

DEVELOPMENT, HOSTING AND MANAGED SERVICES PROPOSAL FOR NFDC BLOCKCHAIN Submitted to



by



Blockedge Technologies Inc., (www.blockedge.io www.securecloud.com)

On 3rd March 2023

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Introduction

The National Film Development Corporation of India (NFDC) based in Mumbai is the central agency established in 1975, to encourage high quality Indian cinema.^[1] It functions in areas of film financing, production and distribution and under Ministry of Information and Broadcasting, Government of India. The primary goal of the NFDC is to plan, promote and organise an integrated and efficient development of the Indian Film Industry and foster excellence in cinema.

In 2013, NFDC started its label, "Cinemas of India", specifically to promote and distribute the parallel cinema film produced by it, since the 1980s. This also includes the separate "Cinemas of India" website, many of the movies which have long been out of circulation are now restored, and available as free online streaming and also as DVDs. Notable films in the series, include *Mirch Masala* (1987), *Ek Din Achanak* (1989), *Train to Pakistan* (1998), *Mammo* (1994), *Uski Roti* (1969), *Kamla Ki Maut* (1989) and *27 Down* (1974).

NFDC currently owns huge number of media clips, movies, songs, stories, posters and a variety of filmi merchandise that could be of immense value to a large segment of content curators and audience across the world.

NFDC wishes to leverage advanced digital technologies like Blockchain to protect the copyrighted content of the content creators who are developing song, stories and various audio visual and written material that aids the movie and documentary film creation process.

NFDC also wishes to unlock the value of the media and filmi content under its ownership and expand its franchise across the world by inviting the art and film lovers across the world to curate, own and trade the content in the form of Blockchain technology backed NFTs or Non-Fungible Tokens.

Blockedge technologies Inc., a subsidiary of BSE listed SecureKloud Technologies has approached NFDC to assist the creation of NFDC Blockchain platform that can assist NFDC in achieving its goals to create a highly trusted media marketplace for its assets.

In the following sections we are presenting the architecture of NFDC Public Permissioned Blockchain which can be operated within the regulatory constraints and approvals without crypto asset integration that can also be extended to global crypto marketplaces.

Blockedge proposed to build and operate the NFDC Blockchain platform on behalf of NFDC in the following ways:

Build, Maintain and Manage the Platform and all the applications at cost (mentioned in the proposal) or

Build, Maintain and Manage the Platform and all the application for a one-time setup/ customisation fee of Rs 150 lakhs (exclusive of taxes) + 25% revenue share of all the revenue generated using the platform.

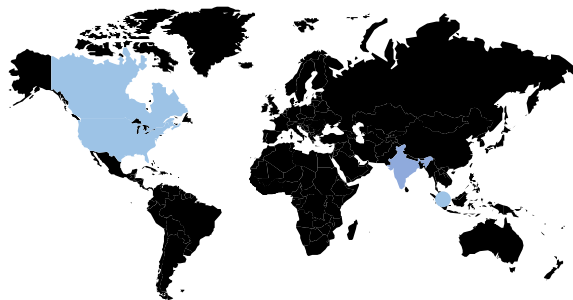
About Blockedge Technologies Inc. (“Blockedge”):

Blockedge (www.blockedge.io) is a subsidiary of SecureKloud Technologies Ltd, a leading Global IT Business Transformations, Secure Cloud Solutions, and Managed Services Provider based in the San Francisco Bay area and a publicly listed company on Indian Stock Exchanges (NSE and BSE). Headquartered in New Jersey, USA, Blockedge has its knowledge center based out of Chennai, India.

Blockedge is a Blockchain technology platform fully dedicated to accelerating Blockchain transformations. Offering a host of products, solutions and services, Blockedge brings the power of automation for enterprises to build and adopt global scale Blockchain networks to transform their businesses. Blockedge offers Blockchain as a Service platform, Blockchain application development and maintenance services for global enterprises and WEB3 companies across the world.

Further, SecureKloud, the holding company is an AWS Premier Consulting Partner and a certified Next-Gen AWS MSP with competencies in Security, DevOps and Big Data. SecureKloud offers a comprehensive suite of cloud solutions that give their clients the ability to leverage the power of cloud computing platform Capabilities.

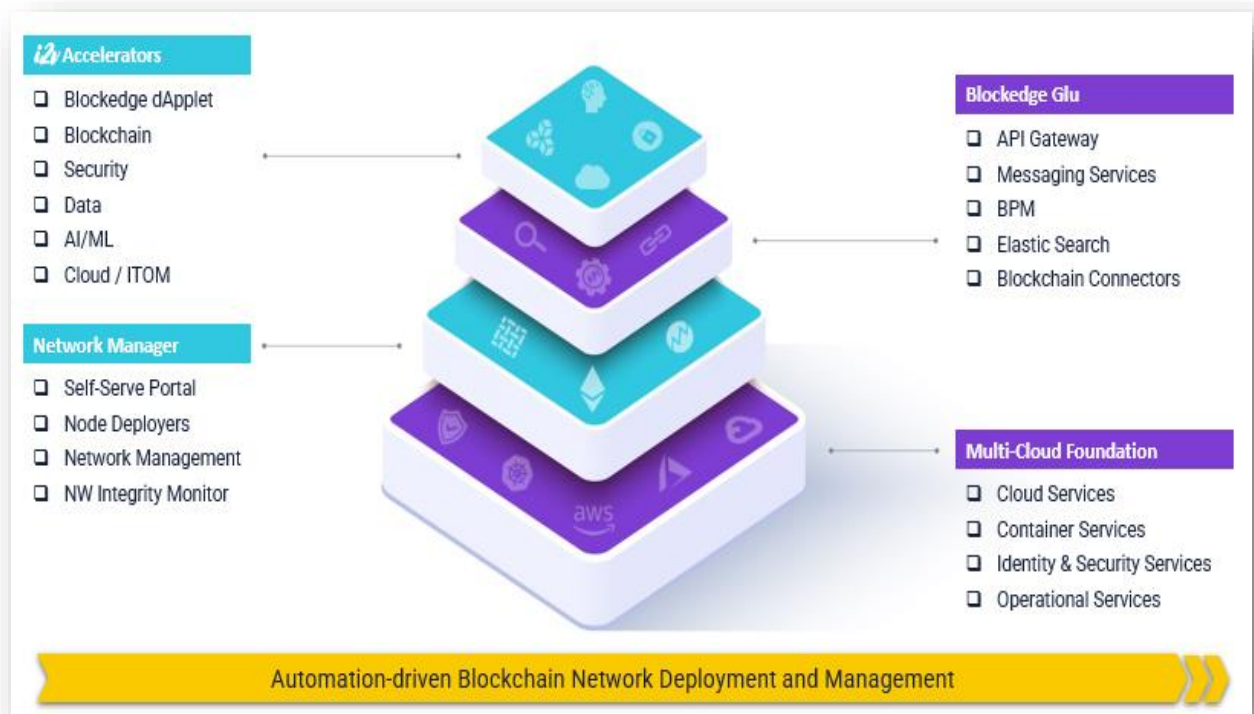
Our Global Reach



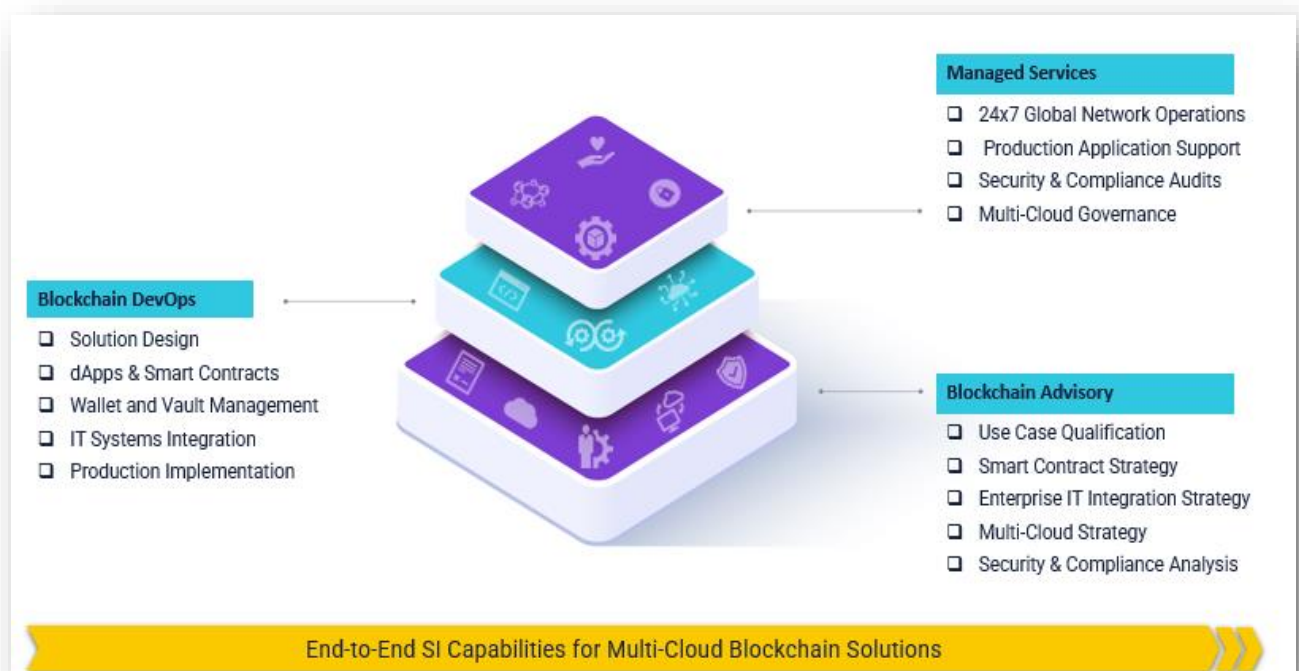
Our Cloud Partnerships & Top-notch Industry Certifications



