

## Operationalising CoFT in Consumer Interest

### Background and Context

The spiralling growth of digital transactions has been fuelled by demonetisation and the COVID-19 pandemic, coupled with the increasing digitisation of businesses. Estimates suggest that India's online retail market will reach US\$350bn by 2030 from US\$45-50bn at present, contributing nearly 40 percent of the US\$800bn consumer digital economy.<sup>1</sup>

The Government of India (GoI) supports this growth, especially with its flagship programme 'Digital India', which envisions a 'faceless, paperless, cashless economy.'<sup>2</sup> The Ministry of Electronics and Information Technology (MeitY) also has a dedicated Digital Economy and Digital Payment Division (DEDPD) which focuses on strengthening the digital payment infrastructure.<sup>3</sup>

Further, the financial regulator of the country, the Reserve Bank of India (RBI), while recognising the potential growth of digital payments in the country,<sup>4</sup> has emphasised on its stand to create an enabling environment for consumers to use digital payments.<sup>5</sup> It has reiterated its stand on the need for ease of use and security of digital payment transactions.<sup>6</sup>

Recently, the RBI had issued a circular 'Card Transactions: Permitting Card-on-File Tokenisation<sup>7</sup> (CoFT) Services' (CoFT circular).<sup>8</sup> Read with 'Guidelines on Regulation of Payment Aggregators<sup>9</sup> and Payment

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<sup>1</sup> <https://redseer.com/newsletters/decode-digital-economy-through-our-lens/>

<sup>2</sup> <http://cashlessindia.gov.in/>

<sup>3</sup> <https://www.meity.gov.in/digidhan>

<sup>4</sup> <https://rbi.org.in/scripts/AnnualReportPublications.aspx?Id=1314>

<sup>5</sup> [https://www.rbi.org.in/Scripts/BS\\_PressReleaseDisplay.aspx?prid=51155](https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=51155)

<sup>6</sup> [https://www.rbi.org.in/scripts/BS\\_ViewBulletin.aspx?Id=18408](https://www.rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=18408)

<sup>7</sup> Tokenisation refers to replacing actual card details with a unique alternate code called the "token", which shall be unique for a combination of card, token requestor, and merchant.

<https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11449&Mode=0>

<sup>8</sup> <https://rbi.org.in/Scripts/NotificationUser.aspx?Id=12159&Mode=0>

Gateways<sup>10</sup> (PA and PG Guidelines),<sup>11</sup> it bars all entities (including merchants<sup>12</sup> and PAs/PGs) other than card issuers (banks) and card networks (collectively called Token Service Providers (TSPs)), from storing consumers' card details, January 01, 2022,<sup>13</sup> and instead permitted CoFT. The circular also directs merchants and other entities to purge the card details currently saved by this date.

This paper seeks to decode the concept of CoFT, highlight the challenges in operationalising CoFT and mark out unintended adverse consequences on stakeholders, particularly on consumers, if operationalisation of CoFT is hastened in an unprepared ecosystem.

## Decoding CoFT

The RBI notes that many merchants store consumers' actual card details [also known as Card-on-File (CoF)] to offer convenience to their consumers while undertaking card-based digital transactions. It further notes that storing card details like card number, name on card, and expiry date, with many merchants, increases the risks of card details being stolen/ compromised/ leaked considerably. Subsequently, the RBI has argued that such card details can be misused to perpetrate frauds within and outside the country.<sup>14</sup>

Accordingly, the RBI permitted card payment tokenisation on card transactions in January 2019,<sup>15</sup> extended the scope of permitted devices in August 2021,<sup>16</sup> and most recently, permitted card issuers to offer CoFT on September 07, 2021.<sup>17</sup> This is expected to improve the security of consumers' card details.

Typically, multiple stakeholders are involved in conducting a successful online card transaction. These have been given in the figure below, along with their corresponding requirements concerning the CoFT circular and the PA and PG Guidelines.

