⑥ Secure data distribution environment that supports supply chain and business collaboration in trust 【Overview】

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Constructing a network of trusted companies in cyberspace, and sharing and understanding such as non-financial information and problem situations in a safe, and enables rapid response to business co-creation and supply chain issues.

Background

■ Solving the vulnerability of the current supply chain to disaster preparedness and new construction

- ● Disruption of supply chain due to earthquake, flood and corona disasters
  It is difficult to respond to unforeseen situations such as earthquakes and corona disasters only by adjusting inventory and optimizing lead times based on forecasts.

- ● Prolonged construction and restructuring of the supply chain in line with the diversification and diversification of business
  Increased cost and duration for each stage of credit formation between companies, including pre-qualification, accreditation, and audit required for each supply chain

Background Case (Manufacturing supply chain)
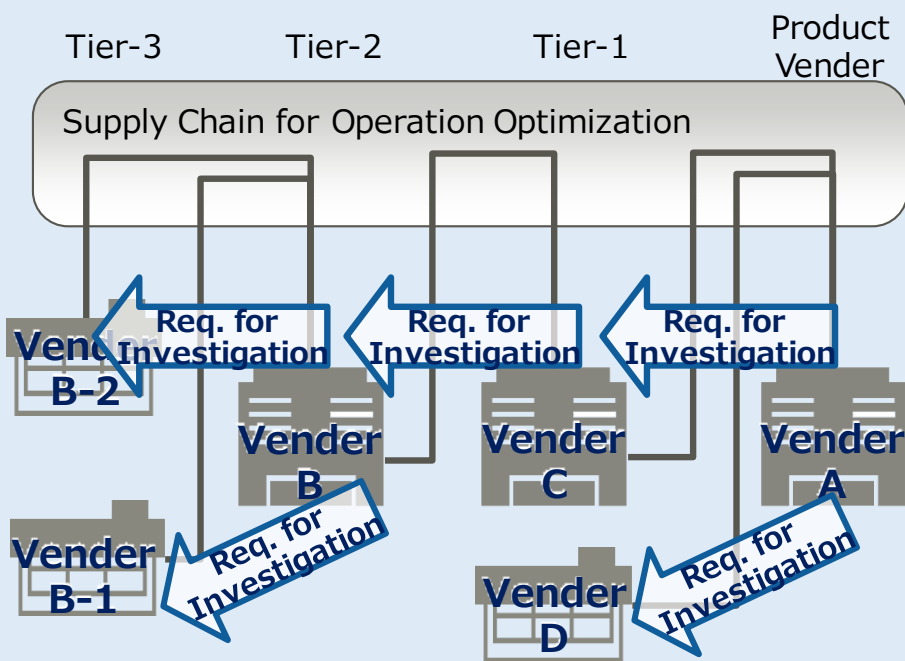
Usually, product manufacturers only understand Tier -1, and it takes **more than one month** to conduct surveys via intermediate companies by telephone, etc.
- Detection trigger: Delay in delivery of Tier -1
- Route of investigation: Tier-1⇒...⇒Tie-3⇒...
- Survey period: 1 month or longer

Background Case (Administrative housing support)

- **Applicant visit various government offices by himself** and legal affairs bureaus to collect necessary documents.
- Within the government offices, confirmation work is conducted on a **paper-based basis** between related departments.

Objectives

■ Visualization through secure information sharing and resolution of issues through equal and equal decision-making through consensus building
- ● Secure sharing of non-financial information and other information impact to business
- ● Equal and fair decision-making among companies by multi-stakeholder process to quickly deal with business problems

⑥ Secure data distribution environment that supports supply chain and business collaboration in trust【Details】