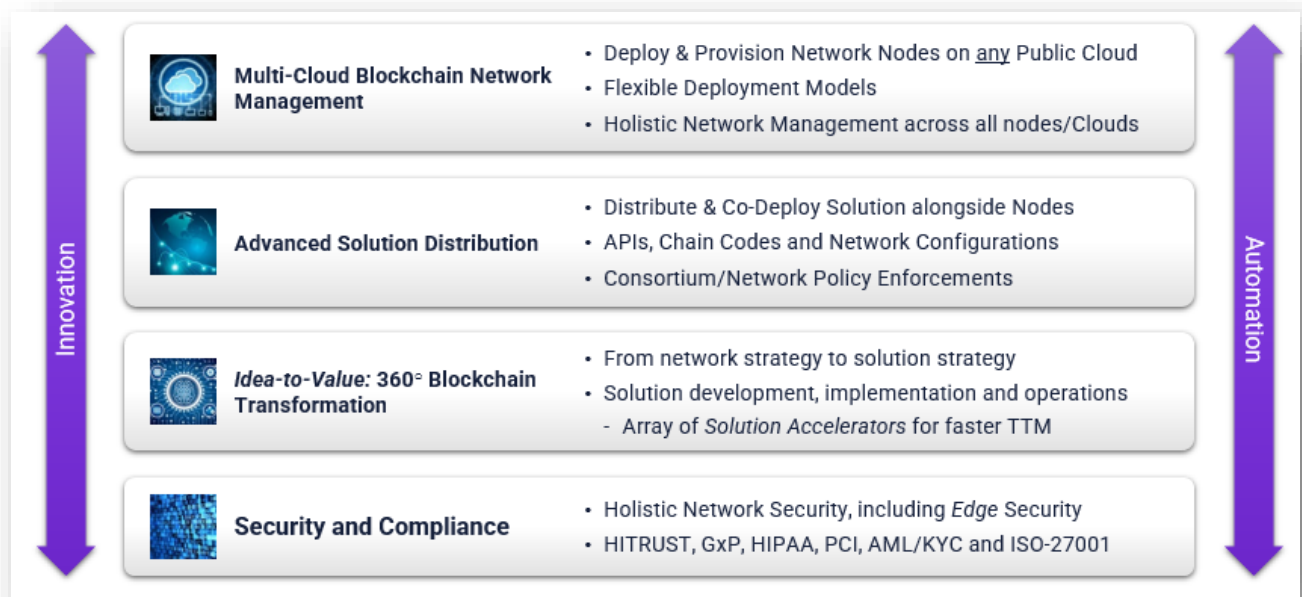
Blockedge Technology Portfolio



Blockedge Services Portfolio



Blockedge's unique positioning



Requirements overview

Background and objective

The National Film Development Corporation of India (NFDC) based in Mumbai is the central agency established in 1975, to encourage high quality Indian cinema. It functions in areas of film financing, production and distribution and under Ministry of Information and Broadcasting, Government of India. The primary goal of the NFDC is to plan, promote and organise an integrated and efficient development of the Indian Film Industry and foster excellence in cinema.

NFDC wished to leverage Blockchain technology in increasing the public participation in the film making process, enhancing the trust for content producers through content authentication & timestamping services and also enable the funding, trading and sharing of its content through NFT (Non-Fungible token Technology).

Scope of work

Blockedge shall provide the following Services which includes the design, develop, and implement the Software to NFDC based on Blockchain technology for the global markets including India.

Blockedge proposes to develop a private/public Blockchain for NFDC which will be the industry specific Blockchain where all the stakeholders can participate.

The following applications would be developed in NFDC Blockchain

- NFT Marketplace for listing and selling NFDC's audio, video and poster assets.
- NFDC Blockchain Wallet for managing NFDC tokens and NFTs &
- Copyrights DAPP

NFDC Blockchain is poised to be the first of its kind for the industry where everyone and every use-case from the industry can be in this chain.

The proposed Blockchain would be a smart contract capable, permissioned or permissionless Blockchain will be deployed by encompassing various stake holders like:

- Industry Partners
- Production houses
- Cinema Halls
- Ticket Resellers
- Fans and any others identified and suggested by NFDC from the ecosystem.



Why Blockchain Technology for Media Creators and Media Owners?

Blockchain and Distributed Ledger Technologies are fast emerging as the Trust mediators in a number of fields by leveraging the principles of Automation, Decentralisation, Distributed ledgers leading to disintermediated but trusted and transparent transactions amongst the participants.

Benefits of Blockchain for NFDC:

The Media business still primarily operates on legacy systems and business models erected when the films and other content produced were distributed in a hard-copy format, and not released via the internet. Only a few players have caught up to digitization, and they dominate the streaming market, squeezing out profit for artists and content creators.

The open and decentralized nature of the Blockchain platform will allow actors in the entertainment industry & NFDC and its partners and clients to reap the following benefits:

- Decreased IP infringement.

- Disintermediated content from industry intermediaries
- Direct monetization of all copywritten assets through smart contracts and p2p micropayments

Blockchain based Content protection by NFDC:

Blockchain-based content protection can provide several benefits to story writers and content creators, including:

1. **Copyright protection:** By registering their content on a Blockchain, story writers and content creators can establish a clear record of ownership and prove their copyright in case of any infringement or disputes. The Blockchain provides an immutable and tamper-proof record that can be used as evidence in legal proceedings.
2. **Anti-piracy measures:** Blockchain technology can be used to create a decentralized and transparent system for tracking and verifying the distribution of content. This can help to prevent piracy and unauthorized sharing of content, by allowing content creators to monitor and control the distribution of their content.
3. **Royalty management:** Blockchain-based smart contracts can automate the process of royalty payments to content creators, ensuring that they receive their fair share of revenue from the distribution of their content. This can help to eliminate the need for intermediaries and reduce the risk of disputes over payments.
4. **Transparency:** The use of Blockchain technology provides transparency to the content distribution process, allowing content creators to monitor the use and distribution of their content in real-time. This can help to ensure that their content is being used in the way that they intended, and that they are receiving the appropriate compensation.
5. **Protection against censorship:** The decentralized nature of Blockchain technology means that content creators can distribute their content without relying on centralized platforms or intermediaries. This can provide protection against censorship and ensure that their content is available to audiences around the world.

Overall, the use of Blockchain-based content protection can help to provide greater security, transparency, and control to story writers and content creators, ensuring that they are properly compensated for their work and that their content is protected from unauthorized use and distribution.

Non-Fungible tokens to monetise the content owned by NFDC:

Blockchain technology, and specifically the use of Non-Fungible Tokens (NFTs), can provide several benefits for content owners in the media and entertainment industry. Some of the key benefits of Blockchain and NFTs for content owners include:

Authentication and provenance: NFTs are unique digital tokens that are verified and tracked on a Blockchain. This allows content owners to prove ownership of their content and track its history, ensuring that the content is authentic and has not been tampered with or stolen.

Monetization: NFTs can be used as a tool for content owners to monetize their content in new ways. By creating unique and exclusive digital assets, such as limited-edition artwork or

collectibles, content owners can sell these assets to collectors and fans, creating a new revenue stream.

Royalty management: NFTs can also be used to automate royalty payments to content owners. By setting up smart contracts on the Blockchain, content owners can ensure that they receive a percentage of each sale or transaction involving their content, without the need for intermediaries or manual accounting processes.

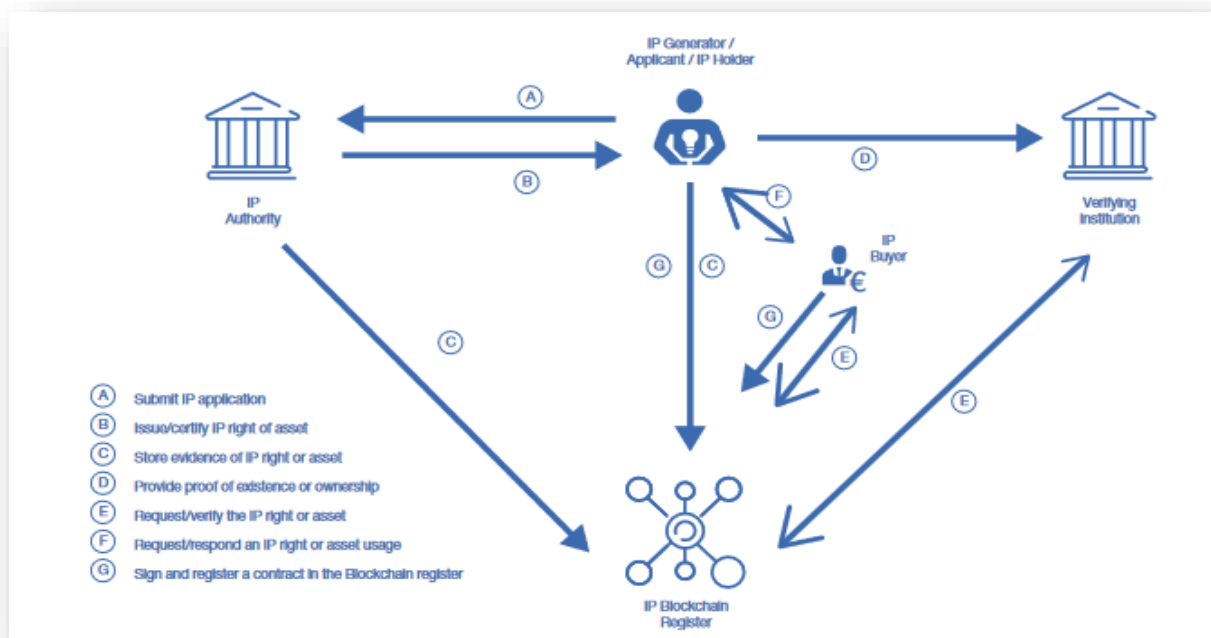
Fan engagement: NFTs can also help content owners to engage with their fans in new and innovative ways. By creating unique digital assets and experiences, content owners can offer their fans exclusive access to behind-the-scenes content, virtual meet-and-greets, or other perks and rewards.