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<sup>9</sup> PAs are entities that facilitate e-commerce sites and merchants to accept various payment instruments from the customers for completion of their payment obligations without the need for merchants to create a separate payment integration system of their own. PAs facilitate merchants to connect with acquirers. In the process, they receive payments from customers, pool and transfer them to the merchants after some time.

<https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11822&Mode=0>

<sup>10</sup> PGs provide technology infrastructure to route and facilitate the processing of an online payment transaction without any involvement in the handling of funds. <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11822&Mode=0>

<sup>11</sup> <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=12050&Mode=0>

<sup>12</sup> The word "merchant" wherever used in this circular refers to the end-merchant. However, in the case of an e-commerce marketplace entity, merchant refers to the said e-commerce entity. Further, token requestor and merchant may or may not be the same entity.

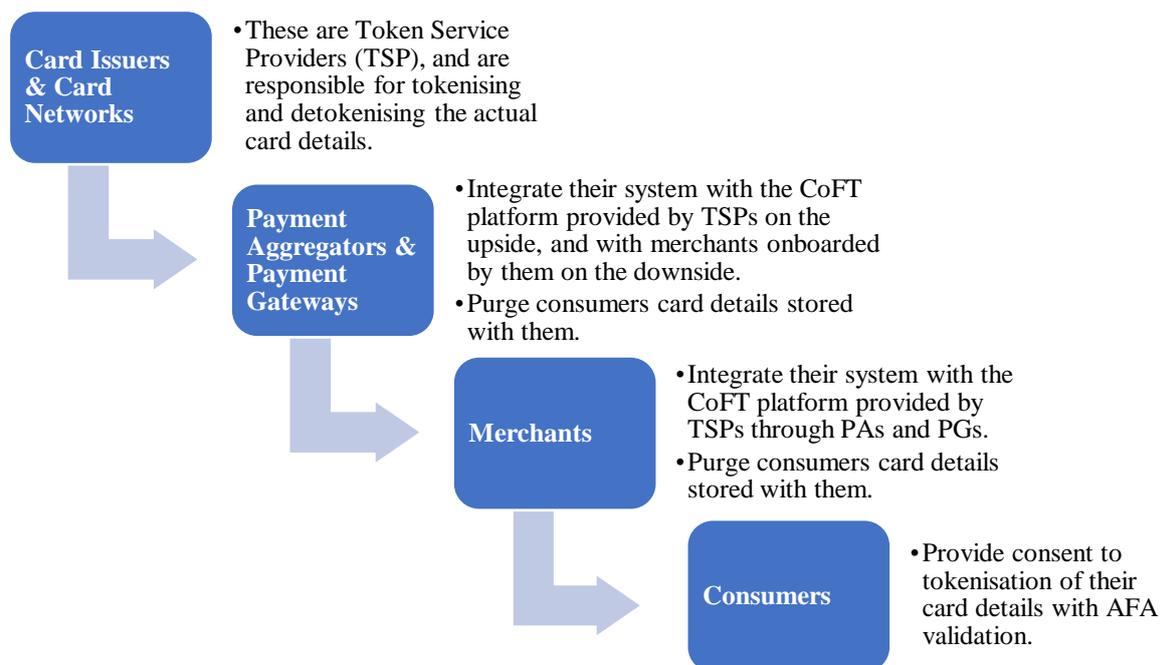
<sup>13</sup> <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=12211&Mode=0>

<sup>14</sup> [https://rbi.org.in/scripts/BS\\_PressReleaseDisplay.aspx?prid=52188](https://rbi.org.in/scripts/BS_PressReleaseDisplay.aspx?prid=52188)

<sup>15</sup> [https://www.rbi.org.in/Scripts/BS\\_CircularIndexDisplay.aspx?Id=11449](https://www.rbi.org.in/Scripts/BS_CircularIndexDisplay.aspx?Id=11449)

<sup>16</sup> <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=12152&Mode=0>

