are most responsible for protecting customer data.</p> <p>64% of consumers say they are unlikely to do business with a company where their financial or sensitive data was stolen.</p>
2. <u>How Privacy Flaws Affect Consumer Perception²⁵ - Sadia Afroz, Aylin Caliskan Islam, Jordan Santell, Aaron Chapin and Rachel Greenstadt, Department of Computer Science, Drexel University</u>	
Survey 600 participants on three well-known privacy breaches.	<p>The researchers investigated whether despite a lack of widespread Privacy Enhancing Technology (PET) usage, consumers are taking some basic security precautions when making purchasing decisions.</p> <p>Consumers aware of the privacy flaws trust a company less. They also show due to the endowment effect²⁶ the strongest hit from privacy breach is on potential customers.</p>
3. <u>The Consumer Trust Index²⁷ - SAI Global</u>	

²² http://meity.gov.in/writereaddata/files/Personal_Data_Protection_Bill,2018.pdf

²³ http://meity.gov.in/writereaddata/files/Data_Protection_Committee_Report.pdf

²⁴ <https://safenet.gemalto.com/resources/data-protection/customer-loyalty-data-breaches-infographic/>

²⁵ <https://www1.icsi.berkeley.edu/~sadia/papers/stast-privacy.pdf>

²⁶ Endowment effect is a bias which occurs when we overvalue something that we own, regardless of its objective market value. <https://www.behavioraleconomics.com/resources/mini-encyclopedia-of-be/endowment-effect/>

²⁷ https://m.comms.saiglobal.com/res/saiglob_mkt_prod1/35e4a9a13298fa9d606d7627afbfff6ab.pdf

Methodology	Finding(s)
3035 Global Consumer Interviews	43% of consumers indicated they would never return to a company if their private data had been breached. This percentage was highest in the Asia-Pacific region, at 49%, and as low as 38% in the Americas, but was consistently the biggest concern globally. Even where the data breach was less personal (as in, affecting others), 32% of consumers indicated they would never use the company in question.
4. <u>The Global State of Online Digital Trust - Frost & Sullivan</u>	
Consumer survey for preparing a Digital Trust Index in different sectors	86% consumers prefer security over convenience. There is a direct correlation between where consumers fall on the Digital Trust Index and their likelihood to spend online.
5. <u>Cost of a Data Breach</u> ²⁸ - IBM	
The report is based off findings across 2,200 IT, data protection, and compliance professionals from 477 companies that have experienced a data breach in the past 12 months.	This study found that the cost of data breaches has been steadily increasing over time — and has a hefty impact on a business’s bottom line. Factors that were found to affect the cost of a data breach include: Customer churn; Number of records lost or stolen; Time it takes to identify and contain a data breach; Cost management; & Management of post data breach costs. The report uses the Activity Base Costing (ABC) methodology ²⁹ to calculate the cost of a data breach. Human errors made up 27% of the root causes for data breaches.
6. <u>Internet Security Threat Report</u> ³⁰ - Symantec	
The Symantec Global Intelligence Network comprises more than 126.5 million attack sensors, recording thousands of threat events every second, and contains over five petabytes of security threat data.	India (133) was the second most affected country by targeted attacks after US (303) in 2017.

²⁸ <https://www.fairwarning.com/blog/ibm-released-its-2018-data-breach-study-and-financial-services-and-healthcare-organizations-are-taking-note-to-prevent-data-breaches/>

²⁹ Four process related activities are factored into the cost of a data breach: **#1 Detection and Escalation:** Activities that allow a company to detect and report the breach to appropriate personnel within a specified time period (e.g., forensic investigation activities, audit services, crisis team management, communications). **#2 Notification Costs:** Activities that allow the company to notify individuals who had data compromised in the breach (e.g., newsletters, telephone calls, emails). **#3 Post-Data Breach Response:** Processes that help affected individuals or customers communicate with the company and costs associated with redress and reparation with data subject regulators (e.g., legal expenditures, credit reporting, issuing new accounts). **#4 Lost Business Cost:** Activities associated with the cost of lost business, including customer churn, business disruption, and system downtime (e.g., cost of business disruption, cost of lost customers, reputational loss).

