Consumer Impact Assessment of Data Localisation

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Data Localisation (DL), if implemented without adequate preparation and accountability measures, will adversely impact availability and innovation in data driven services, enhance privacy violation and data breach risks, and make censorship easier.

This could lower satisfaction derived and enhance risks perceived by consumers from data driven services, which may reduce their usage of such services. Even if DL contributes to economic development, such potential benefits may not outweigh corresponding costs, thus adversely impacting consumer welfare.

The Personal Data Protection Bill must focus on enhancing user privacy, protecting data, combating data breaches, and avoiding unjustified data access to third parties. Clear standards needed to define scope of sensitive and critical personal data. Need to prevent abuse of discretion in allowing outside India: processing of sensitive personal data, and transfer of critical personal data. Accountability required for data breaches. State exemptions must be pruned and its requests for data access must be subject to judicial review. Separate policy to incentivise processing of data in India needed.

KEY FINDINGS & RECOMMENDATIONS OF THE STUDY
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PPD BILL, OBJECTIVE, METHODOLOGY, LIMITATIONS & ASSUMPTIONS

FINDINGS FROM EXPERTS’ INTERACTIONS (40 INTENSIVE INTERACTIONS)

FINDINGS FROM CONSUMER SURVEYS ON E-COMMERCE, SOCIAL MEDIA AND COMMUNICATION SERVICES (1300 RESPONDENTS)

WAY FORWARD AND RECOMMENDATIONS
The Personal Data Protection Bill (PDPB), 2019

Key provisions regarding Cross Border Data Flow (CBDF)

- No restriction on storage or processing of non-sensitive and non-critical personal data outside India.

- Sensitive personal data (SPD) needs to be stored in India. It can be processed outside India with explicit consent of data principal and approval of Central Government (CG) or Data Protection Authority (DPA), as the case may be, on fulfilment of certain conditions.

- Critical personal data (CPD) needs to be stored and processed in India. It can be transferred outside only on approval of Central Government, on fulfilment of certain conditions.

Implications

- A significant portion of personal data (sensitive and critical) needs to be stored and processed in India, thus resulting in DL.

- Transfer of such data outside India is contingent on government discretion, and not merely on consumer choice.

*The Bill provides different categories of sensitive personal data, and authorises the government to specify additional categories. The government is also authorised to notify critical personal data. The Bill also defines processing to include collection, recording, organisation, structuring, adaptation, alternation, use, alignment, indexing, storage etc.*
Key changes to DL provisions in PDPB 18 by PDPB 19

Key changes

- Draft PDPB 18 required storage of a copy all PD in India. In PDPB 19, non-sensitive and non-critical PD may not be stored in India. It may however be difficult to separately store different types of PDs.
- PDPB 19 expands scope of PD, to include online and offline features, & inference drawn for profiling, thus potentially expanding the scope of SPD and CPD as well.
- PDPB 19 authorises CG to specify SPD, in consultation with DPA and sector regulator. This power was only with DPA previously. Thus, role of CG appears to have been enhanced.
- Earlier, CG was authorised to notify categories of PD as CPD. As per PDPB 19, CG can notify any PD as CPD. It can also prevent transfer of CDP outside India if it thinks such transfer prejudicially affects strategic interest of state. The scope of strategic interest is not clear, and the discretion with CG appears to have been enhanced.

Key implications

- The role and discretion of CG seems to have been enhanced.
- Several provisions remain ambiguous and lack clarity.
- Several elements of DL in draft PDPB 18 are retained by PDPB 19.
Several studies have estimated potential impact of DL on various stakeholders. However, a void has been observed in capturing and presenting the impact of DL on consumers.

The ultimate impact of policies in digital economy, including DL, is likely to be felt by consumers. It is thus important to understand their perspectives, and prevent adverse impact on them.

The primary objective of this study was to **gauge the impact of Data Localisation on consumers**, with respect to their usage of select data driven services (e-commerce, social media and communication). This was be ascertained by answering the following research questions:

- What is the likely impact of DL on consumer facing personal indicators (like privacy, freedom of speech, availability of service) and impersonal indicators (like LEAs access to data, economic development, competition etc.)?
- What is consumer perceptions towards these indicators?
- Are there any identifiable trends in consumers perceptions towards these indicators and their usage of data driven services – social media, communication and e-commerce?
Mixed Methods Research Methodology

• A **Project Advisory Committee** comprising **Prof V Sridhar**, IIIT-B, **Mr Mahesh Uppal**, Telecom Consultant, was formed to guide the research team, finalise research tools, and review the outputs.

