

Use of Distributed Ledger Technology to control Unsolicited Commercial Communication

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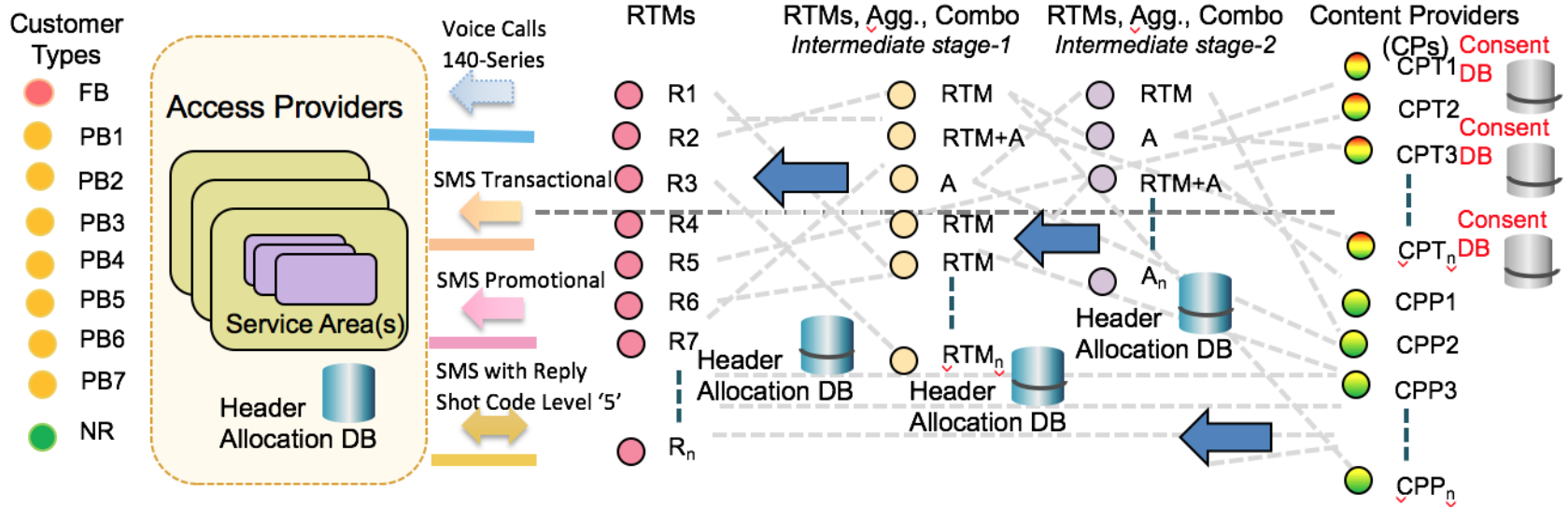


- Unsolicited Commercial Communications (UCC) are a major cause of disturbance and inconvenience for telecom users in recent times.
- These communications invade the privacy of individuals.

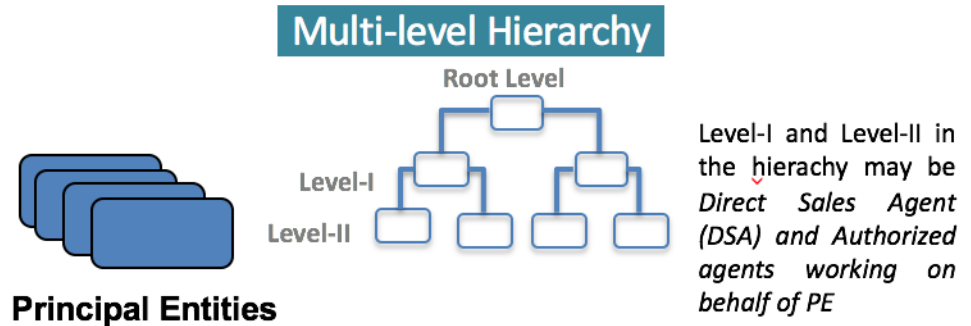
How big is Commercial Communication market in India