Preservation and archiving: Finally, Blockchain technology can help to preserve and archive important cultural and historical content. By storing content on a decentralized and immutable Blockchain, content owners can ensure that their content is available for future generations, without the risk of it being lost or destroyed over time.

Overall, the use of Blockchain and NFTs in the media and entertainment industry can provide a range of benefits for content owners, from authentication and monetization to fan engagement and preservation.

IP & Copyright Protection using NFDC Blockchain platform:

The following diagram depicts the copyright protection process as implemented using NFDC Blockchain.



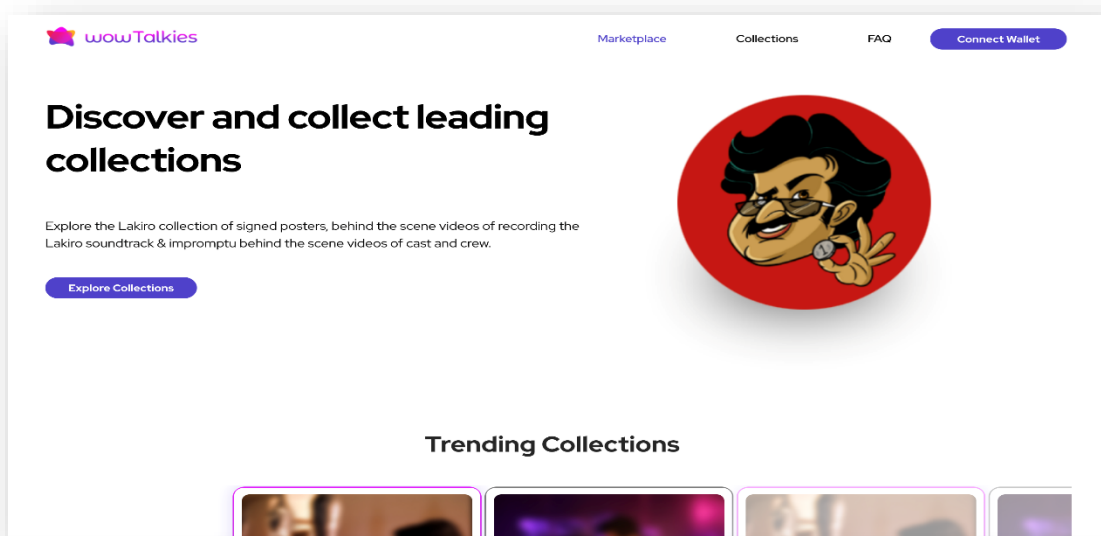
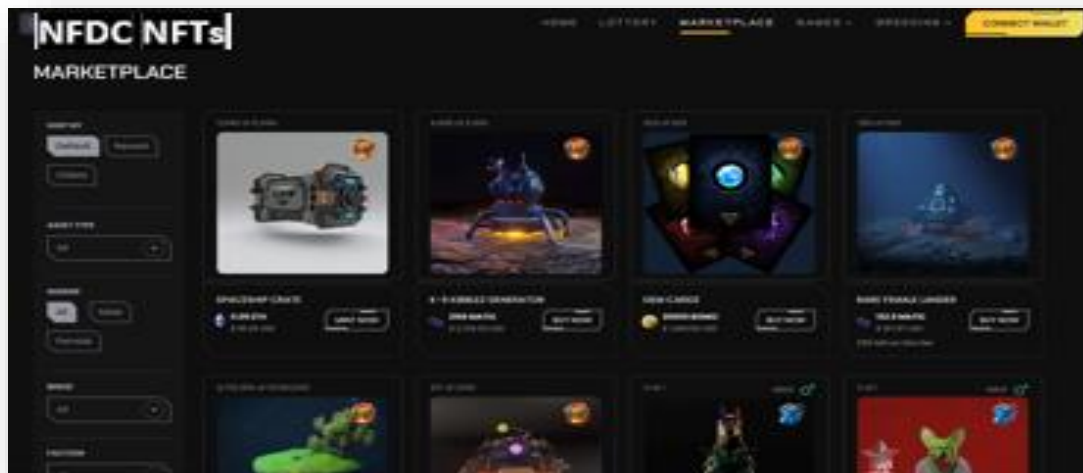
NFT Marketplace deployment on NFDC Blockchain:

Mobile responsive web marketplace will be developed using latest tech stack with Metamask wallet integration for receiving the payments.

Features of the platform

- Landing Page
- Discover page with basic search features.
- Buy Assets
- Profile and My Assets
- Smart contract for NFT will be developed and deployed in Blockchain.
- Royalty and Platform fee configuration in smart contract

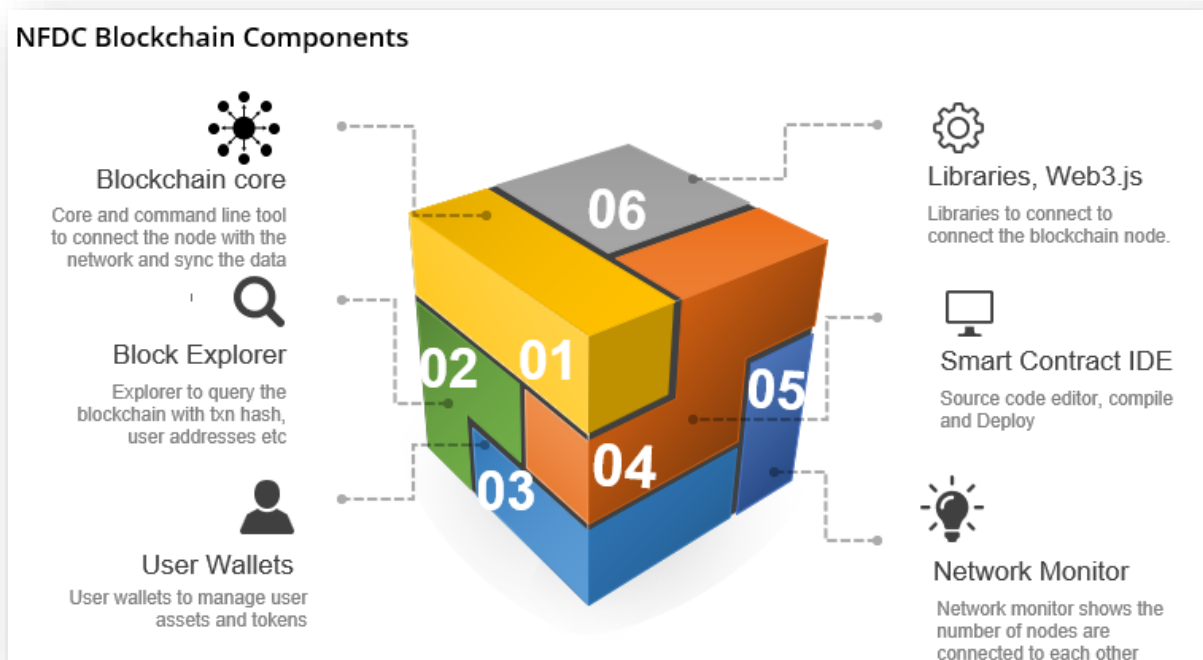
The following figures depict some of the components of the NFDC Marketplace:



Detailed scope coverage

Phase 1 – NFDC Platform Application development, implementation and hosting

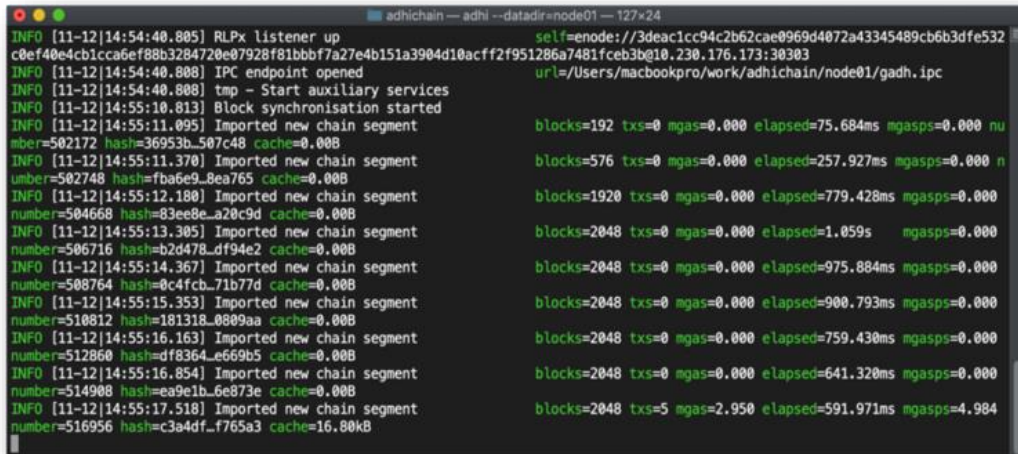
The following figure depicts the core components of NFDC Blockchain that will be built by Blockedge:



Details of the NFDC Blockchain Components:

Blockchain Core:

- Core Blockchain is a command line utility that will connect to the existing network of nodes and sync with other nodes connected.