• **Desk Research**: Extensive literature review was undertaken to gather information on the **baseline scenario**, **identify gaps & design research strategy**. Details available [here](#).

• **Experts Interactions**: Intensive interactions with experts and industry players took place in online and **in-person settings** to gather their opinion on possible impact of **DL** on consumer facing parameters. A structured **questionnaire** was prepared, inspired from the **Experts Judgement Model**.

• **Consumer Survey**: Around **1,300 users** of data-driven services were surveyed to gather evidence on use of such services and possible parameters influencing usage. Questionnaire items were informed from the **Extended Technology Acceptance Model**. The idea was to estimate change in usage of data driven services owing to change in parameters influencing usage, as a result of **DL**.
Limitations & Assumptions

• The scope of DL in the study is limited to as envisaged under the draft PDPB 18, as described in the questionnaire.

• Experts’ opinions on likely changes to different indicators on a scale of -5 to +5 were considered to ascertain the impact of DL on consumer facing parameters.

• Experts were asked to provide their opinions about impact of DL considering medium term timeframe i.e. 5 years post DL.

• Experts were asked to remain sector agnostic while providing their opinions. However, they were asked to take into account that companies deal with a mix of different types of data (non-personal, personal, sensitive), and thus may be differently impacted by DL.

• Responses were gathered only from consumers of data driven services, and not from those not availing such services.

• Consumers’ responses on perception and satisfaction levels on select consumer facing indicators were considered to ascertain the current status with respect to such indicators.

• Consumers were not asked to respond to likely changes in perception and satisfaction levels as a result of DL.

• It was assumed that consumers’ satisfaction and perception levels about indicators will change in accordance with experts’ options.
### Findings from the Experts Interactions (40 Respondents)

<table>
<thead>
<tr>
<th>Government</th>
<th>Service Providers/Industry Experts</th>
<th>Legal Experts</th>
<th>Civil Society Organisations</th>
<th>Academia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr Arul Kumaran, Scientist – D, Ministry of Electronics and Information Technology</td>
<td>Mr Deepak Maheshwari, Symantec</td>
<td>Mr Nikhil Narendran, Partner, Trilegal</td>
<td>Mr Srikara Prasad, Policy Analyst, Dvara Research</td>
<td>Mr Rishab Bailey, Fellow, National Institute of Public Finance and Policy</td>
</tr>
<tr>
<td>Mr Vimal Wakhlu, Former Chairman Director, Telecommunications Consultants India Limited</td>
<td>Mr Srinivas, Assistant Vice President – Legal, Zest Money</td>
<td>Mr Alok Prasanna Kumar, Senior Resident Fellow, Vidhi Centre for Legal Policy</td>
<td>Ms Aditi Chaturvedi, Counsel, Sflc.in</td>
<td>Mr Rohan Seth, Program Manager, The Takshashila Institution</td>
</tr>
<tr>
<td>Mr Vijay Chugh, Ex Chief General Manager, Reserve Bank of India (RBI)</td>
<td>Ms Amrita Choudhury, Director, CCAOI</td>
<td>Mr Lalit Panda, Research Fellow, Vidhi Centre for Legal Policy</td>
<td>Mr Hemant Upadhyay, Advisor, VOICE</td>
<td>Ms Anushka Bhilwar, Research Associate Indian Institute of Public Administration (IIPA)</td>
</tr>
<tr>
<td>Mr S Srinivasan, former Secretary to Government of India</td>
<td>Mr Mayuran Palanisamy, Director, KPMG</td>
<td>Mr Arjun Kang Joseph, Research Assistant, Carnegie India</td>
<td>Mr Arjun Kang Joseph, Research Assistant, Carnegie India</td>
<td>Dr A Ganesh Kumar, Professor, Indira Gandhi Institute of Development Research</td>
</tr>
</tbody>
</table>

Many other experts, including from international industry bodies, multinational service providers, civil society organisations etc. also responded to the questionnaire, but wished to remain anonymous.
Experts rated possible impact of DL on 30+ indicators on a scale of -5 to +5. These indicators were clubbed into 9+ parameters. Experts also rated their expertise on such parameters on a scale of 1 to 5. The figure below summarises findings of this exercise, and presents average parameter score taking into account expertise of respondents. Parameters which did not show any impact (positive or negative), i.e. those remaining unaffected by DL, have been excluded.