- Total mobile Subscribers \approx 1.2 billions
- Subscriber registered in DND > 230 millions
- Total Messages > 30 bn/month
- Registered Telemarketer > 22 thousands
- Senders > 10 lacs
- Headers >10 lacs
- Total disconnection due to illegal telemarketing activity > 1.2 million

UCC Eco System



Note: Some of the Header Allocation DB may only be having list of headers and may not have all the details about header e.g. name and contact details of content provider to whom particular header is assigned.



Provision of Regulations

- ***Mandatory registration of telemarketers with TRAI***
- ***Enabling consumers to block receiving of promotional messages by registering in the National Preference Register (NCPR)***
- ***Requiring telemarketers to send messages as per registered preference.***
- ***Financial Disincentives on Registered Telemarketers and TSPs for breach of the provisions.***
- ***Separate headers for transactional and promotional messages.***
- ***Separate pipe for transactional and promotional messages.***
- ***Separate number series for telemarketing voice call.***
- ***Provision of disconnection of all telecom resources and blacklisting for two years if telemarketing activities by unregistered entities.***
- ***Signature identification in bulk messages***

Problems observed

- *Long time taken in registration and de registration*
- *Long time window for UCC complaint resolution and action against defaulter is more than seven day.*
- *Despite disconnection of telecom resources, UCC from Unregistered Telemarketers were increasing.*
- *Cases of victimization*
- *consent taken by organizations or individuals to send transactional messages were unverifiable and accessible, as well as, customers don't have the choice to revoke such consent,*
- *Transactional Message headers abused to send promotional messages,*
- *Cases of non-traceability of Senders of UCC, and intermediaries,*
- *New ways used by telemarketers to make UCC, such as robocalls and silent calls which may be of concern to the customer.*

Problems observed (contd..)

- Security of preference data
- Robust verification and authentication of telemarketers and other entities
- Securing client database.
- Management of headers structure, life cycle.
- Management of contracts between entities.
- Registration and verification of content template.
- Recording of consent in verifiable manner.

Need of Technology driven framework for UCC

- **Efficient and effective**
- **Safe and secure data handling**
- **Regulatory Checks in distributed environment, delegation of functions.**
- **TSPs to ensure other entities perform requisite checks.**
- **Standard Agreements prescribed via regulations to ensure checks by other entities.**
- **More trusted relationship between Terminating Access Provider and Originating Access Provider:**
- **Building more confidence in the UCC ecosystem for the Principal entities**
- **Using sensitive information in secure manner**
- **Provide intelligence.**
- **Objectives to be met by technological solution:**
 - **Protect consumers**
 - **Protect interests of telecom service providers**
 - **Promote competition**

Distributed Ledger Technology (DLT) can provide requisite capabilities

- **DLT solutions are smart**
 - DLT Ledger enable records enormous number
 - Secure
 - Can integrate business rule, smart contract, digital signatures etc.
- **DLT is Resistant to unauthorized changes**
 - Matching copies with participants
 - Change only after consensus
- **DLT Replicates data with security and accuracy**
 - Entries reflected in all copies in seconds
 - Data maintained cryptographically through keys and signatures

TRAI New Regulation
Telecom Commercial Communication
Preference Regulations, 2018

Features of new Regulation

- New framework is simple, technology driven, encourages automation
- Permits authorization/ delegation of various functions to participating entities to ensure regulatory compliance, hence reducing the burden on access providers
- Code of Practices by TSPs
- Brings efficiency in UCC eco system
- Streamlining of processes
- Use Cloud Services

Features of New Regulation

- **Unbundling and Delegation of function:**
 - » **Header Registration Function (HRF)**
 - » **Consent Registration Function (CRF)**
 - » **Content Template Registration Function (CTRF)**
 - » **Scrubbing function (SF)**
 - » **Content Verification Function (CVF)**
 - » **Delivery Function for Messages with Telecom Resource Connectivity to Access Provider (DF)**
 - » **Aggregation Function for Message to other Telemarketer for delivery function (AF)**
 - » **Voice Calling Function with Telecom Resource Connectivity**
- *Each function to maintain separate log of activity.*
- *TSP to frame Code of Practices and compliance through technology*

Features of New Regulation (Contd...)