<sup>17</sup> <https://rbi.org.in/Scripts/NotificationUser.aspx?Id=12159&Mode=0>



**Figure 1: Entities' Orchestration & Dependencies in CoFT**

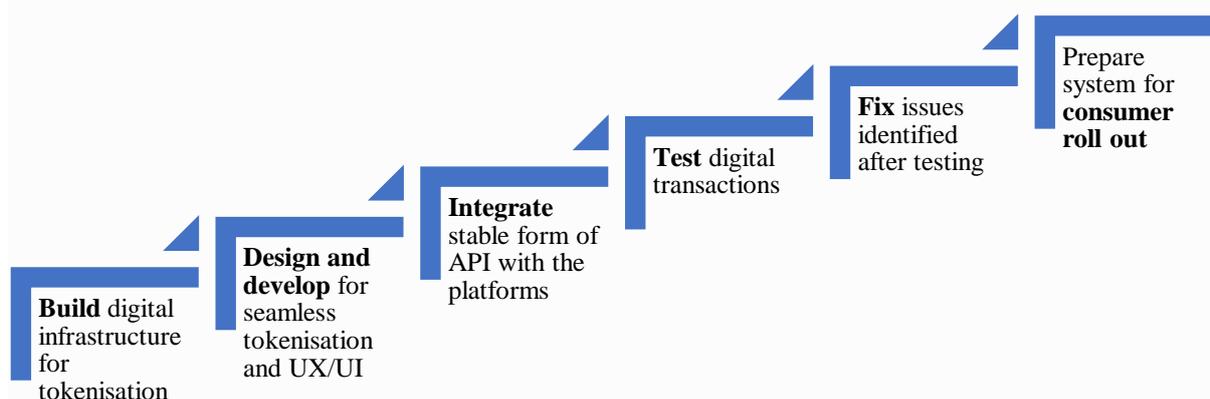
As is visible in the figure above, all entities involved in the card-based digital payments chain need to work in an orchestrated manner, given the many inter-linkages and inter-dependencies with each other. Once a consumer explicitly consents to tokenisation with Additional Factor of Authentication (AFA) validation, a merchant or payment aggregator/ payment gateway may (after registration of the card), for every subsequent transaction, generate a token request. Actual card data, tokens and other relevant details are stored in a secure mode by the TSP only.

## Challenges Associated with Hastening the Operationalisation of CoFT

While CoFT is a globally accepted alternate to storing card details with merchants and other entities, it may do more harm than good if not implemented right. Accordingly, while the RBI may build a case that CoFT will offer customers the same degree of convenience as now, it is contingent upon its timely, proper and complete implementation before the deadline. There are various challenges associated with the operationalisation of tokenisation, which has been discussed below.

### ***Lack of Ecosystem Preparedness***

The operationalisation of tokenisation is a **sequential procedure** that involves multiple entities in the card-based payments chain to create a robust digital infrastructure that supports tokenisation. It is imperative for card issuers and card networks to first build their capacities to host token requests, generate tokens and share the same with relevant entities in the digital payments ecosystem. Thus, at the entity level itself, each player in the payment chain has to prepare itself to offer/integrate the tokenisation solution.



**Figure 2: Complex Building of Digital Infrastructure to Support Tokenisation**

The complexity and interdependency of the system are such that building, integrating, testing, fixing of issues and re-development of the software over multiple rounds at each level of the payment chain, as shown above, becomes crucial.

Furthermore, given the existence of merchants with diverging systems, capacities, and capabilities (particularly small merchants and start-ups, primarily based in tier-II towns), integrating CoFT solutions with merchants is somewhat technically time-consuming. It may require regulatory intervention to ensure holistic integration.