Consumer facing parameters at an individual level may suffer substantial adverse impacts owing to DL. This becomes more relevant under the PDPB 2019, which continues to make transfer of SPD outside India conditional and complicated. While DL opens the possibility of a few benefits, but at great cost. This may lead to risks outweighing the benefits even more then before.
Likely increase in cost of operations to serve Indian consumers (such as creating/accessing local data storage facilities) may adversely impact business viability for small service providers, forcing them to pull out of the Indian market.

Some cross-border services like remittances may be adversely impacted, and may not continue to be available for Indian consumers.

Given that India lacks adequate infrastructure to accommodate all service providers for local storage of data, complete and uninterrupted availability of certain services may suffer in the interim.

Data fragmentation may adversely impact quantity, adequacy, and diversity of data sets necessary for innovation.

Service providers may not be able to collaborate globally and utilise best in class digital tools required for innovation.

Experts rated the indicators on a scale of -5 to +5.
The indicator level analysis does not take into account level of expertise of respondents.
Possible Impact of DL on Risks

Lack of choice for service providers in choosing more secure location for data storage may enhance vulnerabilities to data breaches.

Capacity constraints and limited skilled technical workforce at Indian data centres may open vulnerabilities risking data breaches.

DL may create a 'honeypot of data' concentrated in one geographical location, thereby enhancing the risk of cyber attacks.

Indian DCs are likely to be prone to more external cyber attacks, and lack adequate security measures.

Global service providers may outsource data hosting to third party Indian DCs, thereby limiting their accountability on privacy and data security breach.

Sub-optimal data access requests from governments without following due legal process, and subject to inadequate accountability constraints, may go up, thereby resulting in privacy violation. This may also adversely impact freedom of speech, enhance censorship risks, & have a chilling effect on them.

Unreasonable government directions on content takedown may significantly go up, resulting in enhanced privacy violation and censorship risks.

Experts rated the indicators on a scale of -5 to +5.
The indicator level analysis does not take into account level of expertise of respondents.
The positive impacts may be limited given PDPB 19 allows transfer of non-sensitive and non-critical PD outside India. Moreover, the positive impacts were subject to several conditions and may not outweigh negative impacts.

Risk of sophisticated spywares/ malwares capable of circumventing geographical limitations and being used for foreign surveillance remains.

LEAs need to overcome capacity constraints and infrastructure inadequacies to apprehend cyber criminals, who may not leave adequate traces.

Economic development is contingent on government's support in enabling power, land and cooling facilities for DCs.

DC business is more capital intensive than being labour intensive, thereby questioning hopes of considerable employment generation.

Despite the opportunity to compete, smaller service providers may face resource constraints to invest/ rent local data storage facilities, in contrast to their resourceful competitors. This may result in a limited number of service providers dominating the Indian market.

Experts rated the indicators on a scale of -5 to +5.
The indicator level analysis does not take into account level of expertise of respondents.
Findings from the Consumer Survey on E-Commerce Services (660 Respondents)

<table>
<thead>
<tr>
<th>AGE</th>
<th>GENDER</th>
<th>INCOME</th>
<th>EDUCATIONAL QUALIFICATION</th>
<th>OCCUPATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25 years:</td>
<td>Male: 55.2%</td>
<td>Lower income</td>
<td>Upto Senior Secondary: 8.5%</td>
<td>Student</td>
</tr>
<tr>
<td>18.5%</td>
<td>Female: 44.8%</td>
<td>Middle income</td>
<td>Upto Graduation: 40.5%</td>
<td>Employed</td>
</tr>
<tr>
<td>26-40 years:</td>
<td></td>
<td></td>
<td>Upto Post Graduation: 33.5%</td>
<td>Self-Employed</td>
</tr>
<tr>
<td>53.8%</td>
<td></td>
<td></td>
<td></td>
<td>Unemployed</td>
</tr>
<tr>
<td>41-60 years:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.9%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>61 years &amp;</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>above: 8.8%</td>
<td></td>
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</tbody>
</table>
Consumer satisfaction and perception levels in current scenario