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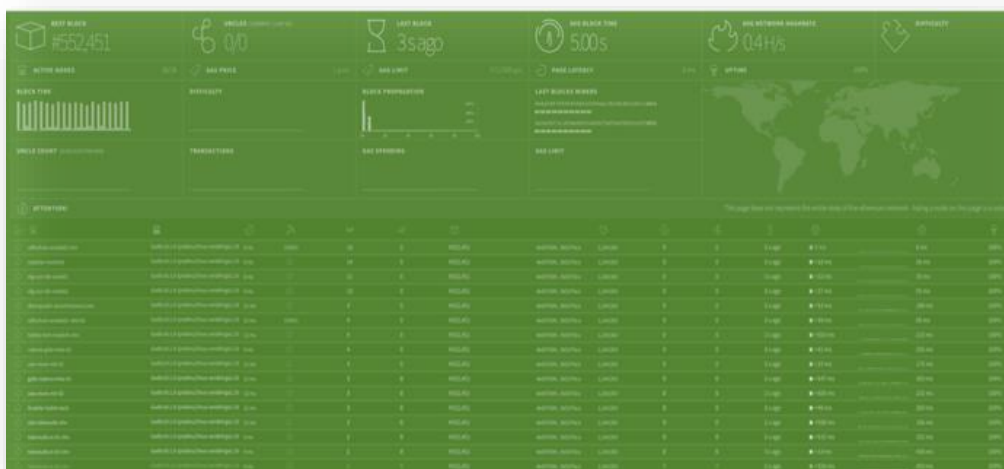
adhichain --adhi --datadir=node01 -- 127x24
INFO [11-12|14:54:40.805] RLPx listener up
c8ef40e4cb1ccaef88b3284720e0792f81bbbf7a27e4b151a3904d10acff2f951286a7481fceb3b010.230.176.173:30303
INFO [11-12|14:54:40.808] IPC endpoint opened
INFO [11-12|14:54:40.808] tcp - Start auxiliary services
INFO [11-12|14:55:10.813] Block synchronisation started
INFO [11-12|14:55:11.095] Imported new chain segment
number=502172 hash=36953b_507c48 cache=0.008 blocks=192 txs=0 mgas=0.000 elapsed=75.684ms mgasps=0.000 nu
INFO [11-12|14:55:11.370] Imported new chain segment
umber=502748 hash=fba6e9_8ea765 cache=0.008 blocks=576 txs=0 mgas=0.000 elapsed=257.927ms mgasps=0.000 n
INFO [11-12|14:55:12.180] Imported new chain segment
number=504668 hash=83ee8e_a20c9d cache=0.008 blocks=1920 txs=0 mgas=0.000 elapsed=779.428ms mgasps=0.000
INFO [11-12|14:55:13.305] Imported new chain segment
number=506716 hash=b2d478_df94e2 cache=0.008 blocks=2048 txs=0 mgas=0.000 elapsed=1.059s mgasps=0.000
INFO [11-12|14:55:14.367] Imported new chain segment
number=508764 hash=0c4fcb_71b77d cache=0.008 blocks=2048 txs=0 mgas=0.000 elapsed=975.884ms mgasps=0.000
INFO [11-12|14:55:15.353] Imported new chain segment
number=510812 hash=181318_0809aa cache=0.008 blocks=2048 txs=0 mgas=0.000 elapsed=900.793ms mgasps=0.000
INFO [11-12|14:55:16.163] Imported new chain segment
number=512860 hash=df8364_e669b5 cache=0.008 blocks=2048 txs=0 mgas=0.000 elapsed=759.430ms mgasps=0.000
INFO [11-12|14:55:16.854] Imported new chain segment
number=514908 hash=ea9e1b_6e873e cache=0.008 blocks=2048 txs=0 mgas=0.000 elapsed=641.320ms mgasps=0.000
INFO [11-12|14:55:17.518] Imported new chain segment
number=516956 hash=c3a4df_f765a3 cache=16.80kB blocks=2048 txs=5 mgas=2.950 elapsed=591.971ms mgasps=4.984
  
```

- Chain specific genesis, currency, holders and other configurations will be programmed in the genesis block of the chain.
- Proof of Authority consensus mechanism, the new consensus for Blockchain, where the miners selected and then allowed to mine.

Blockchain Monitor:

Blockchain Monitor is a web application for monitoring the following aspects:

- Health of the connected nodes and network
- Main nodes
- Miners
- Confirmation speed
- Synchronization status
- Latency between nodes



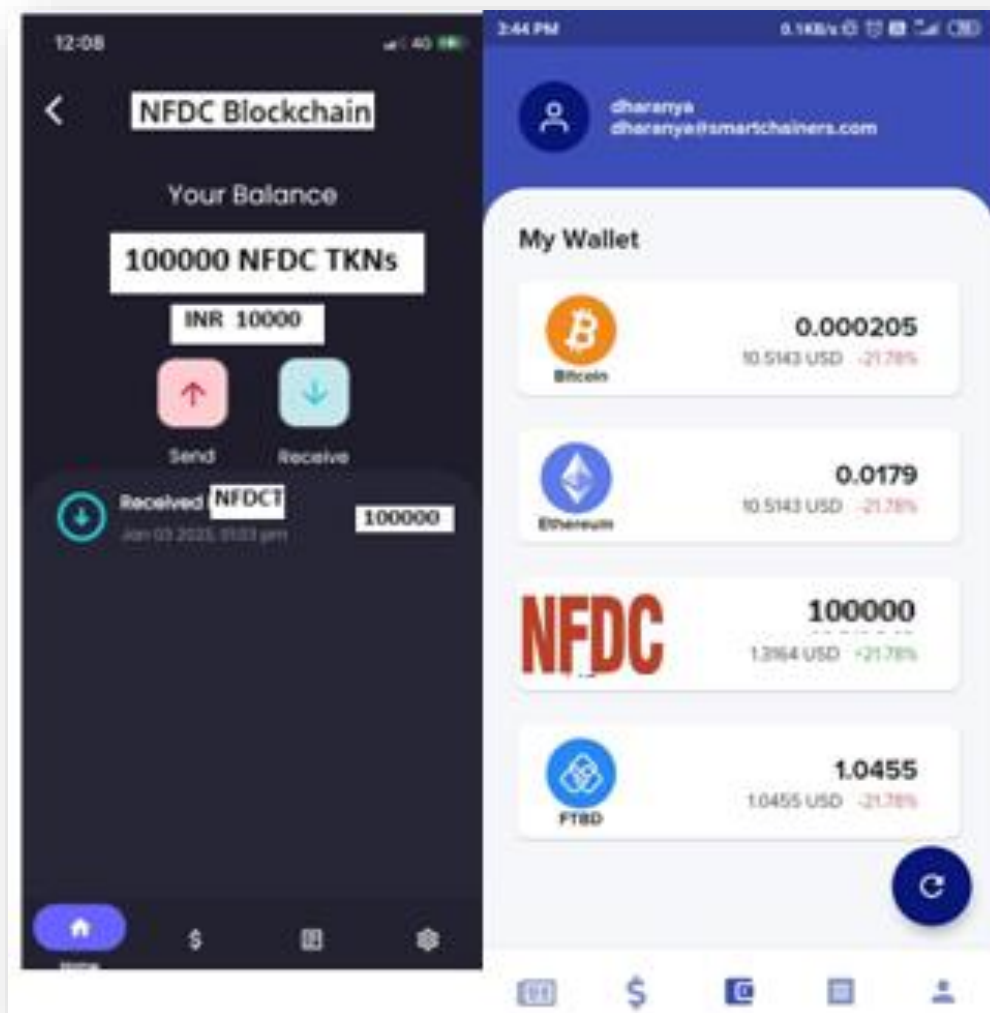
NFDC Blockchain Wallet:

Fully decentralized Blockchain wallet for managing digital assets, tokens, and NFTs from various chains including Ethereum, Polygon and NFDC & NFDC Tokens issued under ERC20 specifications.

The following features will be shown.

- Balance and Fiat value
- Send and Receive
- Recent transactions
- Multi chain coins
- Translations
- Dark, Light and system theme selector

The wallet will offer the on-chain ramp for converting fiat into NFDC Tokens on the Blockchain and vice versa.



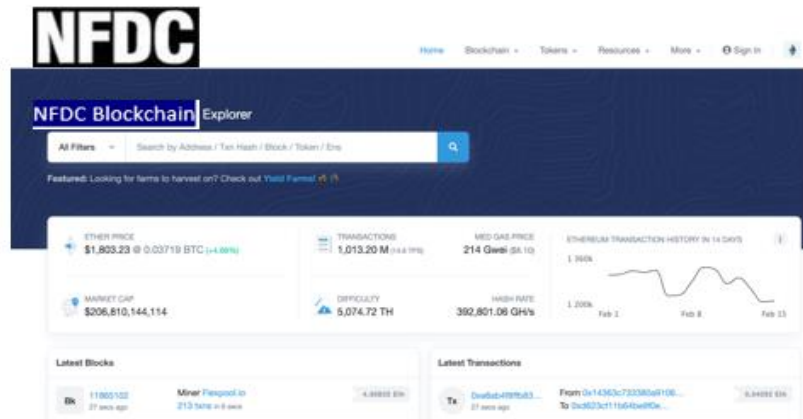
NFDC Blockchain wallet depiction – Screen shots

Blockchain Explorer

Blockchain Explorer is a web application that works with chain blockchain node and MongoDB to query the following

- Tokens
- Addresses
- Balances
- Blocks
- Transactions
- Tokens etc..

Example : Etherscan.io



Admin Dashboard:

Web Admin Dashboard will be implemented for managing the following

- Users Management
- Assets Dashboard
- Reports, Trends and Dashboards
- Blockchain Statistics
- TXN level queries in admin for Customer Support Team
- Loyalty Settings



Overall system flow..

System flow:

- Users sign up into the platform
- Purchases Asset or Lists Asset for Sale
- Admin reviews the assets submitted and approve for listing
- The Asset is available in the marketplace

System flow is depicted in the following diagram.

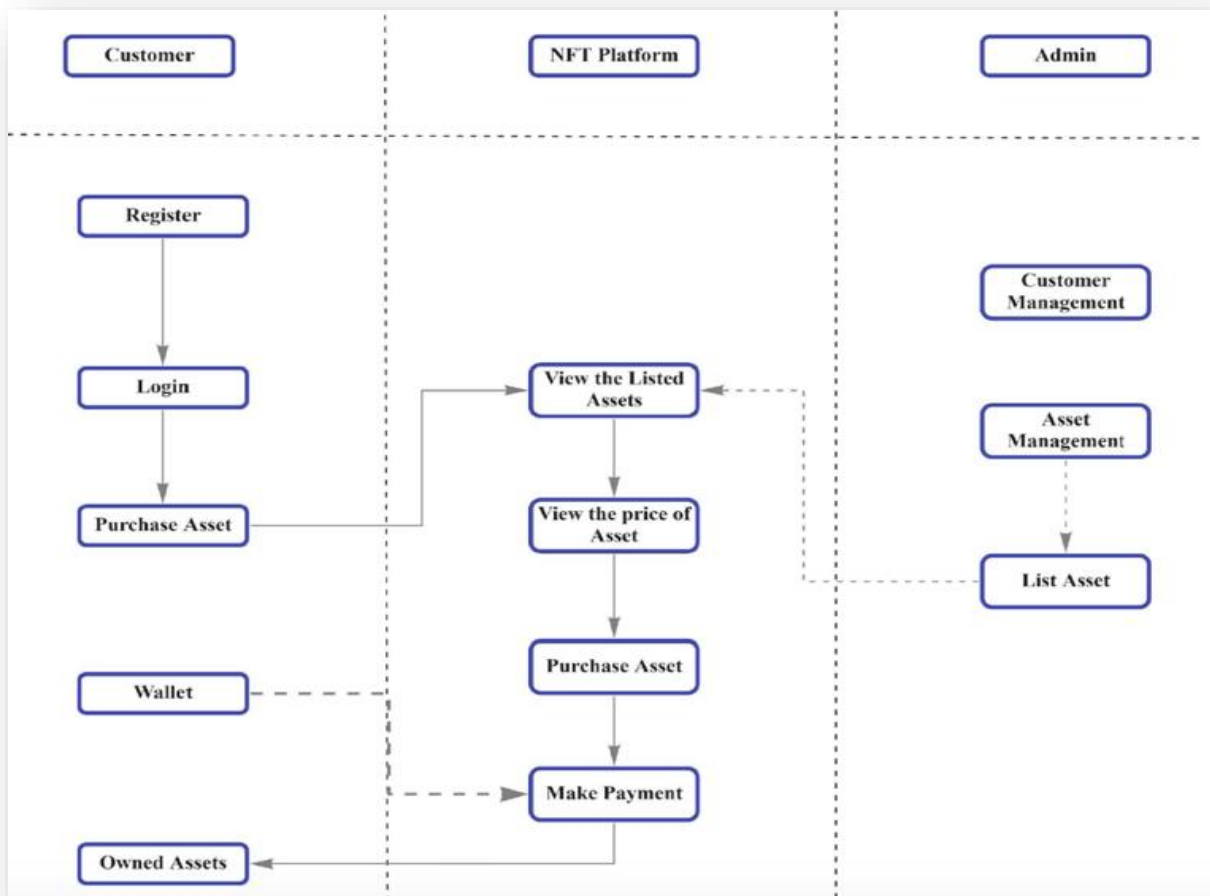


Fig: System flow for NFT process on NFDC Blockchain

Technical Architecture of NFDC Blockchain:

Web App Layer

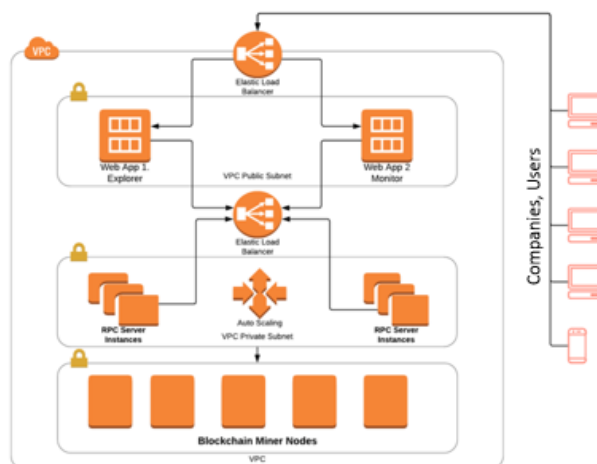
- RPC API validation
- Block Explorer
- Node Stats Monitor

Pre-Approved Trusted Authority approver (miner) nodes

Total : 5-7 servers

Servers Configuration

Ubuntu 18x
RAM 8-16 GB RAM
HDD 500GB SSD



Development Process/Cycle

- Wireframing - It will build the foundation of how the app needs to be designed and function.
- App Screen Design - Designing the app screens (front-end) for iOS, Android & Web.
- App Programming - Programming the app screens (front-end) for iOS, Android & (Backend) Web.
- Application / Database Framework - Setting up the application's server-side framework (cloud / back-end) and creating the database structure.
- Server-side App Programming - Writing all of the server-side code for implementing back-end functionality.
- APIs Development - Writing all of the APIs that connect the app screens to the server-side app & DB.
- Usability QA - Testing the app screens for bugs and fixing any issues.
- Multi-platforms, Multi-devices, OS versions, Resolutions QA - Testing the app on all different platforms iOS, Android & Web.
- Back-end QA Testing the back-end code for performance and security.
- Cloud Setup - Deploy the server-side application to the server / cloud.
- Submit to App Stores - Deploy the app to the App Stores.

Non-Functional Attributes

- Scalability – NFDC Lottery would be able to handle 1000 users at any given point of time & should be scalable on the fly.
- Privacy - Messages shared between users would be encrypted to maintain privacy.
- Performance - Application would be lightweight and would handle transactions instantly.
- Upgrade – Seamless upgrade from one version to the next version.
- Crash Report – Detailed Crash reports & other basic statistical data to be available for the admin.

Note:

- Blocked Edge shall develop the Software under this Agreement in the form of mobile applications (apps) which shall be capable of being hosted through Play Stores, individual websites or any third-party websites (authorized by NFDC) or other online medium, however hosting on the Play Store or App Store, requires the additional business and legal requirements to be fulfilled, which do not come under “Blocked Edge” deliverables.
- NFDC reserves the right to add, delete, substitute, and amend the Services or the Scope of Work during the Term of this Agreement with the prior written consent of “Blocked Edge”.

Security Management

Continuous Cloud Compliance

We facilitate to manage Security, Compliance, and routine operations on Cloud continuously with assisted compliance tools. This will guarantee continuous compliance and continuous security are adhered to industry standards at cloud infrastructure.

Data Security

When it comes to Data security is top priority. Whether at rest or in motion we have the solutions to help ensure the data is protected and meets the most stringent security compliance and regulations.

Identity and Access Control

Our team will help in running and operate the entire user provisioning, access management and governance reporting solutions across private, hybrid and public clouds.

Quantitative risk assessment

A quantitative risk and impact assessment framework will be presented by us, to assess the security risks associated with cloud computing platforms.

Security Review and Audit

We audit the hosted AWS environment quarterly and confirm if this is aligned to the cloud security best practices and publish the report.

Phase 2 – Technical training

Blockededge shall provide technical training to NFDC's employees with respect to the use of the Software at no additional costs to NFDC ("Training Period"). All training that Blockededge is required to provide hereunder shall be performed at such locations and at such times as are mutually agreed to by the Parties hereto.

Upon the expiration of the Training Period and following NFDC's request, Blockededge will provide any support services necessary for NFDC's continued use of the Software. Such services will be performed on a time and material basis at Blockededge 's then current hourly rates for such services.

Phase 3 - Managed services and continuous support