Specific representations highlighting the lack of preparedness have been made by stakeholders, including consumer group CUTS (the open letter sent to RBI is available [here](#)), individual banks, Indian Banking Association (IBA),<sup>18</sup> NASSCOM,<sup>19</sup> Merchant Payments Alliance of India (MPAI) and Alliance of Digital India Foundation (ADIF).<sup>20</sup>

While media reports suggest that large card networks and card issuers have already rolled-out CoFT in partnership with select merchants,<sup>21</sup> from a digital payments' ecosystem perspective, overall, there

<sup>18</sup> Indian Banks Association writes to RBI, seeks extension for tokenisation deadline, available at: <https://www.moneycontrol.com/news/business/companies/iba-banks-knock-rbis-door-seek-extension-for-tokenisation-deadline-7848411.html>

<sup>19</sup> Reserve Bank of India: Representation on facilitating compliance with Card-on-File Tokenisation (CoFT), available at: <https://community.nasscom.in/communities/policy-advocacy/reserve-bank-india-representation-facilitating-compliance-card-file>

<sup>20</sup> <https://indianexpress.com/article/business/economy/rbi-tokenisation-deadline-merchants-7686073/>

<sup>21</sup> Paytm launches card tokenisation for online transactions, available at: <https://www.thehindubusinessline.com/money-and-banking/paytm-launches-card-tokenisation-for-online-transactions/article37764599.ece?homepage=true>; Visa launches India's first card-on-file tokenization service, available at: <https://www.livemint.com/companies/news/visa-launches-india-s-first-card-on-file-tokenization-service-11633516881425.html>; and <https://www.livemint.com/companies/news/worldline-launches-card-tokenisation-solution-with-major-card-networks-in-india-11639378590819.html>

seems to be a lack of readiness.<sup>22</sup> Reportedly, there are even some smaller issuing banks, which constitute the first step in the sequential process, that are not ready<sup>23</sup> and the timeline for their preparedness still remains largely unclear.

Further, citing the trends observed after the recent controversial RBI circular regarding recurring payments e-mandate (details available [here](#)), wherein less technical migration to framework and registration processes were involved, it was noted that even three months after the deadline, the recurring payments ecosystem was still not prepared.<sup>24</sup> There is a looming fear in the ecosystem that history may repeat itself.

Furthermore, even if the merchants are ready for integration by the deadline of January 01, 2022, at both an entity and ecosystem level, unless end consumers provide their consent to tokenisation of their cards, the adverse impact on consumers and merchants is likely to be the same (possible adverse impact has been discussed in the subsequent section).

Before releasing the circular, such lack of consent may or may not be informed, given the absence of consumer outreach and lack of inclusive stakeholder consultation undertaken by the RBI.

### ***Functional deadline for Merchants et al., But No Technical Deadline for TSPs***

There is no technical deadline for the token issuers, i.e., the card networks and card issuers, without whom tokenisation shall not be possible. However, there is a **functional deadline** on other entities in the digital payment chain, including PAs, PGs and merchants. The circular specified, *'with effect from January 1, 2022, no entity in the card transaction/payment chain, other than the card issuers and/or card networks, shall store the actual card data. Any such data stored previously shall be purged.'*<sup>25</sup>

Accordingly, token issuers have **no incentive/ accountability** to operationalise CoFT by the deadline. In effect, it leaves merchants and their consumers at the mercy of card issuers and card networks to operationalize CoFT by the deadline, else merchants will not be able to process consumers card-based digital payments through pre-saved cards.

By virtue of the pivotal role these token issuers have in implementing tokenisation, this may pose a significant roadblock for the timely and complete operationalisation of tokenisation.

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<sup>22</sup> <https://www.thehindubusinessline.com/money-and-banking/card-tokenisation-unlikely-to-take-off-by-rbis-deadline-of-january-1/article37946959.ece>

<sup>23</sup> <https://www.thehindubusinessline.com/money-and-banking/card-tokenisation-unlikely-to-take-off-by-rbis-deadline-of-january-1/article37946959.ece>

<sup>24</sup> <https://economictimes.indiatimes.com/tech/technology/tech-companies-want-two-more-years-for-tokenisation/articleshow/88399160.cms?from=mdr>

<sup>25</sup> <https://rbi.org.in/Scripts/NotificationUser.aspx?Id=12159&Mode=0>

### **Other Issues for Reconsideration**

Apart from the implementation challenges discussed above, a few other issues require reconsideration from the RBI. The circular provides that entities can store limited data – the last four digits of the actual card number and card issuer's name, for transaction tracking and/or reconciliation purposes. It is not clear if such details are adequate for providing adequate support to consumers, including refunds, cancellations/ refunds, fraud risk mitigation, offering EMI facility,<sup>26</sup> among others.