B
Construction & Distribution

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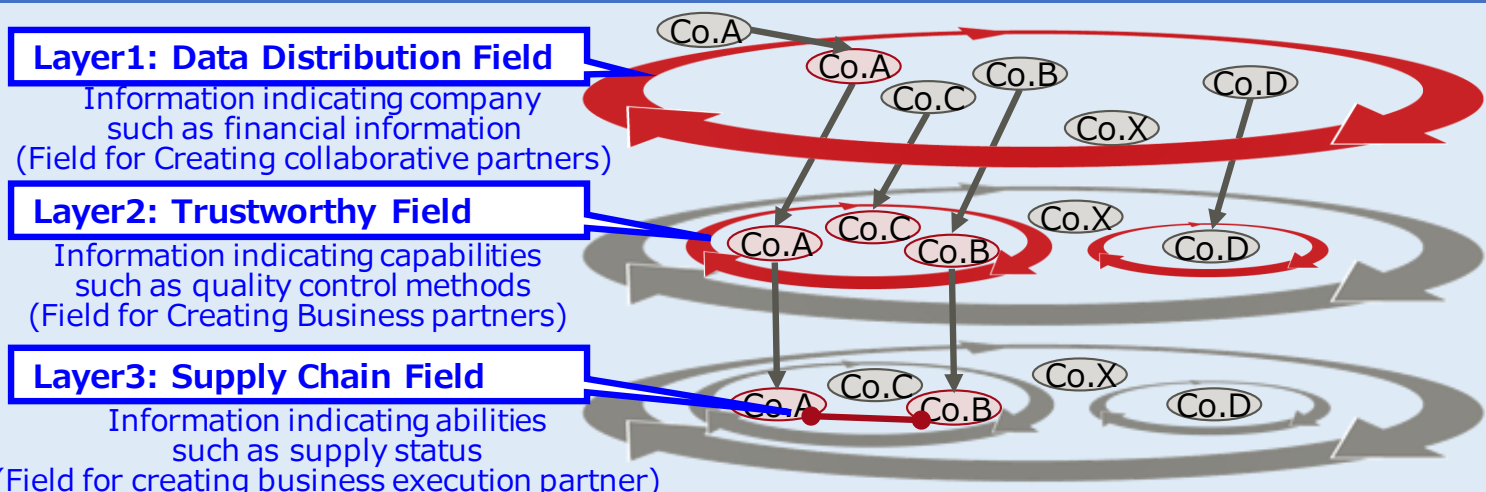
Features of Technology

■ **Building a Safe and Secure Data Distribution Environment**
   A closed space "Field" for data distribution protected from data leakage and falsification is constituted for each group of companies constituting a credit relationship, and credit formation between companies is advanced stepwise by decision making based on an equal and fair agreement between companies based on distribution data, and a real-world trust relationship is established in cyberspace.

■ **Maintaining the safety of the data distribution environment**
   Security threats are monitored in each closed space "Field", and primary measures against detected threats are automatically deployed throughout the entire "Field" to maintain the safety of the entire "Field"
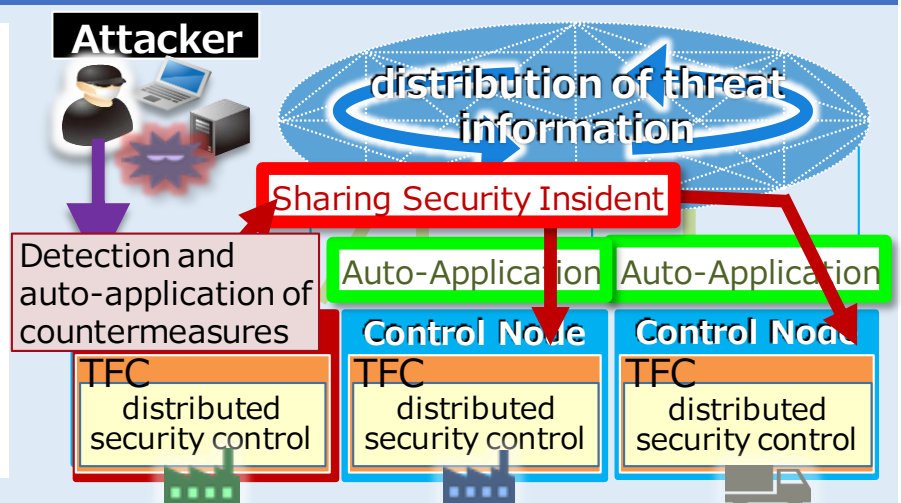
Create closed space "Field" controlling scope of information distribution based on credit

Layer1: Data Distribution Field
Information indicating company
such as financial information
(Field for Creating collaborative partners)

Layer2: Trustworthy Field
Information indicating capabilities
such as quality control methods
(Field for Creating Business partners)

Layer3: Supply Chain Field
Information indicating abilities
such as supply status
(Field for creating business execution partner)

• The credit formation stage (Pre-Assessment, Certification, Transaction and Audit) of the supply chain is modeled in three layers.
• On each supply chain in each layer, a closed space "Field" is established to control data distribution.
  - Data distribution is managed on decentralized ledger controlled by access from each layer
    (Restricting the scope of sharing and preventing tampering)
  - Cryptographic messaging with enterprise ID routing to hide network addresses
    (prevention of information leakage)

Autonomous applying of primary measures to entire supply chain by TFC

• Deployment of unified external and internal threat countermeasures to monitor threats at each "Field"
• Applying primary security measures to entire supply chain autonomously
  - Calculate degree of risk from threat log and traffic analysis
  - Visualize threat impact measured by as degree of risk as common indicator
  - Minimize impact by applying preconfigured threat countermeasures (Change settings, etc.) autonomously

Attacker

distribution of threat information

Sharing Security Insident

Detection and auto-application of countermeasures

Auto-Application Auto-Application

Control Node **Control Node**

TFC distributed security control

TFC distributed security control

TFC distributed security control

TFC : Trustworthy Field Constructor

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⑥ Secure data distribution environment that supports supply chain and business collaboration in trust 【Use Cases】

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Constructing a network of trusted companies in cyberspace, and sharing and understanding such as non-financial information and problem situations in a safe, and enables rapid response to business co-creation and supply chain issues.

Use Cases

■ **Example of application to manufacturing supply chain**

Tier -1 to Tier -3 companies belong to "Trustworthy Field". Tier -3 company notifies manufacturing problems to "Trustworthy Field", and then visualizes them, and draws up countermeasures with agreement among relevant companies.
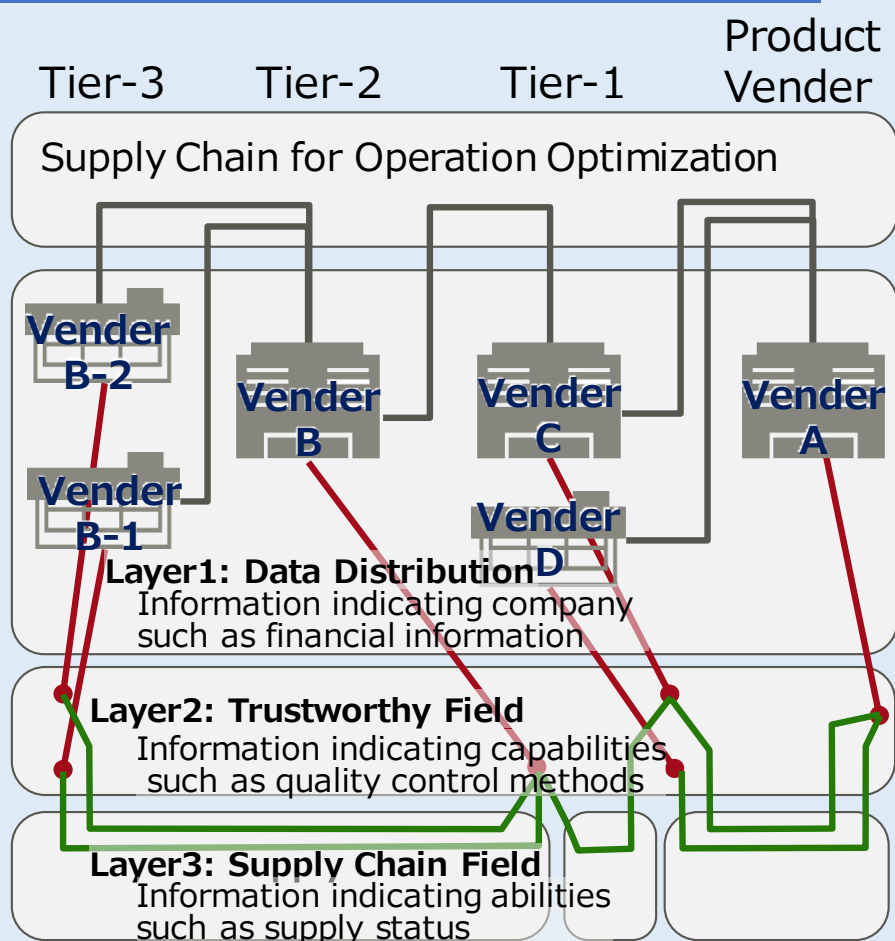
➡ Effect: The period from detection to investigation, that used to be taken <u>more than one month</u>, will be reduced <u>less than a few days</u>.