³⁰ http://images.mktgassets.symantec.com/Web/Symantec/%7B3a70beb8-c55d-4516-98ed-1d0818a42661%7D_ISTR23_Main-FINAL-APR10.pdf?aid=elq_

Methodology	Finding(s)
This network also monitors the threat activities for over 175 million endpoints located in 157 countries and territories.	
7. <u>Data Threat Report: India Edition³¹ - Thales</u>	
Global Enterprise Survey	<p>A striking 93% of Indian respondents' plan on increasing IT security spending. However, 52% of Indian respondents reported a successful breach last year, also way above the global average (36%).</p> <p>The top drivers of IT security spending in India were reputation and brand protection (52%), increased use of cloud is next (47%), and avoidance of financial penalties at 32%, i.e. Indian organizations are apparently spending their valuable IT security funds in the wrong places.</p> <p>Barriers to adopting / implementing data IT security were also identified.</p> <p>Indian organizations are more inclined to pursue multi-cloud strategies, doing so can pose challenges in terms of IT security.</p>
8. <u>The World in Data Breaches³² - Varonis</u>	
Breach Level Index ³³	India was considered as a major centre of data breaches, in terms of total data records lost or stolen.
9. <u>Research and analysis to quantify the benefits arising from personal data rights under the GDPR³⁴ - London Economics</u>	
<p>Consumer Survey in 2017</p> <p>A choice experiment³⁵ was undertaken.</p> <p>Time cost analysis was undertaken to calculate the cost on consumers from</p>	<p>Consumers prefer having control over the information provided online. Privacy is a concern for consumers.</p> <p>Questions on average importance of different factors in the consumer's purchasing decision and drivers of consumer confidence were also asked, such as: reputation of the service provider, type of data needed to access the service, past experience, rights to erasure and portability etc.</p> <p>Benefits from features of the GDPR on select parameters were also asked to professionals.</p>

³¹ <http://go.thalessecurity.com/rs/480-LWA-970/images/2018-Thales-Data-Threat-Report-India-Edition-ar.pdf>

³² <https://www.varonis.com/blog/the-world-in-data-breaches/>

³³ <https://breachlevelindex.com/>

³⁴ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/635701/PersonalDataRights_LE_-_for_Data_Protection_Bill_1_.pdf

³⁵ In a choice experiment, subjects are presented with a set of binary choices between multi-attribute scenarios, in which the attributes are varied so as to force subjects to make trade-offs. A well-designed choice experiment can provide a more accurate estimate of consumer value than survey evidence because it is putting the subjects into real choice situations, where attribute combinations can be compared directly and preferences are revealed through the observed choices.

Methodology	Finding(s)
harmful use of data, i.e. marketing calls.	

Considering the importance and value of data privacy for consumers, the study may deep dive into the various factors strengthening or weakening the same, with respect to DL. Consumer harm arising out of data breaches, may also be estimated.

2.2 Economic Impact

Methodology	Finding(s)
1. <u>Tracing the Economic Impact of regulations on the Free Flow of Data and Data Localization</u> ³⁶ - Matthias Bauer, Martina F. Ferracane and Erik van der Marel	
A regulatory data index developed using the input-output model is used as the independent variable to study the Total Factor Productivity and a price index based on value added calculations for a set of countries using standard parametric estimation techniques. The law proposals are quantified and an index developed which is then used to calculate TFP losses in the counterfactual situation where countries implement the proposed regulatory laws on data.	Communication services sectors show comparatively large productivity losses due to their high dependency on data inputs covered by data regulations. Data-intensive business and financial services also show relatively high losses in productivity. As concerns economic output, the production of data intensive manufacturing and services sectors shrinks in all countries due to regulations on the free flow of data. Losses are notably taking place in the services sectors. Tight regulations on the free flow of data tend to cause an economy's production structure to shift (back) toward less innovative and relatively volatile sectors.
2. <u>How Does the RBI's Localisation Directive Impact Payment Firms</u> ³⁷ - VC Circle	
	Companies such as WhatsApp Pay India and Google Pay will incur costs in India by storing user data on the cloud as expenses from teams of engineers and scientists to process the data collected.

Being a vast developing country, having a large and demographically varying population, the impact of any increase in prices of digital services, may hamper the uptake of digital technologies / services. An assessment of the potential impact of a price rise becomes important for this study, which may also result in diminishing consumer demand.