The **BIN range** is typically required to route transactions and track details such as the issuer, network, card type, etc. and is reported information available publicly;<sup>27</sup> however, the same may have to be purged. There are no details available on any good practices or BIN conserving tokenization techniques<sup>28</sup> that RBI may have referred to before arriving at this regulatory decision.

The circular places responsibility on card networks for ensuring complete and ongoing compliance by all the entities. Such **quasi-regulatory powers** to a set of entities in the payments value chain could result in the exclusion of business consumers, particularly smaller merchants and start-ups, in case they are unable to integrate their systems with card networks and card issuers,<sup>29</sup> without appropriate recourse mechanisms.

Lastly, it is not clear if the RBI consulted with businesses and consumer groups while mandating CoFT and prescribing a timeline for its implementation. **Lack of adequate inclusive stakeholder consultation** is contrary to good international practices of regulation-making. A compilation of 'Consultation Processes Undertaken by Monetary Regulatory Authorities Globally, is available [here](#).

## **The Story of Unintended Adverse Consequences**

In case merchants are required to comply with the functional deadline of purging all saved card data and not store card data, and CoFT is not operationalised by then, it will force consumers to undergo the process of re-entering all their card details every time they want to make a card-based digital payment. This shall adversely impact one of the most used digital payment options for consumers and merchants.

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<sup>26</sup> <https://digitalvarta.in/2021/09/06/how-rbis-move-to-secure-customers-data-can-put-startups-at-a-disadvantage/>

<sup>27</sup> <https://www.freebinchecker.com/india-bin-list>

<sup>28</sup> Bin-Conserving Tokenization Techniques Generating Tokens In Reverse Order And Employing Common Device Pan With Differing Pan Sequence Number Values Across Token Instances, United States Patent Application 20190156335, available at: <https://www.freepatentsonline.com/y2019/0156335.html>

<sup>29</sup> <https://digitalvarta.in/2021/09/06/how-rbis-move-to-secure-customers-data-can-put-startups-at-a-disadvantage/>

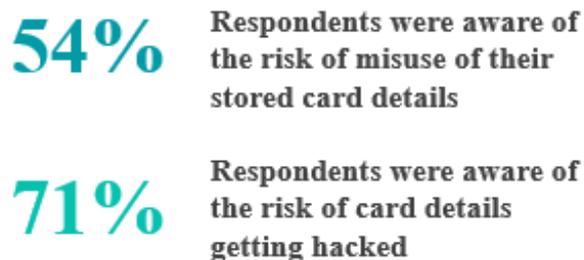
### **Impact on Consumers**

The **reliability of card transactions** can be seen by the way cards dominate the value of the transaction.<sup>30</sup> India has an estimated 98.5 crore cards, which are used for about 1.5 crore daily transactions worth INR 4000 crore.<sup>31</sup> Debit cards make up for 40 percent of all digital payments and credit cards stand at 28 percent.<sup>32</sup>

In case of a disruption in smooth card-based digital payments, the consumers are going to be the victims of this regulatory decision. They shall bear the brunt of the failure of digital transactions or loss of access to services on account of smaller merchants' inability to integrate, as they did after the recurring transactions e-mandate. A similar case was seen with the sloppy implementation of the RBI's circular on the processing of e-mandate on cards for recurring transactions,<sup>33</sup> details of which are available [here](#).

Further, since **merchants are the first touch-point for consumers**, any friction in these transactions may drastically impact consumer experience and have the propensity to push them back on the cash economy.

As per the latest CUTS survey, the findings for which are available [here](#) and were reported [here](#), consumers were found to be aware of possible risks involved in storing card details with online service providers, such as potential misuse of card details by service providers, and the possibility of card details being hacked by cyber-criminals. Despite such risks, consumers claim to be storing their card details online for convenience, benefits in the form of cashback, etc., and trust in different stakeholders of card-based online payments.