Our Managed Services team will manage and monitor the customer infrastructure on the AWS cloud in a shared and dedicated delivery model. The service levels of monitoring and management will be delivered as per the defined SLA metrics below in this document. Below are the areas that will be covered under the Managed Services Scope:



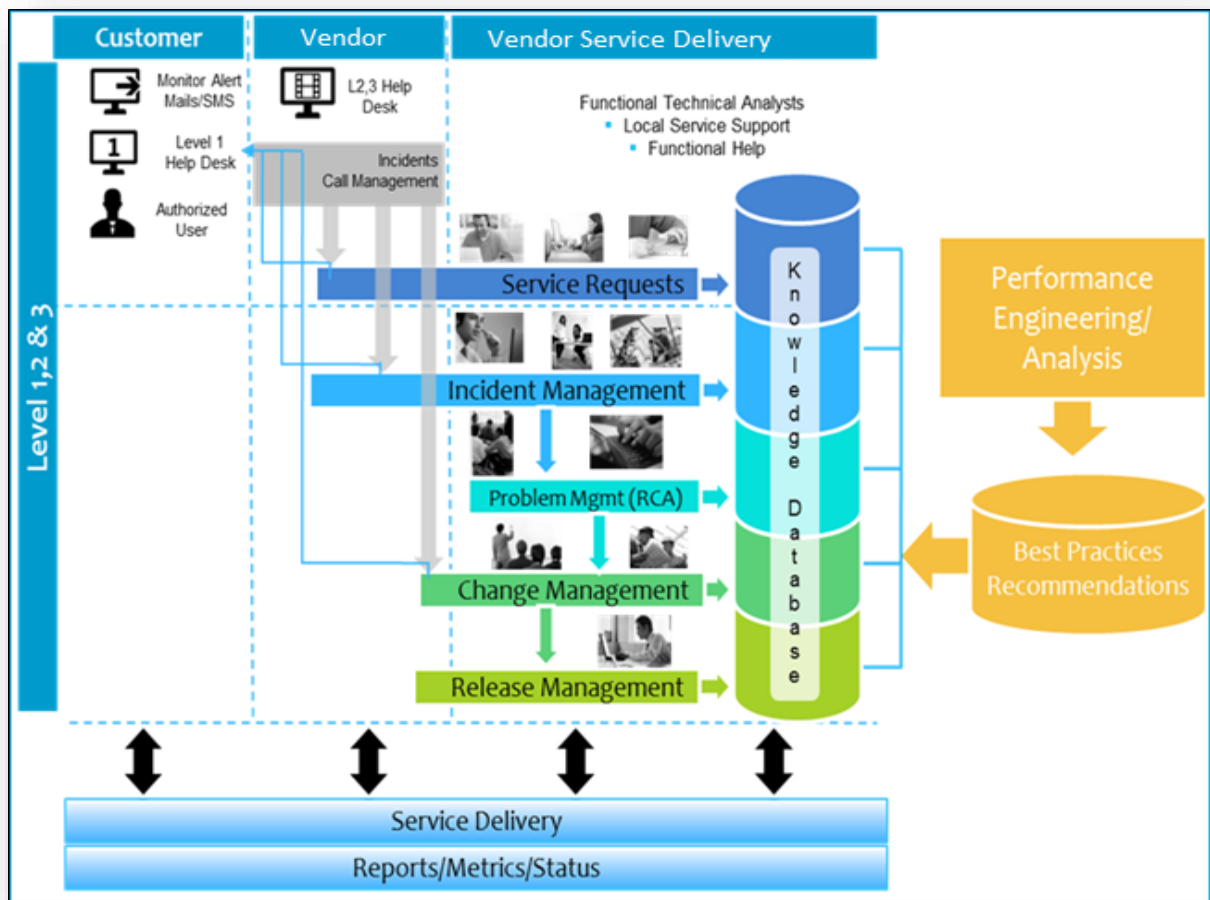
Managed Services Activities

Our monitoring team will monitor and manage the infrastructure objects and services from the 24x7 Network Operations Centre.

- Monitor the Infrastructure elements via the preferred monitoring tool 24x7.
- Validate the alert based on the defined procedures.
- Record incidents in the ticket management system.
- Acknowledge and notify the alerts to the respective stake holders.
- Troubleshoot and restore availability as per defined SLA.
- Track escalated calls to AWS and record them in the ticketing system.
- Confirm resolution and close Incidents.

Managed Services Support Workflow

The managed services support workflow is given below:



Delivery timelines

Phase	Description	Duration
Phase 1	Application development, implementation and hosting	20-24 weeks*
Phase 2	Technical training	2-3 weeks from date of implementation
Phase 3	Managed services and continuous support	24 months

* Effort would extend by another 2 - 4 weeks for any additional use-cases.

Term

Initial term of the agreement will be for a period of Twenty-four (24) months and will be automatically renewed for a further period of Twenty-four (24) months, unless terminated through a written communication. Either party may terminate this agreement upon not less than Three (3) months' written notice to the other party. All dues pending Invoices from either side must be settled as mentioned in the contract.

Pricing proposal

This proposal is essentially based on an initial assessment of needs of this project as per our understanding and approach described above. Blocked Edge believes in providing value for its services and hence charges fees commensurate with its effort and its value proposition. Blocked Edge offers the fixed price model for this project and will take complete responsibility for the design, development and delivery/deployment of all components of the project. However, Blocked Edge is open to customised payment terms including revenue sharing of 25% on the value unlocked by implementing the NFDC Blockchain strategy over and above a nominal fee of One crore & fifty lakhs Rupees exclusive of GST.

The following table gives the itemised costing for developing the components of the Blockchain platform depicted in the proposal.

S. No.	Proposal Item	Duration	Total Cost (INR)
1.	Development of Ticketing Permissioned Blockchain with following components <ul style="list-style-type: none"> Blockchain Core Engine Block Explorer Block Monitor 	2 Months	3,00,00,000
2.	Development of Web market place for the companies to issue NFT, Sell, Manage, Secondary Sale	2 Months	80,00,000
3.	Development of Web admin portal for managing customers, Users and Tickets, Configurations and Dashboard		20,00,000
4.	Development of decentralized Blockchain wallet	1 Month	50,00,000
5.	Copyrights Record DAPP	1 Months	50,00,000
	TOTAL (Total project duration : 4 Months)		5,00,00,000

Please note: The above costing is exclusive of GST, Technical Infrastructure costs and any other components not depicted herein.

- Any other expenses related to infrastructure deployment in premises & cloud, travel and related incidental expenses will be incurred by NFDC at actuals.
- The above fee shall be payable within 10 days from the date of Invoice. If NFDC fails to make the payment within the above-mentioned timelines, then Blocked Edge shall suspend the services until such payment is made.

Payment Terms:

S. No.	Payment Milestone	%	INR (excl GST)
1.	Advance on project kick off	25%	1,25,00,000
2.	Completion of NFDC Blockchain demo	25%	1,25,00,000
3.	Completion of NFT Marketplace and Admin	25%	1,25,00,000
4.	Completion of NFDC Wallet and Copyrights DAPP	25%	1,25,00,000
	TOTAL		5,00,00,000

Other terms and conditions

Warranties and representations of Blocked Edge

- Blocked Edge shall accept NFDC's requests for changes with reasonable efforts to incorporate minor changes to the Scope of Work as they arise with mutual agreement. Blocked Edge shall keep NFDC informed of any event or delays likely to affect delivery dates and shall use its best endeavors to avoid or reduce the effect of any delays.
- Blocked Edge represents and warrants that it is authorized to offer the Services to NFDC. Blocked Edge warrants that it meets the requirements and specifications as agreed between the Blocked Edge and NFDC.
- Blocked Edge confirms that it has the necessary subject matter expertise and technical capabilities in providing the Services and can fulfill its obligations effectively and can provide customized Services as per NFDC's requirements.
- Blocked Edge confirms that it shall provide the Services in a professional manner, consistent with reasonable industry standards and in compliance with all applicable laws, rules and regulations and shall be free from development or workmanship defects.
- Blocked Edge represents that there is no pending litigation or any claim by any third party relating to infringement or misuse or unauthorized use of technology or know-how or intellectual property rights or proprietary rights, or trade secrets related to the Services which Blocked Edge agrees to provide to NFDC as agreed in this Agreement.
- Blocked Edge warrants that the Services shall not violate any proprietary rights or intellectual property rights of any third parties.
- Blocked Edge reserves the right during the Term of this Agreement to authorize third parties, employees, staff, contractors, and consultants, experts to develop the whole or any part of the Services. Blocked Edge agrees to submit their credentials to NFDC prior to their appointment or engagement for providing the whole or any part of the Services of this Agreement.
- Blocked Edge shall provide the list of the third-party software or licenses or rights to NFDC including the draft agreements or arrangements that have been executed to avail such licenses or rights that are required to perform the Services in this agreement. Blocked Edge shall duly provide the details of the third parties or its associated entities along with the draft agreements or arrangements to NFDC that are likely to be entered into by Blocked Edge with such third parties or its associated entities. Only upon NFDC approving the same, Blocked Edge shall enter into such agreements or arrangements.
- Only after NFDC approving the same, Blocked Edge shall procure and obtain the consent from third party software or right holder(s) or licensors. Blocked Edge shall enter into proper agreements and ensure that that such agreements entered with third parties that offer the required software or rights or licenses do not have any clauses that have any conditions or obligations that affect NFDC in any manner whatsoever including the ownership rights of the Services or lay any onerous obligation on NFDC which affects the use of the Services availed herein. The costs of the third-party software shall be borne by NFDC.

- Blockedge shall clearly mention in the agreement or arrangements entered into by it with all third parties and or its associated entities from whom Blockedge avails support or products or services of all kinds for the performance of this Agreement, that NFDC herein shall be the absolute and sole owner of the Services and all licenses or rights that are used under this Agreement from the respective third parties and or its associates entities which are utilized in the Services shall not in any way disturb or prevent NFDC from using the Services or lay claim or impose any undue restrictions against NFDC.