- **Access Providers to adopt Distributed Ledger Technology (DLT) as Regulatory Technology to develop core of UCC eco system**
- **Set up a Regulatory Sandbox for testing implementation of regulatory checks using DLT networks.**
- **DLT to be used for**
 - **Recording preferences**
 - **Recording and verification of consumer consent**
 - **Complaint handling**
 - **Intelligence**
 - **Registration of entities**
 - **Registration and verification of contents**

Important properties of DLT

- **Reconciliation Through Cryptography**
- **Replicated to many Institutions**
- **Granular Access Control**
- **Transparency and Privacy**
- **DLT has potential to offer solution with better management and control**
- **Automation, Flat architecture, Speed, sharing of data, shared cost**
- **Adaptability of DLT to meet evolving requirements, intelligent and programmable contracts**

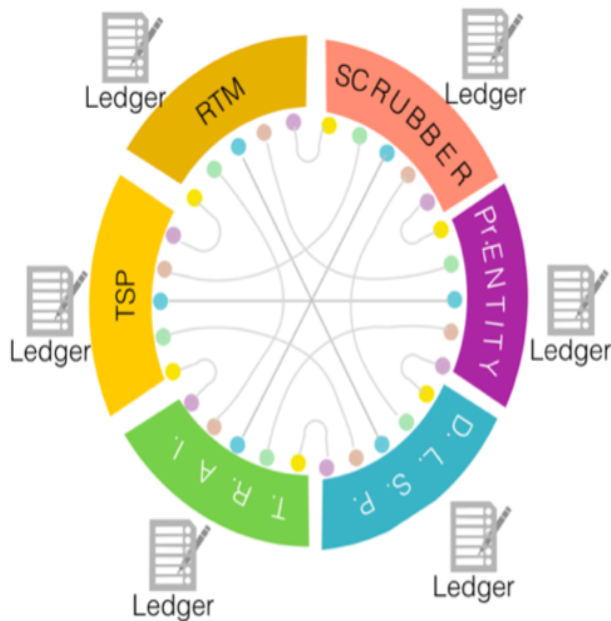
Types of DLT Networks

- Broad spectrum of distributed ledger models, with different degrees of centralization and different types of access control, to suit different business needs.
 - ‘unpermissioned’ ledgers that are open to everyone
 - ‘permissioned’ ledgers that may have one or many owners they can add records and only can verify the contents of the ledger.
 - ledger’s integrity is checked by a limited consensus process
 - trusted actors
 - data entry and verification faster and more efficient
 - creates highly-verifiable data sets.

TRAI mandated Access Providers to adopt Distributed Ledger Technology (DLT) with permissioned and private DLT networks