2.3 Quality of Service

Methodology	Finding(s)
1. <u>The State of Consumer Trust</u> ³⁸ - Jebbit	
Surveyed more than 1,000 United States adults to rate, on a scale of 1 to 10, how much they trusted each brand listed in the survey with their personal	Consumers aren't opposed to companies collecting information on them, but that information has to be used in beneficial

³⁶ https://www.cigionline.org/sites/default/files/gcig_no30web_2.pdf

³⁷ <https://techcircle.vccircle.com/2018/10/16/explainer-how-does-the-rbi-s-data-localisation-directive-impact-payments-firms>

³⁸ <https://cdn2.hubspot.net/hubfs/303852/Consumer%20Data%20Trust%20Index.pdf>

<p>data in exchange for more relevant offers and services. Participants were sourced through Facebook, Twitter, Instagram, and Amazon’s Mechanical Turk.</p>	<p>and safe ways in order for consumers to trust the company with it.</p> <p>Even the best performing brands have room to improve their “data-trustworthiness” amongst consumers.</p>
<p>2. Society at a Glance³⁹ - OECD</p>	
<p>The trust measure aggregates the top five categories for the ESS and the top two categories for the ISSP to give a percentage of people expressing high levels of trust.</p> <p>Data on institutional confidence is a composite indicator on corruption and a composite indicator on national institutions, created by Gallup.</p>	<p>Richer countries trust more.</p> <p>Trust is higher when income is more equally distributed.</p>

2.4 Uptake & Consumption of Services

The impact of data breaches on the uptake and availing services from specific providers (signifying the reduced demand) has already been mapped in the literature cited above.

Alternatively, a possible shift of consumers to lower price plans / service offerings from various service providers could be mapped, due to an increase in their prices post DL.

2.5 Innovation

Our survey⁴⁰ revealed that consumers perceived one of the reasons of data collection by service providers, to be for innovation, i.e. ‘providing better and improved services’. DL is believed to have a throttling effect on innovation.⁴¹ A few relevant studies in this regard, have been collated below.

Methodology	Finding(s)
<p>1. <u>Cross-Border Data Flows, Digital Innovation, and Economic Growth 2016⁴² - Cisco Systems</u></p>	
<p>Developed an index & graph of cross-border data traffic & national innovation, based on the Global Innovation Index (GII).</p>	<p>Those countries and companies that have not positioned themselves in an environment that fosters open Internet practices may find innovation and economic growth hampered.</p>
<p>2. <u>The Rise of Digital Authoritarianism 2018⁴³ - Freedom House</u></p>	
<p>Created a year on year Freedom on The Net (FOTN) Score of</p>	<p>Internet freedom declined in 26 countries, while only 19 made gains, most of the gains minor.</p> <p>India was classified as having a ‘partly free’ internet.</p>

³⁹ https://www.oecd-ilibrary.org/docserver/soc_glance-2011-en.pdf?expires=1546505352&id=id&accname=guest&checksum=326BC0D6FA90F4E156F60295DAFC5D36

⁴⁰ <http://www.cuts-ccier.org/cdpp/>

⁴¹ <https://www.ikigailaw.com/mapping-comments-to-the-srikrishna-committee-on-data-protection-part2/#acceptLicense>

⁴² http://www3.weforum.org/docs/GITR2016/WEF_GITR_Chapter1.2_2016.pdf

⁴³ https://freedomhouse.org/sites/default/files/FOTN_2018_Final%20Booklet_11_1_2018.pdf

various countries based on laws affecting certain parameters.

2.6 Sector Specific Impacts

A DL mandate is set impact multiple facets of the economy, which could possibly have a detrimental trickle-down effect on consumers. Given below are a few sector specific impacts of DL.