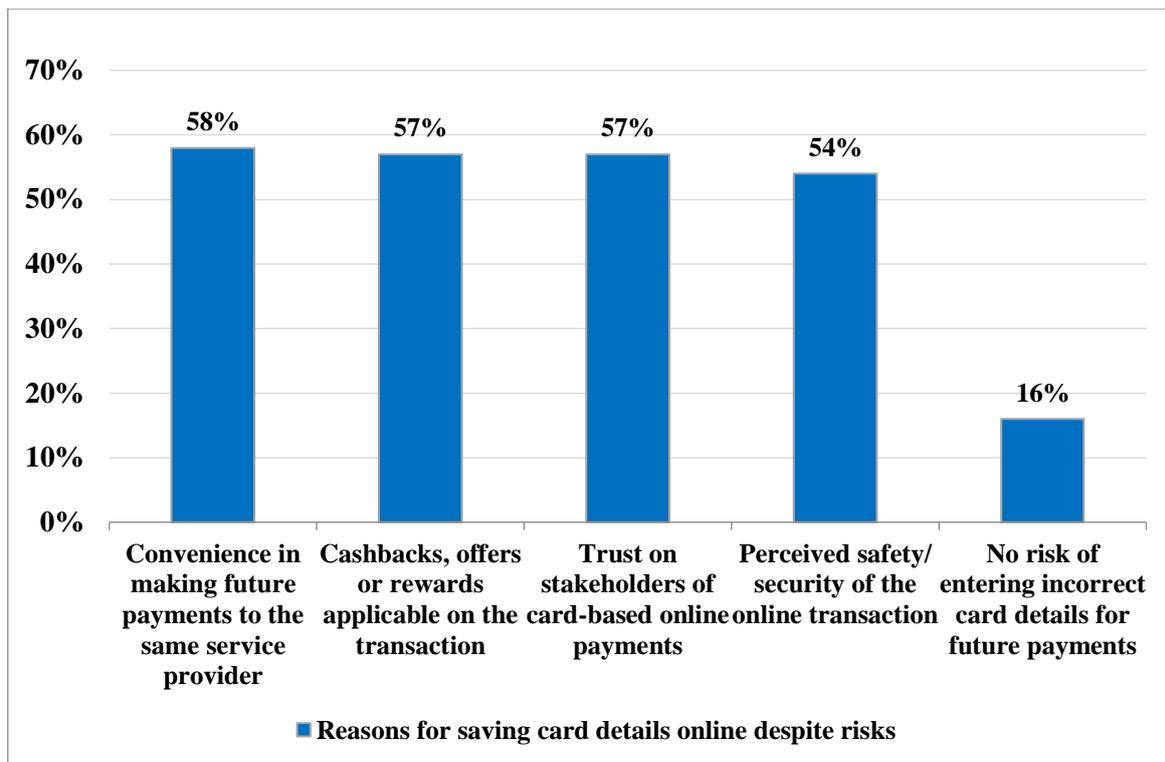
**Figure 3: Consumers' level of awareness regarding the risk of misuse and hacking of card details**

<sup>30</sup> <https://timesofindia.indiatimes.com/business/india-business/upi-most-preferred-digital-payment-mode-among-consumers-worldline-india/articleshow/82080348.cms>

<sup>31</sup> <https://www.cii.in/PressreleasesDetail.aspx?enc=WoTdS2zodUw+6rrG9Yh1wIQkHgy4zhBi1zMzX1y/3c=>

