NATIONAL BLOCKCHAIN FRAMEWORK

इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी मंत्रालय
MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY
सत्यमेव जयते

Digital India
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VISHVASYA: NATIONAL BLOCKCHAIN TECHNOLOGY STACK

Enabling trust in digital systems

Blockchain is a Technology suitable for developing applications with transactional data stored across network of nodes. It provides tamper resistant storage with audit trail for future verification. Vishvasya, the National Blockchain Technology Stack, facilitates in enabling trust by developing new types of distributed software architectures, capable of finding consensus on their shared states and providing a single source of truth. Vishvasya, through its Blockchain as a Service (BaaS) model, provides security assurance of various Blockchain components across the stack. It reduces the need for skilled human resources and enables technological support to organizations in developing and deploying Blockchain applications.

Vishvasya Blockchain as a Service (BaaS)

Vishvasya BaaS addresses the challenges of Blockchain adoption across various stakeholders including Infrastructure Providers, Smart Contract Developers and Application Developers.

Stakeholder Aligned Framework

Infrastructure Providers:

- Blockchain Network Setup Wizard
- Single and Multi Node Setups

Smart Contract Developers:

- Smart Contract Studio with pre-populated templates
- Design patterns for various application domains

Application Developers:

- Generic REST APIs to access Smart Contract Functions
- Easy integration with Mobile Apps, Web Apps and IoT devices

Vishvasya BaaS Features

- Rapid end-to-end Permissioned Blockchain Application Development & Deployment
- Ready to use Security Audited Blockchain Containers for Production setup
- Blockchain specific Security Audit Guidelines & Best Practices
- Geographically Distributed Infrastructure across three Data Centres (Hyderabad, Pune and Bhubaneswar)
- Framework Augmented with Documentation for easy onboarding of Stakeholders
- NBF Lite - Light weight platform bundled & offered for Rapid prototyping, Research & Learning

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PERMISSIONED BLOCKCHAIN APPLICATIONS AND RESEARCH COMPONENTS

A number of Blockchain based solutions are developed/ ongoing in association with Government organizations such as Security Printing & Minting Corporation of India Limited, Cotton Corporation of India Limited, Forensic Science Laboratory, Sardar Vallabhbhai Patel National Police Academy, Central Board of Secondary Education, Ministry of Justice, Ministry of Consumer Affairs, Unique Identification Authority of India and so on. Associated with various state Governments such as Karnataka, Puducherry, Andhra Pradesh, Chhattisgarh, Assam, Telangana and Jammu & Kashmir towards development and deployment of Blockchain applications.

Blockchain based Applications

- e-Stamps Solution
- Judiciary Application
- IPS officers service level training record management
- Forensic Application
- Praamaanik - verification of mobile app authenticity
- Consent Management Framework
- IoT Device Security Management
- Cotton bale identification and tracking
- Domicile Certificate Chain
- Document Chain (Caste Certificate Chain, Property Chain, Education Certificate Chain)
- Tracking of Agriculture Produce
- Inspection system for Child Care Institutions

Research Components

- **Security & Privacy Enhancement**
  - Zero-Knowledge Proof (ZKP)
  - Attribute Based Encryption (ABE)
  - Indigenous Certification Authority (CA)
  - Software Security Module (SSM)
  - Smart Contract Security Testing
  - Security Audit Checklists & Guidelines
- **Performance Enhancement**
  - Parallel Smart Contracts, Throughput & Fault Tolerance
- **Scalable Protocols**
- **Interoperability across applications**