- Blockedge shall ensure that it shall inform all its personnel who include employees, staff, contractors, consultants or experts or third parties engaged by it for providing the Services shall at all times be considered as the employees of Blockedge. NFDC is not responsible for any claim from such personnel engaged by Blockedge.
- Blockedge warrants that the Software will not infringe upon any copyright, patent, trade secret or other intellectual property interest of any third party. Blockedge will indemnify and hold NFDC harmless from and against all such infringement claims, losses, suits and damages including, but not limited to, attorney's fees and costs, and shall promptly following any bona-fide claim of infringement correct the Software so as not to be infringing, or secure at its own expense the right of NFDC to use the Software without infringement.
- Blockedge warrants that for a period of twelve (12) months from the date of official successful handing over of the Services, [Warranty Period hereinafter], the Software will operate substantially according to NFDC's specifications. In the event of any Software issue or error Blockedge agrees to rectify the issue or error free of cost. Blockedge agrees not to claim any extra fees in such rectification process.
- **Use of Artificial Intelligence and Advanced Technologies:** Blockedge shall deploy Artificial Intelligence (AI) and other new emerging and advanced technologies in the Software to meet NFDC's specifications and requirements. Blockedge shall adhere to the internationally recognized best practices and incorporate industry-standard algorithms and protocols that ensure the game's fairness while protecting it from any manipulation or tampering. Blockedge shall ensure that the Software does not contain any hidden threats or vulnerabilities. Blockedge shall assist NFDC in obtaining No BOT Certification and Random number generation certification for the Software in the name of NFDC and the cost for the same will be borne by NFDC.
- Blockedge agrees that the lottery related games are jurisdiction specific and are governed by specific laws in various jurisdictions. Blockedge agrees to provide the Software to enable NFDC offer the online lottery games in specific regions/ States of the Indian Territory and countries across the globe (where it is lottery games are legally permitted and NFDC is licensed to offer such games). Blockedge shall enable and develop the Software to fit with this requirement.
- Blockedge shall not raise any right or claim or ownership or sharing of rights or rights of any kind over the Services. Blockedge agrees that the consideration paid under this Agreement shall be full and final consideration and shall not lay any claim in the future against NFDC.
- Blockedge shall not use or modify or authorize any third party to use or modify the Software in any manner whatsoever, whether during or after the completion of the Services without NFDC's express written consent including working on software patches. If NFDC becomes aware that Blockedge has breach this condition, then

NFDC is entitled to withhold any payments due to BLOCKEDGE and also take any other necessary action against Blocked Edge and or the concerned third party to protect its interest in the Software.

Standard of care and errors

Except as set forth in this Agreement, Blocked Edge's sole responsibility to NFDC with respect to errors and delays in performing the Services hereunder are as follows:

- I. for any of the omissions in Services, shall be to furnish correct information and/or adjustment in the Services, at no additional cost or expense to NFDC; provided, NFDC must promptly advise Blocked Edge of any such omissions of which NFDC becomes aware after having used reasonable efforts to detect any such omissions, within the Agreement period; and
- II. for failure to deliver any Services shall be to use reasonable efforts, subject to the other provisions hereof, to make the Services available and/or to resume performing the Services as promptly as reasonably practicable.

Mutual cooperation between parties

The Parties will use good faith efforts to cooperate with each other in all matters relating to the provision and receipt of the Services under this Agreement. Such cooperation shall include exchanging information, performing reconciliations and adjustments, and, upon request, obtaining all third-party consents which include, licenses, sub licenses or approvals necessary to permit "Blocked Edge" to perform its obligations hereunder (including, rights to use third party software needed for the performance of the Services.

Modifications in Services

If NFDC requests such a change in the Services, Blocked Edge will use its best efforts to implement the requested change at no additional expense to NFDC and without delaying delivery of the Services. In the event that the proposed change will, in the reasonable opinion of Blocked Edge, require a delay in delivery of the Services or would result in additional expense to NFDC, then NFDC shall, in its discretion, elect either to withdraw its proposed change or require Blocked Edge to deliver the Services with the proposed change and subject to the delay and/or additional expense, borne by NFDC.

Assistance in Software Deployment and launch

Blocked Edge also undertakes to assist NFDC in the software deployment for use and shall remain legally obligated under this Agreement to assist NFDC till the software is launched in the public domain for enabling the general public play the games. The costs for rectifying the software patches or minor modifications to the software till the expiry of this Agreement or the launch of the product in the public domain (whichever is later) shall be borne by Blocked Edge free of cost.

Rights and Ownership

- Both the Parties mutually agree that the consideration mentioned in this Agreement is full and final consideration agreed by Blocked Edge to provide the sum total of the Services agreed under this Agreement. Both Parties mutually agree that NFDC shall be the sole and absolute owner of the Services including its upgraded, modified, localized or translated versions of the Software made under this Agreement.

Blocked Edge will retain its ownership rights on all the frameworks and reusable modules used for this project.

- Blocked Edge agrees that NFDC shall be the sole owner of the Services and is entitled to its full and uninterrupted enjoyment, use and NFDC has all rights and powers to transfer or assign or license or sell or mortgage the Software or the Services in any form, including, without limitation, human- and machine-readable forms, source and object code forms, magnetically recorded forms such as cassettes, tapes and disks, and solid state forms such as read-only memories, the Services or any of its part to any associated entities or third parties or perform any other act with the Services at its will.
- Blocked Edge agrees not to raise any claim or objection regarding the Services including the Software that are being sold during or after the term of this Agreement. Blocked Edge shall not claim any royalties or other rights in any manner whatsoever from NFDC for the Software or Services or any other derivative products or services derived therefrom. Blocked Edge shall not claim any sharing of profits from NFDC's business of the Software or the Services including not limited to its marketing or distribution or publishing rights and its profits. Blocked Edge agrees and undertakes to ensure use licenses authorized by third parties in the development of the Software and provision of Services (wherever licenses are required). Blocked Edge shall provide the details of the licenses that are used in developing the software to NFDC as and when the said license is used or deployed during the course of Services and Software development. Blocked Edge undertakes to inform NFDC on the validity period of the license and provide necessary details of the third party to enable NFDC approach the concerned third party for continued use of the license in the future. Blocked Edge agrees that NFDC gets an absolute ownership right on the Software and there are no restrictions from the third parties.