Methodology	Finding(s)
1. <u>Success Through Stewardship: Best Practice in Cross-Border Data Flows 2015⁴⁴ - Information Integrity Solutions</u>	
Case studies, which were provided by NCAPEC on behalf of the listed companies and unaltered by Information Integrity Solutions Pty Ltd.	<u>Cross-border eCommerce</u> : Small & Medium Enterprises (SMEs) leverage eBay’s online marketplace and payment platform. In 2012 this enabled US\$175 billion worth of commerce. This will become even more apparent as trade in digital goods and services increases.
	<u>Financial Fraud detection</u> : Fraud patterns are not limited by national boundaries. Therefore, to build effective fraud models and gain the necessary insights for fraud prevention, it is necessary to collect and share payment data from across the globe. Effective anti-fraud tools that depend on the free flow of data are essential to build and strengthen consumers’ trust in the digital economy, develop commerce and drive economic growth.
	<u>Financial Services</u> : consumers need to be able to transact into and out of a country. Cross-border issues therefore affect financial service providers deeply, in particular having to deal with differences between jurisdictions in data handling. Cross-border consistency in data handling requirements will simplify financial trade and increase the opportunity to innovate.
2. <u>Cross-Border eCommerce Shopper Survey 2017⁴⁵ - International Post Corporation</u>	
Consumer Survey	<p>Cross-border eCommerce: Consumer wanted end to end (E2E) tracking.</p> <p>Consumers received direct mail from eRetailers.</p> <p>Consumers want to know the full delivery cost upfront.</p> <p>Digital modes of payment were preferred over Cash on Delivery (CoD).</p> <p>Indians usually purchase from US, China & Australia.</p> <p>Consumers are satisfied with the overall online shopping experience.</p>
3. <u>Migration and Remittances - World Bank Group</u>	
	Harmonized regulation and adoption of innovative technologies could lower remittance costs by reducing intermediaries, enabling standardized and verifiable transactions, and smoothening AML/CFT regulatory processes.
4. <u>Global Policy: Digital Debates⁴⁶ - Observer Research Foundation</u>	

⁴⁴https://static1.squarespace.com/static/5746cdb3f699bb4f603243c8/t/575f639a01dbaecd2ba40cd0/1465869227869/IIS_Success_through_stewardship_Best_practice_in_cross_border_data_flows.pdf

⁴⁵ <https://www.emota.eu/media/1207/ipc-cross-border-e-commerce-shopper-survey2017-2.pdf>

⁴⁶ https://www.orfonline.org/wp-content/uploads/2018/10/Digital-Debates-Journal_v13.pdf

	<p>According to analysis in an IAPP article and citing the India Brand Equity Foundation, online retail in India is ‘expected to grow more than 1200 percent to USD 200 billion by 2026.’ The article goes on to note that at least US\$9.1 billion in 2016, a figure expected to increase over 85 percent year-on-year in 2017, is driven by cross-border data flows. What happens to these transactions under the proposed privacy law and data localisation provision? How can the transaction be processed?</p>
<p>5. <u>Comments on the Indian Ministry of Electronics and Information Technology’s Draft Data Protection Bill 2018</u>⁴⁷ - Centre for Information Policy Leadership</p>	
	<p>In many cases, it is not possible to process all data locally and maintain the same quality of service as could otherwise be achieved (for example, round-the clock, follow-the-sun customer service).</p> <p>Data localisation is a costly effort that impacts on an organisation’s ability to operate with consistency and to invest in focused data security measures. The more fragmented the location of the data, the greater the corresponding risks to the data being compromised, given the additional and unnecessary “touch points”</p> <p>Data localisation obligations may further weaken security by reducing the probability of network redundancy whereas a distributed network is crucial for securing data, making it possible for data to be restored in case of data loss due to natural disasters or cyberattacks.</p>
<p>6. <u>Trade and cross-border data flows</u>⁴⁸ - OECD</p>	
<p>Survey of service providers in different industries.</p> <p>Survey of individuals not ordering online because of payment security or privacy concerns.</p>	<p>The extent to which firms can identify and split personal from non-personal data was also identified as an issue for firms. Respondents to the business questionnaire overwhelmingly reported that separating data was likely to be costly or very costly, a response consistent across most sectors. Where firms are unable to separate data, a measure on cross-border transfers of personal or personally identifiable data might in effect become a measure affecting all types of data.</p> <p>“privacy is a critical factor that significantly influences online trust. Indeed, privacy and security concerns play a key role in determining whether consumers order online or not; there is thus also a strong business case for privacy protection. But with the growing collection of personal data, the risks to individual privacy increase, which is why consumers are increasingly asking for assurances that their data is being handled appropriately. Businesses increasingly see their ability to meet these demands as part of their competitive offering.</p>

An appropriate methodology would need to be devised to measure the impact of DL on consumer, which may employ one or more methodologies mentioned above, or a combination thereof.

3. Methodology for Gauging Impact of DL

⁴⁷https://www.informationpolicycentre.com/uploads/5/7/1/0/57104281/cipl_comments_on_the_indian_ministry_of_electronics_and_information_technology%E2%80%99s_draft_data_protection_bill_2018.pdf

⁴⁸[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=TAD/TC/WP\(2018\)19/FINAL&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=TAD/TC/WP(2018)19/FINAL&docLanguage=En)

3.1 Methodologies employed by previous consumer centric studies

Various previous consumer centric studies have been conducted, from which a suitable methodology may be adopted. Few relevant ones have been listed below.