Record keeping between traditional and DLT based systems

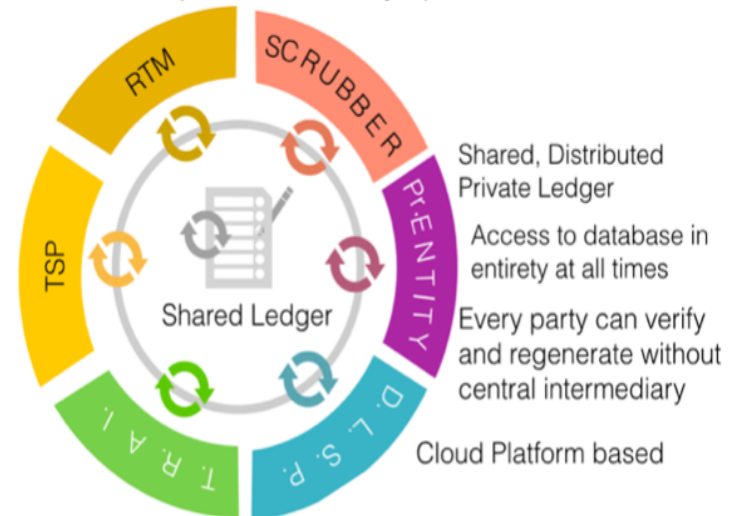
Book Keeping Across All Participants



- Every Participants keeps its **own ledger** updated with their transactions
- **Transactions** mostly **bilateral**
- Complex Silos **requiring reconciliation**

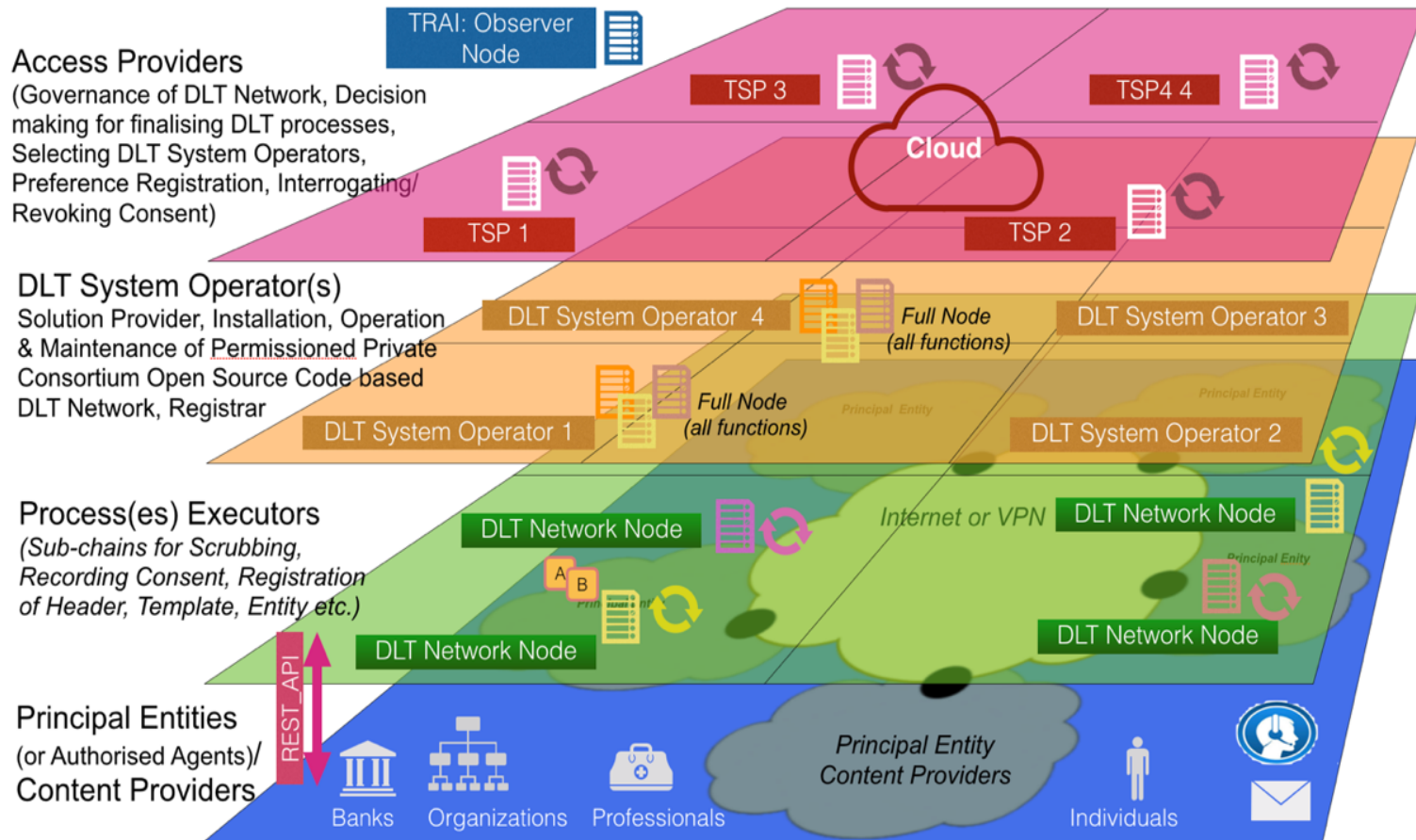
Distributed Ledger built by Participants