Ownership of Intellectual Property

Both Parties agree that all intellectual property rights in existence at present or in the future in the original and/or localized form of the games, and all related parts, the game engine, Software at NFDC's Terminal, Software at Server, contents of related files (including any upgraded and/or modified versions and all related IP rights thereof), shall belong to NFDC only and NFDC shall have the exclusive right to protection thereof. NFDC shall register the Software and all its future versions and upgrades for its exclusive ownership and also obtain intellectual property rights in its name or in the name of its associated entities from the appropriate government bodies or agencies. Blocked Edge shall not raise any objection to the same.

Indemnification

- Both Parties shall, to the extent permitted under the law, defend, indemnify and hold harmless each other from and against any and all claims, losses, causes of action, judgments, damages and expenses to the extent caused by the negligent actions or omissions of another, its employees, officers, or agents for which the indemnifying Party would be liable in law or equity.
- Blocked Edge shall defend and indemnify NFDC against any losses, costs, expenses, or damages incurred by NFDC (including legal fees) against claims, demands or legal proceedings instituted against NFDC by a third party, arising out of a claim by a third

party that the Services or Software violate that third party's intellectual property rights or any rights including but not limited to ownership or licensing or proprietary rights in India and across the world irrespective of the territorial jurisdiction or applicable law. Both Parties mutually agree that since the Services or the Software will be permanently used and owned by NFDC, and NFDC may in its sole discretion seek Blocked Edge to (a) modify the Software so as to avoid infringement; (b) procure the right from third parties for NFDC to continue to use the Software.

- Both Parties mutually agree to promptly notify each other on receipt of any claim raised by any third party in respect of the Software or Services. Blocked Edge being specifically engaged in this Agreement to provide the Services including Software to NFDC undertakes to defend and settle the claims at its own costs of litigation and settlement including but not limited to all expenses, losses, costs, deficiencies, liabilities, damages, attorney fees, court fees and fees paid towards any settlement and final settlement claims raised by third parties. NFDC agrees to provide all reasonable assistance to Blocked Edge as may be required.
- NFDC shall not indemnify Blocked Edge against any third claims or actions including but not limited to and all kinds of legal actions and litigations if (i) Blocked Edge has acted with gross negligence or fraudulent or intentional misconduct, or Blocked Edge has used software or any licenses or rights of third parties unauthorizedly or in contravention to the authorization granted by the third parties to Blocked Edge (ii) the acts of Blocked Edge is not authorized by NFDC for which written consent or authorization is required from the authorized person of NFDC under this Agreement or Blocked Edge acts in a manner which is violative of the terms of this Agreement.

Breach and liability of Blocked Edge

Both the Parties mutually agree that time is the essence of this Agreement. Blocked Edge agrees that any delay unless caused due to *force majeure* reasons (mentioned in this Agreement), will cause loss to NFDC and its business. Blocked Edge undertakes to provide the services agreed herein in the time as agreed in this Agreement. The liability of Blocked Edge for any breach committed within the Scope of Work under this Agreement and for additional works performed that are outside the Scope of Work of this Agreement are outlined below separately:

(a) Within the Scope of Work: Both Parties mutually agree that in case of any breach committed in the Scope of Work by Blocked Edge, NFDC shall, by way of written notice (by letter or email), notify the said breach to Blocked Edge and grant a specific time to cure or remedy the breach. Suppose Blocked Edge fails to cure or remedy the breach within the time specified in the notice, in that case, NFDC is entitled to stop all further payments to Blocked Edge and also claim the payments earlier made with interest at the rate of 18% per annum till the date of realization of the amount. Both Parties mutually agree that in addition to the above, NFDC is entitled to terminate the Services of Blocked Edge partially or completely and or engage any other software development service provider to continue developing the Software. Blocked Edge agrees it shall not object to the same and shall fulfil its indemnity obligations mentioned in this Agreement.

(b) Outside the Scope of Work: Both the Parties mutually agree that *(either during the development of the Software or after the successful completion and handing over of the Software or post launch of the Software)* any additional work including adding new functionalities or features or modifications may be required to be carried out in the Software for its better utilization by NFDC. Such additional work may not have been covered under the Scope of Work in this Agreement. Both the Parties shall mutually agree in writing (by way of letters or any separate agreement) on carrying out of such additional work and the timeline in

which it shall be completed. Both the Parties shall mutually agree such written understanding will necessarily form part and parcel of this Agreement and is enforceable. Both Parties mutually agree that in case of any breach committed by Blocked Edge in such additional work, NFDC shall, by way of written notice (by letter or email), notify the said breach to Blocked Edge and grant a specific time to cure or remedy the breach. Suppose Blocked Edge fails to cure or remedy the breach within the time specified in the notice, in that case, NFDC is entitled to stop all further payments to Blocked Edge (if any) and also claim the earlier payments made towards the additional work only with interest at the rate of 18% per annum till the date of realization of the amount. Both Parties mutually agree that in addition to the above, NFDC is entitled to terminate the services of Blocked Edge partially or completely and or engage any other software development service provider to complete the additional work. Blocked Edge agrees it shall not object to the same and shall fulfil its indemnity obligations mentioned in this Agreement.

Termination

Each Party shall have the right to terminate this Agreement for any material breach of the terms of this Agreement and also for other causes mentioned below:

- I. A Party's bankruptcy or insolvency; and / or
- II. A Party is convicted of a felony, or any criminal misconduct related to operation of its Business; and / or
- III. A Party discovers a material misrepresentation made by the other Party in connection with this Agreement; and / or
- IV. A Party engages in any behaviour which would impair or put in risk the other intellectual property or trade secrets or confidential information; and / or
- V. A Party behaves in any manner which would reflect poorly on the reputation and goodwill of the other Party; and / or
- VI. NFDC fails to pay any fees, costs, charges, or other amounts due under this Agreement; and / or
- VII. Blocked Edge fails to fulfill any of its obligations including providing the Software in the timeline as stipulated in this Agreement or failing to adhere to any terms as agreed in this Agreement.

The Party in default must be given 20 days written notice of termination in advance of such termination and the notice must state the reasons for termination clearly. Further the defaulting Party shall have an opportunity to cure its default within a period of 15 days from the date of notice of termination, failing which the Agreement may be terminated immediately by the non-defaulting Party.