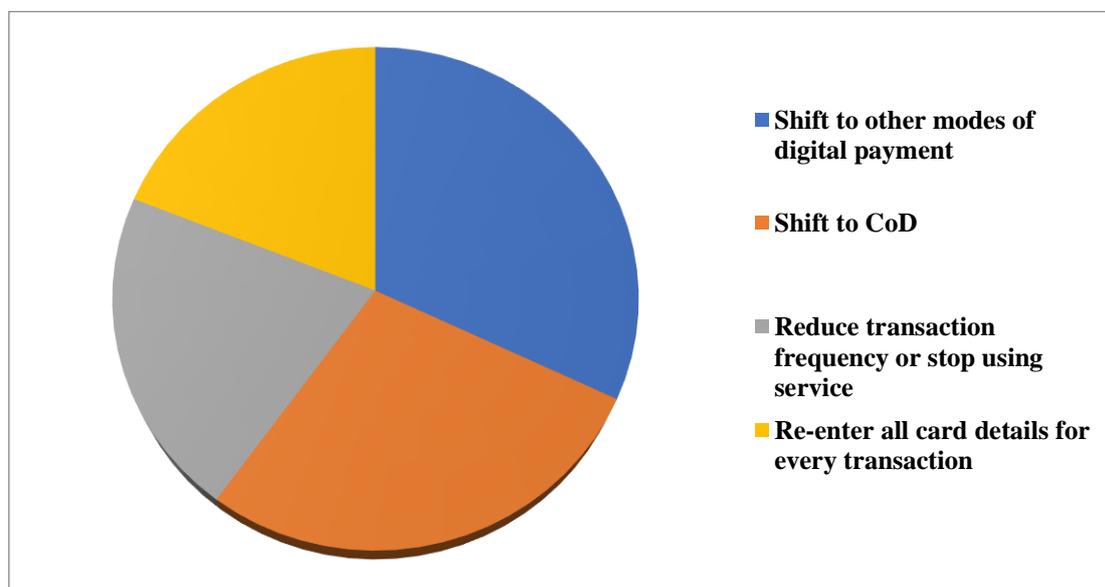
<sup>32</sup> <https://timesofindia.indiatimes.com/business/india-business/upi-most-preferred-digital-payment-mode-among-consumers-worldline-india/articleshow/82080348.cms>

<sup>33</sup> <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11668>



**Figure 4: Reasons for consumers saving card details online despite risks**

The survey findings indicated that at least 82 percent of consumers consider re-entering details to be extremely inconvenient. Other findings from the survey further substantiated the shift to alternative modes of payment, including cash on delivery (CoD). Therefore, there may be a severe economic impact if the operationalisation is not conducted in an effective manner and disadvantages consumers.



**Figure 5: Change in Consumer Preferences owing to Inconvenience upon Operationalisation**

With the **deletion of BIN ranges** and lack of clarity regarding the status of token processing, complications such as tracking the card owner will become an issue. As a result of this, consumer experience shall be severely impacted and consumer data shall not be available for offers, refunds, cancellations, grievance redressal, risk analysis and creditworthiness, etc.

Consumers may need time to familiarise themselves and adapt to the new UX/UI interface. Without a seamless identical pre-tokenisation experience, all consumers may become susceptible to **other forms of fraud, including social engineering attacks such as phishing**.

Not just this, consumers conducting cross-border transactions interacting with foreign merchants, such as freelancers, researchers, and consultants, may also experience additional challenges. It has been estimated that transactions worth INR 3 billion per month may get disrupted in such a scenario.<sup>34</sup>

All these inconveniences shall be particularly amplified for new-to-digital consumers, victims of the gendered digital divide, the number of illiterate consumers, senior citizens, and persons with disabilities. They are likely to face additional difficulties in entering the complete card details for every transaction. This regulatory move can compel consumers to migrate to other payment modes and push cautious consumers to the cash economy.

### ***Impact on Merchants***

The service providers shall severely be impacted since purging the 'saved card details' will cause widespread discontent among consumers and lead to a disruption in payments. Due to the friction in payments, consumers may stop using services entirely, and merchants will consequently lose customers.

In the light of this, it becomes even more necessary to highlight that the deletion of the BIN ranges consumer benefits by way of promo codes, offers and rewards will be impacted severely. Upon analysis of consumer motivation to buy online, it was found that 46 percent of consumers shop online for better prices and online sales and promotions drive purchase by 27 percent.<sup>35</sup> Without this motivation, consumer preferences and decisions shall be impacted.