Time ordered, Computationally and cryptographically architected to ensure permanence, widely replicated



- **Paradigm Shift:** Single owner to **lifetime history of asset or transaction** distributed across multiple participants
- Instead of messaging based communications, the new paradigm is **state based**
- Smart Contracts incorporate **business rules** for **automation** of transactions (Intelligent and programmable contracts)

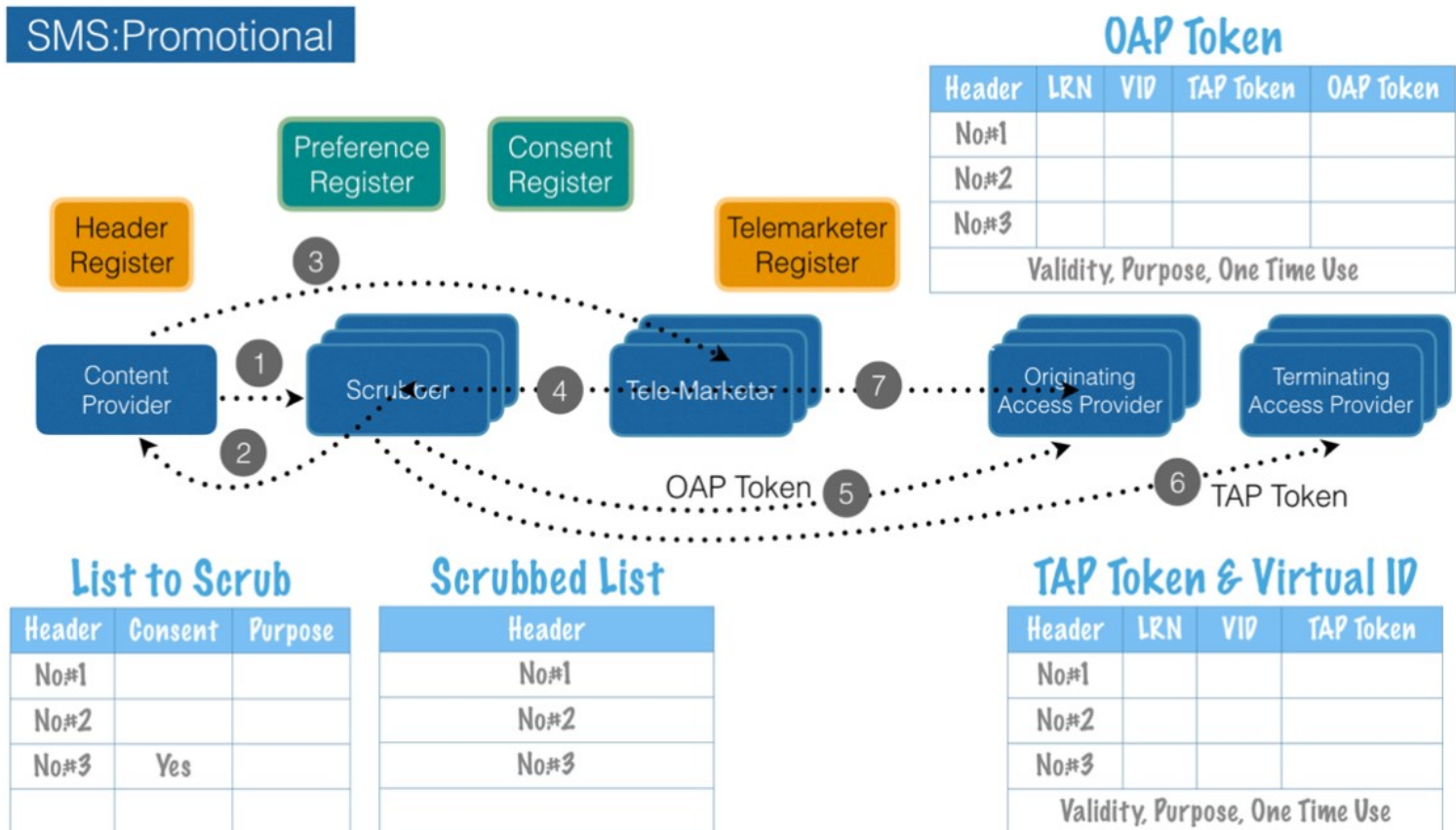
Architecture for implementing UCC eco system based up on DLT



DLT's potential in UCC Eco System

- **Offers a revolutionary solution to fundamentally improve the regulation and delivery of commercial communications.**
- **Allows all players in the ecosystem to share customer information and transaction histories securely over a distributed data infrastructure,**
- **The ecosystem's participants can be certain of the digitized records being authentic**
- **Content providers and principal entities can be sure about regulatory compliances and safety of their data along the delivery chain.**
- **Provide capabilities in hands of TSPs to control and manage commercial communications in more efficient and effective manner and meet their regulatory obligations.**

Approach to protect data while sending promotional SMS



Benefits of new regulation

Customers....

- **Enable capabilities in the system to define categories for preferences in more granular manner and thus allowing them to precisely convey their interest areas;**
- **Empowering to know the scope and purpose of the consent and proper verification**
- **Empowering customer to have more control to manage consent and preferences;**
- **Implements choices to come very quickly into force;**
- **Enables faster resolution of UCC related complaints;**
- **Avoid inconvenience to customer because of UCC from UTM's**
- **Avoid chances of their victimization because of false complaints and protect them from disconnection of their telecom resources.**

Benefits of new regulation

Access Providers.....

- Not levy Financial Disincentives as technology driven solution to control UCC from UTM's in more efficient and effective manner;
- Agility provided by the technology solutions to quickly control participants in the UCC eco system
- Reduce regulatory burden by delegating functions.
- Advantages of economy of scale.
- Increase business opportunity by smoothening the processes via automation and enabling to quickly on-board the telemarketers;
- Provide capability to trace defaulting entity in case of non-compliance entities;
- Provide opportunity to test and develop new processes using regulatory sandbox
- Avoid loss of business opportunities to them as it mitigates chances of victimization of its customers on account of false complaints;

Benefits of new regulation

Telemarketers....

- **Provide ease to do business**
- **Reduce risk as chances of flouting of regulatory compliances would be less.**
- **Lower upfront cost to start telemarketing business.**
- **Avoids chances of loss of business of opportunities to UTM's because of quick detection of UTM activities.**
- **Enhance volume of business due to flexible options to customers as many may like to receive such messages in their leisure time;**
- **Enhance business opportunities for them as they can participate in new functions and roles such as consent acquisition;**

Benefits of new regulation

Business Entities.....

- Enhance business opportunities by providing better ways and means to reach out to target customers according to their interest areas;
- Enable to keep client data in safe and secure manner while sharing it with other entities or carrying out activities or functions required to ensure regulatory compliances;
- Protect their Brand as it would provide capabilities to display their identity after authentication.
- Lower risks because of avoiding chances of non-compliances
- Provide options to connect directly with the entities who are actually carrying out regulatory functions.

Thanks