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PRAAMAANIK

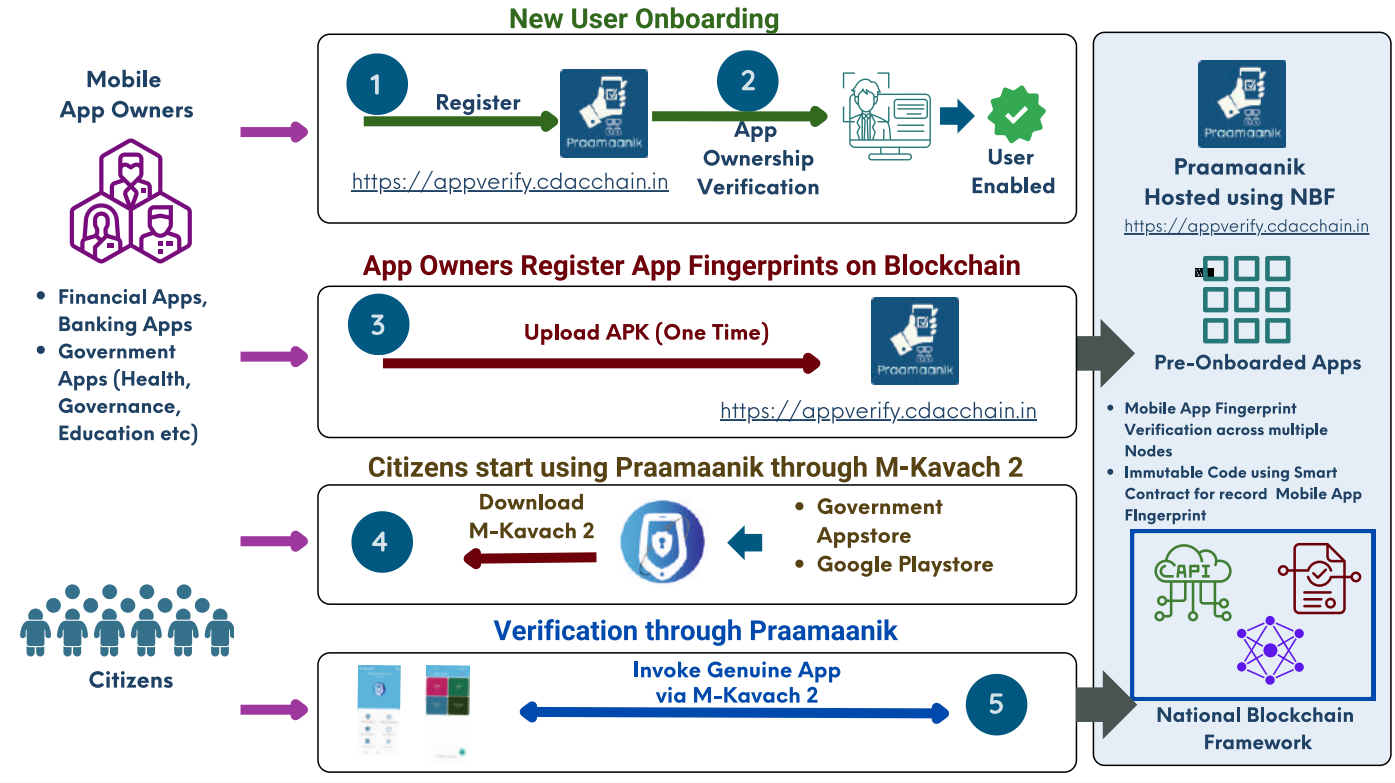
Powered by Blockchain Technology to verify mobile app security

In today's rapidly changing digital landscape, safeguarding mobile devices from malicious apps and fake customer support is crucial. These issues can compromise personal information and also lead to financial losses. Praamaanik is a solution that harnesses Blockchain technology to verify mobile app origins and is powered by the National Blockchain Framework. The Mobile Apps are uploaded by designated representative of the organization and the unique details of the mobile app are recorded in the Blockchain ledger. The citizens can identify the authentic mobile apps through the M-Kavach 2 mobile security app.

Praamaanik

Features & Benefits

- Immutable ledger of mobile app fingerprints
- Improved user satisfaction and trust
- Single source of truth for mobile app authenticity
- One time & easy to record mobile app fingerprint
- Blockchain solution to combat counterfeit / fake mobile apps
- Easy and reliable connect to customer support team