Rights and Obligations on Termination

In the event this Agreement is terminated as specified in the termination clause above, or under any other clause of this Agreement, the parties hereby agree to undertake the following acts:

- If there are any payments for products / services owed to Blocked Edge, at the termination of this Agreement, NFDC shall pay them immediately.
- Notwithstanding (a) above, NFDC shall not pay any amount towards services or work that has not been performed or delivered by Blocked Edge to NFDC. In such case, it is the duty of Blocked Edge to submit proof that it had performed the services or work or delivered the same to NFDC along with its bill or claim.

- If Blocked Edge performs one part of the Services and failed to perform any other or remaining part of it, thereby the Services is not fully completed, then NFDC is entitled to withhold the entire remaining payments due to Blocked Edge. This remedy is in addition to other remedies available under this Agreement and is not the only remedy available to NFDC. NFDC is entitled to all necessary actions including the right to invoke “Breach and Liquidated Damages” clause and issue notice to the Blocked Edge to remedy the breach or call upon Blocked Edge perform the remaining part of the Services.
- Notwithstanding anything contrary to the terms of this Agreement, NFDC shall pay any remaining amount only after the successful provision of the Services and Software as agreed in this Agreement to NFDC. NFDC is entitled to withhold any payment till the Services and Software are completely provided by Blocked Edge to NFDC.
- In the event of early termination due to Blocked Edge 's default or the death or disability or leaving of the services of any personnel of Blocked Edge engaged for the Services, Blocked Edge agrees to deliver the Software then completed. Upon delivery of such completed portion, NFDC shall pay Blocked Edge the payment for such completed portion only.
- Notwithstanding anything to the contrary, in case of earlier termination of this Agreement for any reason, Blocked Edge agrees to handover or return the Software (whether completed or not) and all products and confidential information to NFDC irrespective of whether any payment is due from NFDC or not.

Confidentiality

Both Parties acknowledge that the existence and the terms of this Agreement and any oral or written information exchanged between the Parties in connection with the preparation and performance of this Agreement are regarded as confidential information. For the purpose of this Agreement, Confidential Information means all information relating to NFDC's or Blocked Edge's business (financial, technical and operational information and plans), including but not limited to unreleased information regarding the lottery game, related technology and specific applications, arrangements with any individual or third parties, software programs and codings and financial information of NFDC or Blocked Edge.

Return or Destruction of Confidential Information

- After expiration or termination of this Agreement for whatever reason, both Parties shall return to each other all Confidential Information specified in this Agreement, including but not limited to computer or laptops or hard disks, handbooks, correspondence, notebooks, reports, advertising language, promotion materials, and other materials relating to the other Party (including copies thereof). This provision shall survive the termination of this Agreement.
- Each Party shall maintain confidentiality of all such confidential information of the other Party and it shall not disclose any relevant confidential information to any third parties, except for the information that: (a) is already available in the public domain (other than through the receiving Party's unauthorized disclosure); (b) is under the obligation to be disclosed pursuant to the applicable laws or regulations, or orders of the court or other government authorities.

- Blocked edge undertakes to include necessary confidentiality and non-disclosure clauses in the agreements with its employees, staff, contractors, consultants and all third parties to protect NFDC's confidential information.

Force Majeure

Blocked edge will be excused for any failure or delay in performing any of its obligations under this Agreement if such failure or delay is caused by Force Majeure. "Force Majeure" means any act of God or the public enemy, any accident, explosion, fire, storm, earthquake, flood, strike, pandemic, epidemic, computer outage or virus, telecommunications failure or any other circumstance or event beyond Blocked edge's reasonable control.

Miscellaneous

(a) Independent Contractor

Nothing herein shall be construed or deemed to create a joint venture, contract of employment or partnership. Both Parties mutually agree that Blocked edge acts only as an independent contractor under this Agreement.

(b) Headings

All article and section headings in this Agreement are for convenience only and shall not be deemed to control or affect the meaning or construction of any provisions hereof.

(c) Binding Effect

This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

(d) Integration

This Agreement constitutes the entire agreement between the parties pertaining to the subject matter hereof and supersedes all prior agreements and understandings, oral or written, pertaining thereto.

(e) Counterparts

This Agreement may be executed in any number of counterparts, all of which together shall constitute one agreement binding on the parties hereto.

(f) Severability

In the event any provision of this Agreement is held to be invalid or unenforceable, the valid or enforceable portion thereof and the remaining provisions of this Agreement will remain in full force and effect.

(g) Survival

The representations, warranties and indemnities stated in this Agreement shall survive the expiration or termination of this Agreement.

(h) Amendments

This Agreement may not be amended or modified, nor may any provision hereof be waived, other than by a written instrument signed by the parties hereto.

(i) No Waiver

Failure by either party hereto to enforce at any time or for any period of time and any provision or right hereunder shall not constitute a waiver of such provision or of the right of such party thereafter to enforce each and every such provision.

(j) Assignment

Either party hereto shall have the right to assign this Agreement to any third party with the prior written consent of the other party. However, both Parties agree that in such circumstances, the party assigning this Agreement shall ensure that the new entity accepts all the terms and conditions of this Agreement.

(k) Notices

Any notice, request, consent, or communication (collectively a "Notice") under this Agreement shall be effective only if it is in writing and sent by Registered Post with Acknowledgement Due to the address or email mentioned below in this clause. Either Party can change their address for communication and emails by notifying the other Party.

Address of NFDC:.....

.....

Email:

Address of Blocked Edge:.....

.....

Email:

(l) Dispute Resolution

Both Parties shall make reasonable and fair efforts to resolve all disputes amicably, hereto failing which the following shall apply:

- The courts in Chennai, India shall have exclusive jurisdiction over any dispute, differences or claims arising out of this Agreement.
- If either Party employs attorneys to enforce any rights arising out of or relating to this Agreement, the prevailing Party shall be entitled to recover reasonable costs, any expert fees and attorneys' fees.

(m) Applicable Law

This Agreement shall be governed by and construed and enforced in accordance the laws of India, without giving effect to its principles of conflicts of laws.

Project Contacts

Blocked Edge Technologies Inc.,	NFDC
Contact Person: Mr. Srinivas M	Contact Person:
Email: srini.mahankali@securecloud.com	Email id:
Phone Number: +91 9000228999	Phone Number:

