

# SAMSUNG SDS

Realize your vision

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# SAMSUNG SDS

## Nexledger



# Blockchain Technology, Core Infrastructure of the 4<sup>th</sup> Industrial Revolution

As a core technology of the 4<sup>th</sup> industrial revolution, the application of Blockchain is bringing disruptive changes across various industries.

Blockchain technology is enabling a paradigm shift for transferring of value and data management. In addition to enhancing existing business process and legacy systems, its application will be expanded to innovate core systems and create new business models.

For enterprises to adapt blockchain technology, the blockchain platform requires features such as high performance, scalability and monitoring features.

However, it is not easy for an individual enterprise to directly choose a suitable blockchain technology and effectively implement its use case into an actual production.

Thus, it is crucial to choose Blockchain technology that suits your business needs and enables easy implementation.

## SAMSUNG SDS Nexledger

**Samsung SDS Nexledger is fast, scalable, safe and easy to use blockchain platform optimized for your business needs.**

**Nexledger integrates various distributed consensus algorithms for blockchain to provide the standardized service API.**

**Now, you can focus on creating business values without worrying about choosing consensus algorithms.**





# Enterprise Blockchain Platform Optimized for Industry Specific Environment

**Nexledger is a flexible and scalable distributed ledger platform with ability to deliver wide spectrum of customizable use case applications based on enterprise/industry specific requirements.**



## An Enterprise Oriented Platform

Nexledger provides a high level of performance and management/ monitoring feature, ensuring easy and secure blockchain system with standardized service API.

Nexledger's scalability is free of limitations in industry, channel, and location. Upon system application, it enables prompt and efficient services.



## Optimal Blockchain for Business Needs

Nexledger integrates existing blockchain technologies widely used in the market and Samsung SDS's own consensus algorithm to provide a variety of blockchain cores (Nexledger N/H/E).

The blockchain technology fit for customer needs is chosen to configure the optimal blockchain system. Users can easily and flexibly change the blockchain core on demand.



## Implementation/ Consulting Methodology

Samsung SDS owns the know-how to apply accumulated blockchain use cases through various global applications.

In addition to building an efficient blockchain system, potential business innovation opportunities can be found and presented through application methodologies (BVA, Blockchain Value Assessment).

## Key Functions

### Application of Various Blockchain Technologies

#### Nexledger N

A Blockchain core based on SDS's exceptional consensus algorithm or Nexledger Consensus Algorithm(NCA), which combines strengths of various open sourced blockchain engines. It provides high scalability and is efficient in value transactions such as point payment system.

#### Nexledger H

A blockchain core based on Hyperledger Fabric with application of CFT (Crash Fault Tolerance) consensus algorithm. It is ideal for business implementation between pre-defined participants.

#### Nexledger E

A blockchain core based on Ethereum and operates according to PoA (Proof of Authority) consensus algorithm. It has a high application effect especially in services with a high volume of smart contract applications.

### Implementation of Services via Standardized APIs

#### Core Service API

Nexledger provides eight common Core Service APIs. Customers can utilize these APIs to realize desired services with minimum effort.

- Digital Stamping: verifies authenticity with time stamps.
- Point: creates, charges, uses, and transfer points.
- Anchoring: registers and views data in other Blockchains.
- History: manages history data of IoT devices, vehicles, etc.
- Identity: registers, views, modifies, and deletes digital credentials.
- SSO: registers and inquires authentication tokens for Single Sign On.
- Certificate: registers, views, modifies, and deletes certifications.
- FIDO: manages history of biometric authentication.

#### Specific Service API

Apart from the common Core Service APIs, it also provides standardized APIs based on the unique features of each Blockchain core (Nexledger N/N/E). Users can develop new Blockchain services using these APIs.