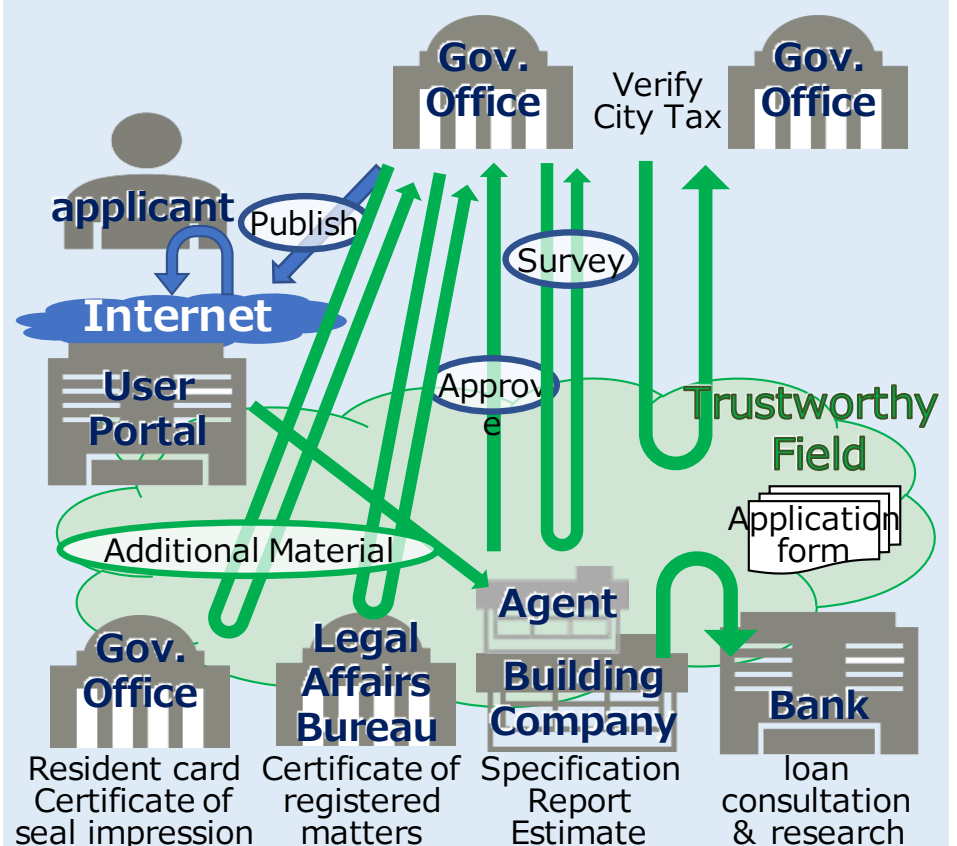■ **Examples of application to administrative housing support projects**

Based on the consensus of stakeholders such as government offices and building companies, they belong to "Trustworthy Field". The applicant's individual procedures with government offices, financial institutions, and builders are processed at once.

➡ Effect: <u>The period for those procedures that used to be taken more than a month by visiting multiple government offices will be reduced less than a few days at once</u>.

Use Case (Manufacturing supply chain)

Tier-3   Tier-2   Tier-1   Product Vender

Supply Chain for Operation Optimization

Vender B-2
Vender B-1
Vender B
Vender C
Vender D
Vender A

Layer1: Data Distribution
Information indicating company such as financial information

Layer2: Trustworthy Field
Information indicating capabilities such as quality control methods

Layer3: Supply Chain Field
Information indicating abilities such as supply status

Use Case (Administrative housing support)

Gov. Office   Verify City Tax   Gov. Office

applicant   Publish   Survey

Internet   Approve   Trustworthy Field

User Portal   Application form

Additional Material   Agent

Gov. Office   Legal Affairs Bureau   Building Company   Bank

Resident card Certificate of seal impression   Certificate of registered matters   Specification Report Estimate   loan consultation & research

About Exhibition

In the demonstration, you can see how the system works in a multi-stakeholder consensus-building process, such as creating a "Trustworthy Filed", detecting security threats, and rearranging the supply chain.