Additional services offered by merchants, including customer support and prevention of fraud by running diagnostic analytics, may not be possible after the purging of card data. Reports suggest that customer support is the largest driving factor for customer loyalty.<sup>36</sup> A lapse in these integral services does not present a good picture for merchants in the times to come.

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<sup>34</sup> [https://xkdr.org/papers/SaneShahZaveri2021\\_card\\_data\\_storage\\_prohibited.pdf](https://xkdr.org/papers/SaneShahZaveri2021_card_data_storage_prohibited.pdf)

<sup>35</sup> KPMG, The truth about online consumers, Global Online Consumer Report, available at: <https://assets.kpmg/content/dam/kpmg/xx/pdf/2017/01/the-truth-about-online-consumers.pdf>

<sup>36</sup> KPMG, The truth about online consumers, Global Online Consumer Report, available at: <https://assets.kpmg/content/dam/kpmg/xx/pdf/2017/01/the-truth-about-online-consumers.pdf>

## The Way Forward

It appears from the above that India's financial regulator has been facing an RBI v. RBI situation. On the one hand, there has been advocacy by RBI itself for an enabling digital payments ecosystem for consumers.

However, on the other hand, blanket deadline-based regulatory decisions (instead of evidence-based regulation-making) of the RBI seem to potentially be hampering frictionless cashless payment experiences for consumers. The following steps for the way forward become imperative for deepening and increasing penetration of digital payments in India, with reference to CoFT.

- While ensuring the safety and efficiency of card-based digital payments, CoFT must be implemented in a **smooth tiered manner** with appropriate time being given to card issuers and card networks to share digital infrastructure with the rest of the downstream entities.  
Further, a **second-tiered timeline** should be shared with the downstream entities after the card issuers and networks have set up their infrastructure. Until and unless the digital ecosystem is not up and running with proper, tested digital infrastructure, the consumers must have the option of using their saved cards for an online card-based digital transaction.
- It is imperative that there be **industry preparedness** for the tokenisation solution, both at an individual entity level (so that tokenisation solution is offered across all stages and end uses for a consumer) and at an ecosystem level (so that consumers have the same experience across platforms).  
RBI should issue comprehensive guidelines for responsibility frameworks, standards, implementation, accountability, compliance and **continuously monitor the ecosystem** while providing necessary support for integration of smaller merchants as well.
- **A proper consultative process** to understand the interests of all entities in the digital payment ecosystem is necessary. It is feared that owing to the lack of consultation, identification of ecosystem vulnerabilities and mismanagement of priorities, the RBI may lose focus on the regulatory process and the big picture for the digital payment ecosystem in India.  
It is imperative that there is an open channel of dialogue between the regulator and stakeholders.
- RBI must also bring in more **transparency** while issuing regulatory decisions. The rationale for a decision would explain many missing links and enable stakeholders to build their digital infrastructure and integrate, keeping the RBI's vision in mind. Tools such as whitepapers and FAQs must be published with updated and comprehensive information.
- Conducting consumer surveys and consumer impact assessment is critical. Consumers and the impact of regulatory decisions on them should be the **foremost consideration of the regulator. Consumer issues cannot be brushed under the carpet as transition or teething issues.**

- RBI should also consider exploring solutions like tokenisation **within a Regulatory Sandbox** before ecosystem-wide implementation. This would ensure responsible innovation in financial services, promote efficiency and bring benefit to consumers.<sup>37</sup>
- Going forward, it may also be relevant for RBI to consider alternate liability frameworks.<sup>38</sup> Deadlines by themselves are not enough; comprehensive compliance frameworks including penalties for non-compliance and incentives for compliance are necessary.

This Briefing Paper is authored by Vidushi Sinha, Research Associate, CUTS International and prepared as a part of the project 'Implementation of RBI's Tokenisation Directive in Consumer Interest (CoFT Project)'.

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<sup>37</sup> <https://www.rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=938>

<sup>38</sup> [https://xkdr.org/papers/SaneShahZaveri2021\\_card\\_data\\_storage\\_prohibited.pdf](https://xkdr.org/papers/SaneShahZaveri2021_card_data_storage_prohibited.pdf)