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NATIONAL BLOCKCHAIN PORTAL

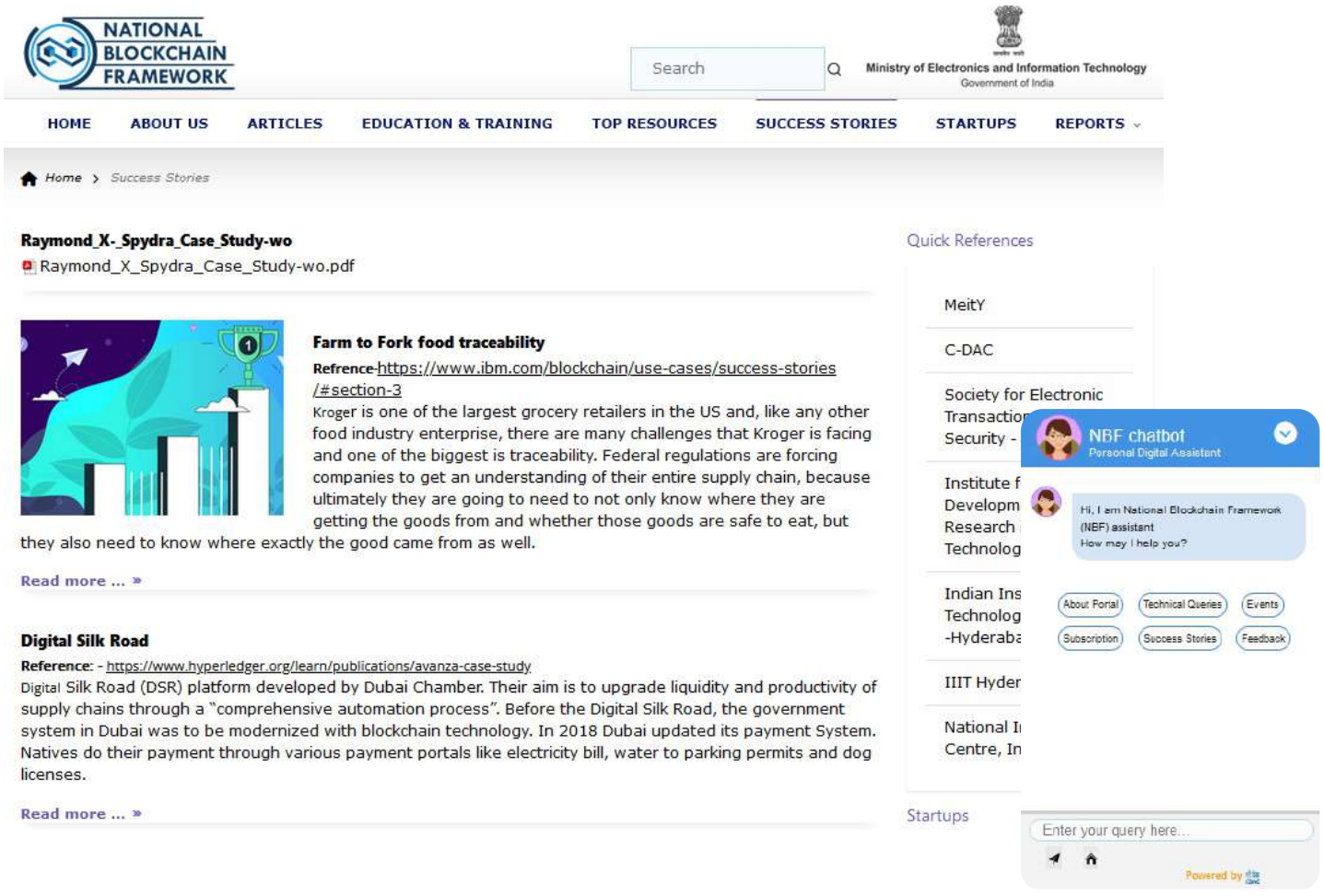
The National Blockchain Portal is developed on the theme based on Content Management System to manage the contents related to the National Blockchain Framework initiative. It contains information related to the current Blockchain News, latest Articles, Events, Conferences, Education & Training, Success Stories thereby providing the viewers with the latest updates on Blockchain trends.

Portal Coverage

- Latest News
- Success Stories
- Technical Resources
- National & International Events
  - Workshops
  - Conferences
- List of Blockchain Startups
- Education and Training
- Publications / Patents

Features

- **Integrated Chatbot:** AI based quick search on the queries related to the portal contents
- **Crowdsourced Content:** Facilitating the Users to "Contribute Content"
- **Managed Content:** Using various roles such as "User", "Reviewer" and "Admin" role
- **Subscription:** Get regular updates about the latest portal content



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