Methodology
1. <u>The Global Risks Report 2019⁴⁹ - World Economic Forum</u>
<p>Survey respondents were asked to assess the likelihood of the individual global risk on a scale of 1 to 5, 1 representing a risk that is very unlikely to happen and 5 a risk that is very likely to occur. They also assess the impact on each global risk on a scale of 1 to 5.</p> <p>Survey respondents were asked to select the three trends that are the most important in shaping global development in the next 10 years. For each of the three trends identified, respondents were asked to select the risks that are most strongly driven by those trends.</p> <p>Survey respondents were asked to select up to six pairs of global risks they believe to be most interconnected.</p> <p>A simple average for both likelihood and impact for each of the 30 global risks was calculated on this basis.</p>
2. <u>Monetising Human Impacts⁵⁰ - Nottingham Trent University</u>
<p>In general, there are three broad approaches for estimating the economic values attached to non-marketed impacts of assets, goods or services: 1. using Revealed Preference (RP) Techniques; 2. using Stated Preference (SP) Techniques; or 3. using a Benefits Transfer (BT) approach.</p> <p>The novelty of the CLeMM approach is the use of a budget of £100 as the measurement unit for monetising human impact. This sum was chosen because it is an easy figure for people 70 (customers) to visualise allowing their perceptions to lead the evaluation.</p>
3. <u>The impact of customer service on customer lifetime value 2013⁵¹ - Zen Desk</u>
<p>Participants ranked customer service as the #1 factor impacting vendor trust.</p>
4. <u>Payments Pulse Survey: Consumer Edition⁵² - Payments Canada</u>
<p>Confidence on storing payment information with different types of service providers (eCommerce platforms, digital payments service providers etc.) was measured on aspects of privacy.</p> <p>Online storage of money, i.e. in eWallets was also asked, along with their willingness to move to electronic modes of fund transfer, instead of traditional methods.</p> <p>Perceptions towards inconvenient payment checkouts and visibility of transactions were also noted.</p>
5. <u>Behavioural Study on the Transparency of Online Platforms⁵³ - European Commission</u>
<p>The study comprised (i) a literature review, (ii) a qualitative ‘online think aloud’ study combining observed online task completion and in-depth interviews with 10 participants from</p>

⁴⁹ http://www3.weforum.org/docs/WEF_Global_Risks_Report_2019.pdf

⁵⁰ http://eprints.lincoln.ac.uk/29309/1/29309%20PubSub9286_Sarhan.pdf

⁵¹ <https://www.zendesk.com/resources/customer-service-and-lifetime-customer-value/>

⁵² <https://www.slideshare.net/PayCanada/payments-pulse-survey-consumer-edition-2018-107473121>

⁵³ https://ec.europa.eu/info/sites/info/files/transparency_in_platforms_-_executive-summary_en.pdf

Methodology
<p>each of four European countries (Germany, Poland, Spain and UK), and (iii) three online discrete choice experiments testing the effects of transparency in online search information, contractual identity and user reviews and ratings.</p> <p>The experiments involved 4802 respondents in the four countries cited above. Pre and post experimental questionnaires were administered eliciting respondent's profiles, online experiences and opinions about trust and confidence.</p>
<p>6. <u>The Value of Our Digital Identity</u>⁵⁴ - Boston Consulting Group</p>
<p>Sectors are at different stages of generating value from personal data. The volume – and variety – of data is expanding.</p> <p>Personal data uses concern most individuals, few are fully aware and in control of them.</p> <p>User controls increase consumers' willingness to share data. Consumers want to share their data – if the benefits and the privacy controls are right.</p> <p>Two-thirds of the potential value generation – or €440 billion in 2020 alone – is at risk if stakeholders fail to establish a trusted flow of personal data.</p> <p>A framework for analysing acceptance of digital identity applications. While the applications vary, a common framework can be used to evaluate every use case. This framework focuses on the two key dimensions in how digital identity is leveraged: the method of data collection and the manner in which it is used. Consumers consider these same two dimensions when viewing the trade-off between the value and cost of sharing information</p>
<p>7. <u>Market Monitoring</u>⁵⁵ - European Commission</p>
<p>Market Performance Index (MPI) is a composite indicator that covers 5 key aspects of consumer experience</p> <ol style="list-style-type: none"> 1. comparability – how easy or difficult is it to compare goods or services? 2. trust – do consumers trust retailers/suppliers to comply with consumer protection rules? 3. expectations – does the market live up to consumer expectations? 4. choice – are consumers happy with the number of retailers/suppliers? 5. overall detriment – proportion of consumers who have had problems in the market & how harmful the problems are.
<p>8. <u>Consumer market study on online market segmentation through personalised pricing/offers in the European Union</u>⁵⁶ - Ipsos, London Economics & Deloitte</p>
<p>The stakeholder consultation consisted of dedicated surveys addressed to:</p> <ul style="list-style-type: none"> • Consumer Protection authorities (CPAs); • Data Protection authorities (DPAs); • Consumer Organisations;

⁵⁴ <https://2zn23x1nwz494slw48aylw-wpengine.netdna-ssl.com/wp-content/uploads/2017/06/The-Value-of-Our-Digital-Identity.pdf>

⁵⁵ https://ec.europa.eu/info/policies/consumers/consumer-protection/evidence-based-consumer-policy/market-monitoring_en#rating-consumer-experience

⁵⁶ https://ec.europa.eu/info/sites/info/files/aid_development_cooperation_fundamental_rights/aid_and_development_by_topic/documents/synthesis_report_online_personalisation_study_final_0.pdf

Methodology

- National Experts; and
- Business operators.

It relied chiefly on online questionnaires that were distributed to the stakeholder groups across each of the 30 countries covered by the study.

3.2 Proposed Methodology for our Study

In order to check the impact of DL, primarily on consumers, among other stakeholders, the following methodology (desk research and primary stakeholder interaction) may be deployed for the below mentioned stakeholders.

3.2.1 Step 1: Subject Experts

Subject Experts⁵⁷ may be contacted through Focus Group Discussions (FGDs) and / or Key Informant Interviews (KIIs), to take their inputs on the impact⁵⁸ of DL on different parameters⁵⁹ and sub-indicators, such as:

- Quality of service⁶⁰
- Innovation⁶¹
- Data Security, particularly of financial data (i.e. Sensitive Personal Data (SPD))⁶²
- Data Privacy⁶³
- Law Enforcement Access (LEA) to Data
- Impact on risks⁶⁴
- Impact on national security

An Expert Perception⁶⁵ Model (EPM) may be built through the above interaction.

3.2.2 Step 2: Service Providers of Popular Digital Technology Enabled Services

The impact of DL on Businesses would also be gathered on similar lines.

- Envisaged increased expenditure or possibility of maintaining current quality⁶⁶

⁵⁷ These may include: Data Centre Operators, Relevant Academicians, Consultants, Sector Experts, Policy Makers, Civil Society Representatives etc.

⁵⁸ Current levels and new levels on the given parameters will be mapped on a 10-point Likert scale.

⁵⁹ Literature Review of these parameters would be conducted with respect to India's global position.

⁶⁰ Based on aspects of reliability of service, appearances / user interface of services, responsiveness to consumer complaints / queries (Facebook inappropriate post reporting, Amazon international number for redressal etc.), consumer experience in ease of accessing services (cross-border eCommerce etc.), performance efficiency of the service, rate of delivery of updated versions, testability of errors (particularly for financial frauds), user engagement (uploading personal videos / photos), reduced reliance on Optic Fibre Cables (OFCs etc.

⁶¹ India's ranking in the global innovation index, or change in opportunity for data driven innovation for consumer welfare, such as fraud detection may be focussed. Cisco's report may be referred in this regard.

http://www3.weforum.org/docs/GITR2016/WEF_GITR_Chapter1.2_2016.pdf

⁶² India's Data Security Score / Rank based on different reports, on indicators budgets for data security, skills / capacity for protecting data, vulnerabilities due to infrastructure / regulatory issues, standards adopted for data security etc.

⁶³ Enhanced risks of state surveillance, freedom of expression etc. and its impact on innovation as showcased by a Cisco report (http://www3.weforum.org/docs/GITR2016/WEF_GITR_Chapter1.2_2016.pdf) and Freedom House report (https://freedomhouse.org/sites/default/files/FOTN_2018_Final%20Booklet_11_1_2018.pdf), preventing foreign surveillance

⁶⁴ Indicators of risks as identified in our survey may be asked from a current and post perspective

⁶⁵ A judgement model may also be adopted if necessary, based on different models – Classic model or Bayesian model etc.

⁶⁶ Maintaining the same level of quality based on the indicators mentioned earlier.

- Reduced budgets or opportunity for innovation⁶⁷
- Enhanced vulnerability to data breaches and cost of a data breach⁶⁸
- Reduced data privacy
- Enhanced LEA to Data
- Enhanced risks due to DL

The change in pre-post scenario on the above parameters and sub-indicators, as noted from subject experts and service providers would be averaged to map the percentage change in these parameters and sub-indicators.

3.2.3 Step 3: Consumer⁶⁹ Perspective⁷⁰

Consumers would be reached out next, to gauge their perception, uptake and usage, experience, preferences etc., with respect to digital technology driven services and service providers. The following information would be sought from them:

- Weights⁷¹ will be assigned to different parameters and indicators mentioned above, to map current consumer preferences. Perceived risks may also be asked here.
- Map current usage of different services⁷², and trust on service providers, based on the preferences.
- Possible change in trust on select⁷³ service providers, and corresponding usage of their services based on EPM⁷⁴ and risks.
- Willingness to Pay (WtP) and / or Willingness to Accept (WtA) for coming back to the current preference levels, usage of different services and trust on service providers.
- Special emphasis on Digital Financial Services⁷⁵, and differentiation in reaction to change in DTI for currently using and not using services to check endowment effect⁷⁶

Impact of DL on Consumers would be mapped by employing tools such as CLeMM model, WtP / WtA, Data Trust Index (DTI)⁷⁷ and studying any Endowment Effects.

Appropriate case stories of sector specific impacts may also be prepared, subject to availability to time and resources.

⁶⁷ Data driven innovation may be focussed upon here.

⁶⁸ As showcased in a study by IBM <https://www.fairwarning.com/blog/ibm-released-its-2018-data-breach-study-and-financial-services-and-healthcare-organizations-are-taking-note-to-prevent-data-breaches/>

⁶⁹ We may have different questionnaires for different consumers, based on geographic location

⁷⁰ Reach out to consumers through a survey

⁷¹ CLeMM model, based on a budget allocation of INR 100

⁷² Particularly digital financial services

⁷³ Digital financial service providers, and popular service providers as revealed in our previous surveys

⁷⁴ Likelihood for change in occurrence / comfort

⁷⁵ Including eCommerce and questions may be based on the Payments Pulse Survey

(<https://www.slideshare.net/PayCanada/payments-pulse-survey-consumer-edition-2018-107473121>) on parameters of confidence and trust factors, likelihood / willingness of storing money online or transacting online etc.

⁷⁶ Will be specifically useful with respect to new / inexperienced internet users who may begin using different services. Studies like How privacy flaws affect consumer perception by Drexel University (<https://www1.icsi.berkeley.edu/~sadia/papers/stast-privacy.pdf>) have studied this.

⁷⁷ Such as those prepared by SAI Global (for establishing relationship between trust and data breach), Frost and Sullivan (for checking relationship between trust and benefits received by digital technologies) and Jebbit (data being used in beneficial and safe ways)

3.2.4 Step 4: Economic Analysis for Quantification of Impact

At a macro level, we could check the uptake and usage of various popular digital technology enabled services in the past few years. A trendline may be prepared based on it, for its envisaged uptake and usage at the same rate.

The change in consumer DTI and usage may be mapped against it and the net reduction is the loss of consumer welfare⁷⁸.

Also, the per unit WtP to same preference level, may be multiplied with the future usage and uptake to showcase the monetary loss to consumers.

3.3 Timeline of the Study

The project was initiated from the beginning of December 2018, and is expected to be completed by the end of November 2019, as per the timeline given below.

Particulars	Months											
	1	2	3	4	5	6	7	8	9	10	11	12
Literature Review												
Preparation of an Operation Strategy Note & Terms of Reference of the Study												
Interaction with Subject Experts & Service Providers through KIIs and FGDs												
Analysis of the data collected from Experts & Service Providers												
Preparation of the Consumer Survey – Gap Analysis, Logic Framework Analysis												
Consumer Survey												
Analysis of the data collected from Consumers												
Preparation of the Research Report												
Dissemination Event												

The proposed activities for the study have also been indicated in the table above.

⁷⁸ Benefits received from different digital technology enabled services could be mapped as well