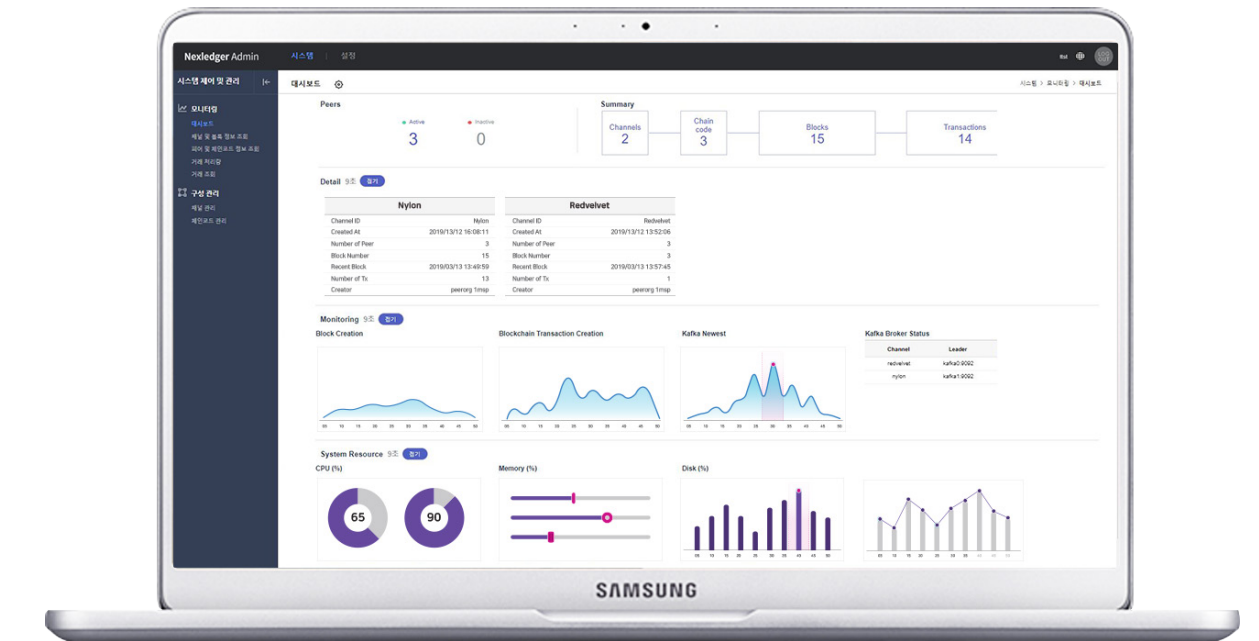
### Highly Efficient and Scalable Blockchain for Commercial Use

Nexledger can be applied in a variety of industries, building a broader business ecosystem.

Nexledger supports real-time configurations such as load balancing and horizontal scaling. It is a highly flexible platform securing its performance even after when new nodes are added.

Nexledger Accelerator is a proprietary technology developed by Samsung SDS to boost speed of blockchain transactions. This value added feature can be deployed in front of the Hyperledger Fabric network and connect to peer nodes without any modification on Hyperledger Fabric.

According to our evaluation and assessment, Accelerator can bring up to 10 times faster transaction per second performance.





# Maximize the value of the blockchain by implementing optimized application for your business

## Reference-based Implementation

With SDS's Blockchain application methodology that has been verified by various clients, analyze the characteristics of client's IT environment and services and accurately identify areas where Blockchain application is required.

Using pre-defined standard APIs without learning about complex blockchain mechanisms, Nexledger enables easy implementation of desired services and applications.

As a result, the initial cost of learning and introducing new technology can be significantly reduced.

## Optimal blockchain technology by business cases

There are various types of blockchain platforms on the market. Each blockchain platform has pros and cons depending on the transaction processing method and consensus algorithm.

Nexledger provides an outstanding selection of representative blockchain technologies suitable for business application. Customers can choose the right blockchain core optimized for their business cases, maximizing its advantages.

Nexledger can also be compatible with other platforms.

## Improvement of Business Efficiency and Stability

Nexledger is fully equipped with characteristics of blockchain such as P2P-basis and high level of security guaranteeing business efficiency and stability.

Use of a mutually reliable distributed ledger can also improve cost efficiency by replacing manual labor and reducing human error.

In addition, it eliminates the risk of service disruption and data forgery, significantly improving security and operational stability.



## Use Cases

# Unleash the potentials of Nexledger



### Digital Timestamp

The validity of digital assets can be easily verified via digital timestamp which reduces operation cost and the risk of service disruption.

Business Use-Case  
「Document management system for credit card company (2017)」

### Digital Payment

Transferring of value can be easily achieved via digital payment which reduces transaction cost, improves efficiency and promotes expansion of the digital payment ecosystem.

Business Use-Case  
「Improvement of Cafeteria Payment Process (2019)」



### Digital Identity

Authentication information can be shared among participants of the blockchain network via digital identity which benefits end-users with easy and convenient authentications and services.

Business Use-Cases  
「Login service for affiliated companies (2017)」  
「Joint customer authentication system for banks (2018)」



### Supply Chain

Electronic contract management and sharing of trade documents and data via blockchain drastically improve speed, reliability and transparency of existing business process.

Business Use-Cases  
「Electronic Contract System for Global Manufacturing Company (2017,2019)」  
「Maritime Logistics Blockchain PoC Project (2017)」  
「Customs-Clearance Blockchain Pilot Project (2018)」