**Satisfaction with service attributes**

- Availability: 3.6
- Innovation: 3.7

**Perception about risks**

- Data Breach: -2.9
- Privacy Violation: -3.0
- Censorship: -3.0

**Perception about industry contribution to societal good**

- Prevent Foreign Surveillance: 3.1
- LEAs Success: 3.1
- Economic Development: 3.5
- Adequate Competition: 3.5

Consumers rated the indicators on a scale of 1 to 5. Risks were converted into negative ratings for representation and calculation purposes.
Likely change in consumer satisfaction and perception levels owing to DL

Changes are depicted as predicted by experts on respective parameters, owing to DL. It is assumed that consumers’ satisfaction and perception about parameters will change in accordance with experts’ predictions. Also, given that the 2019 bill retains SPD & CPD for DL, it may magnify the adverse impact, and diminish the few benefits, thereby reducing consumer welfare even further.
Consumers usage & benefits derived in current scenario

Average Monthly Amount Spent on E-Commerce

Amount Spent (INR 9,828)
- Online Shopping
- Food Delivery
- Urban Mobility
- Entertainment

Perceived Benefits from using E-Commerce
- Convenience
- Cost Saving
- Enhanced Choice
Can change in satisfaction and perception levels result in change in usage?

**Usage may decline with increase in data breach risks**

<table>
<thead>
<tr>
<th>Perception of data breach risk</th>
<th>Monthly amount spent (INR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below average (&lt; -2.92)</td>
<td>10971</td>
</tr>
<tr>
<td>Average (-2.92)</td>
<td>9828</td>
</tr>
<tr>
<td>Above average (&gt; -2.92)</td>
<td>9166</td>
</tr>
</tbody>
</table>

**Usage may decline with increase in privacy violation risks**

<table>
<thead>
<tr>
<th>Perception of privacy violation risk</th>
<th>Monthly amount spent (INR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below average (&lt; -2.99)</td>
<td>11213</td>
</tr>
<tr>
<td>Average (-2.99)</td>
<td>9828</td>
</tr>
<tr>
<td>Above average (&gt; -2.99)</td>
<td>9026</td>
</tr>
</tbody>
</table>

**Usage may decline with decrease in innovation**

<table>
<thead>
<tr>
<th>Satisfaction with innovation</th>
<th>Monthly amount spent (INR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above average (&gt; 3.65)</td>
<td>9902</td>
</tr>
<tr>
<td>Average (3.65)</td>
<td>9828</td>
</tr>
<tr>
<td>Below average (&lt; 3.65)</td>
<td>9702</td>
</tr>
</tbody>
</table>

*Risk scores are on the scale of -5 to -1 and innovation scores are on the scale of +1 to +5.*
Consumers were asked to rate benefits from e-commerce services on a scale of 1 to 5.
But do consumers perceive different parameters as equally important?

Consumers of e-commerce services tend to perceive service attributes as most important.

Equal importance is attributed to risks and societal good.

It may not be possible to outweigh decline in service attributes and risks with enhancement in societal good.

Consumers were asked to distribute a hypothetical sum of INR 100 amongst three parameters, to gauge the relative importance.
Findings from the Consumer Survey on Social Media & Communication Services (649 Respondents)

**AGE**
- 18-25 years: 27.7%
- 26-40 years: 47.8%
- 41-60 years: 16.8%
- 61 years & Above: 7.7%

**GENDER**
- Male: 53.9%
- Female: 46.1%

**INCOME**
- Lower income
- Middle income
- Higher income

**EDUCATIONAL QUALIFICATION**
- Upto Senior Secondary: 12.3%
- Upto Graduation: 38%
- Over Post Graduation: 13.6%

**OCCUPATION**
- Student
- Employed
- Self-Employed
- Unemployed
Consumer satisfaction and perception levels in current scenario

Consumers rated the indicators on a scale of 1 to 5. Risks were converted into negative ratings for representation and calculation purposes.
Likely change in consumer satisfaction and perception levels owing to DL

Changes are depicted as predicted by experts on respective parameters, owing to DL. It is assumed that consumers’ satisfaction and perception about parameters will change in accordance with experts’ predictions. Also, given that the 2019 bill retains SPD & CPD for DL, it may magnify the adverse impact, and diminish the few benefits, thereby reducing consumer welfare even further.
Consumers usage & perceived benefits in current scenario

Consumers were asked to rate benefits on a scale of 1 to 5

Social media usage was gauged on the basis of active minutes spent by consumers on social media services on a daily basis

Communication usage was gauged on the basis of number of people communicated with by consumers on a daily basis
Can change in satisfaction levels result in change in usage of social media services?

Consumers were asked to select appropriate range of minutes for which they actively use social media services on a daily basis.

Consumers were asked to rate the satisfaction levels on a scale of 1 to 5.

Usage of social media services may decline with reduction in satisfaction levels.

Usage appears to plateau around 62-67 minutes.
Can change in satisfaction result in change in benefits perceived from social media services?

Benefits & Satisfaction scores are on the scale of +1 to +5.
Can change in perception levels result in change in usage of communication services?

**Usage may decline with increase in privacy violation risk**


**Usage may decline with increase in data breach risk**

- High Data Breach Risk: 4.4, Average: 3.2, Low Data Breach Risk: 2.3, Usage: 9.9

*All usage figures are in number of people users communicate with on a daily basis.

Risk scores are on the scale of -5 to 1. Usage is compared with below average, average and above average scores to identify trends.*
But do consumers perceive different parameters as equally important?

Consumers of social media and communication services tend to perceive service attributes as most important.

This is closely followed by importance attributed to risks and lastly to societal good.

It may not be possible to outweigh decline in service attributes and risks with enhancement in societal good.

Consumers were asked to distribute a hypothetical sum of INR 100 amongst three parameters, to gauge the relative importance.
Consumers prefer to store data in India as they believe it would result in:

- government (including LEAs) ensuring its protection;
- Enhanced legal recourse and grievance redress available to them, in the eventuality of a data breach/privacy violation.

Consumers opting for ‘continue storing data at current location’, did so primarily because they had not faced any challenge with their service and data protection, and would not want to risks the same by changing the location.

Knowledge & Preference of data storage location has been derived from the findings of all consumers (around 1300), i.e. e-commerce, social media & communication services.
Way Forward & Recommendations
Way Forward Recommended by Experts

- Ensure adequate checks and balances on government use of discretion and enhance accountability
- Facilitate competition, innovation, standard setting, security and accountability among service providers
- Developing baseline principles for protecting consumers in digital economy sectors
- Build domestic capacity of cyber-security experts, data centre management personnel, software experts etc
- Strengthen the proposed Data Protection Authority to reduce information asymmetry, ensure compliance and penalise non-compliance
- Invest in developing requisite infrastructure for data centres in India
- Provide fiscal incentives/subsidies to domestic start-ups and MSMEs for local data storage
- Provide fiscal incentives/subsidies to foreign start-ups and MSMEs for local data storage
Consumers expect privacy, desire data protection, and better recourse/ grievance redress mechanisms. Focus should be on these issues rather than mandating localisation and assuming these would be ensured automatically.

Sensitive personal data (SPD) must be allowed to be stored outside India subject to consumer consent. Clear standards must be developed to prevent abuse of discretion in defining SPD and CPD, and allowing outside India: processing of SPD; and transfer of CPD. Government exemptions must be pruned and any government request for data access must be subject to judicial review.

Alternates to DL should be considered, such as international collaboration by becoming a member of “Chart of signatures and ratifications of Treaty 185: Convention on Cybercrime”, which has specific focus on cross border cybercrimes and associated mutual assistance amongst members.

A separate policy must be designed to create an enabling environment to incentivise processing and storage of data in India. The government must also be nudged to undertake Regulatory Impact Assessments (RIA) for ascertaining the best suited method of achieving its regulatory objectives of ensuring LEAs access to data, economic development etc.

**KEY RECOMMENDATION:** Explore less intrusive means of data governance
Thank You!

For queries, clarification and suggestions, please contact:

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   Amol Kulkarni at amk@cuts.org