



ERIA Digital Innovation and Sustainable Economy Centre  
(E-DISC): Visible Initiatives for ASEAN and Japan  
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# Action towards Digitalization of Supply Chains in ASEAN and Japan

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# ERIA and Digital Innovation and Sustainable Economy Centre

## About ERIA

- Established in 2008 as an International Organization
- Member countries: 10 ASEAN countries and 6 ASEAN dialogue partners (AU, CN, IN, JP, KO, NZ)
- Three objectives: deepening economic integration, narrowing development gaps, and achieving sustainable economic development
- Conduct researches and make policy recommendations



## About ERIA Digital Innovation and Sustainable Economy Centre (E-DISC)

- Launched in 2023 as a dedicated division within ERIA to catalyze digital innovation and a sustainable economy in ASEAN and East Asia
- Four goals: fostering public private dialogue, catalyzing regional open innovation, nurturing technological-savvy talent, and providing practical policy proposals
- The digitalization of supply chains in ASEAN and Japan is the first project of this centre

# Background and objective

ASEAN and Japan face challenges related to emerging supply chain issues. To overcome challenges collaboratively, ERIA's Digital Centre provides a dialogue platform for stakeholders to discuss benefits through data-sharing across supply chains




- **CO2/GHG emissions**
- **Environmental issues and circular economy**
- **Change of geopolitical environment**
- **Diversification of customers**
- **Human rights**
- **Safety issues**
- **Other (e.g. food loss)**

Addressing compliance and ESG issues in the supply chain

# Method


- **"Start small, grow big"** strategy – gradually expand target regions and industries.
- **Identify pain points** within specific industries and **develop use cases** to address these challenges by **forming discussion groups** composed of supply chain stakeholders.
- Summarize discussions and publish reports by utilizing both **high-level** and **detailed documents**. This year (ASEAN-Japan 50<sup>th</sup> anniversary), we compiled **the Vision for Digitalization of Supply Chains in ASEAN and Japan**, along with the report on **"Use Case Concretization: Visualization of Carbon Footprint for the Automotive Industry."**

## Immediate focus: target countries, industries, and experts

Indonesia  
(Automotive)   
Nita Kartikasari (KADIN)

Singapore  
(Logistics)   
Teng Theng Dar (BASE)  
Ariel Goh (ITE College East)  
Bee Lock Oh (SLA)

Thailand  
(Automotive)   
Archanun Kophaiboon  
(Thammasat U)  
Piti Srisangnam  
(Chulalongkorn U)

Vietnam  
(Electronics)   
Le Thi Thu Thuy (VCCI)  
Truong Gia Binh (FPT)

# Vision – mission and value proposition

## Mission

Through collaborations between ASEAN and Japan, to establish a **digitalized and sustainable supply chain** that is **trusted and reliable, cost and time efficient**, and **with transparency, traceability, connectivity**, and **interoperability** to enable **seamless movement of goods and service** between ASEAN and Japan.

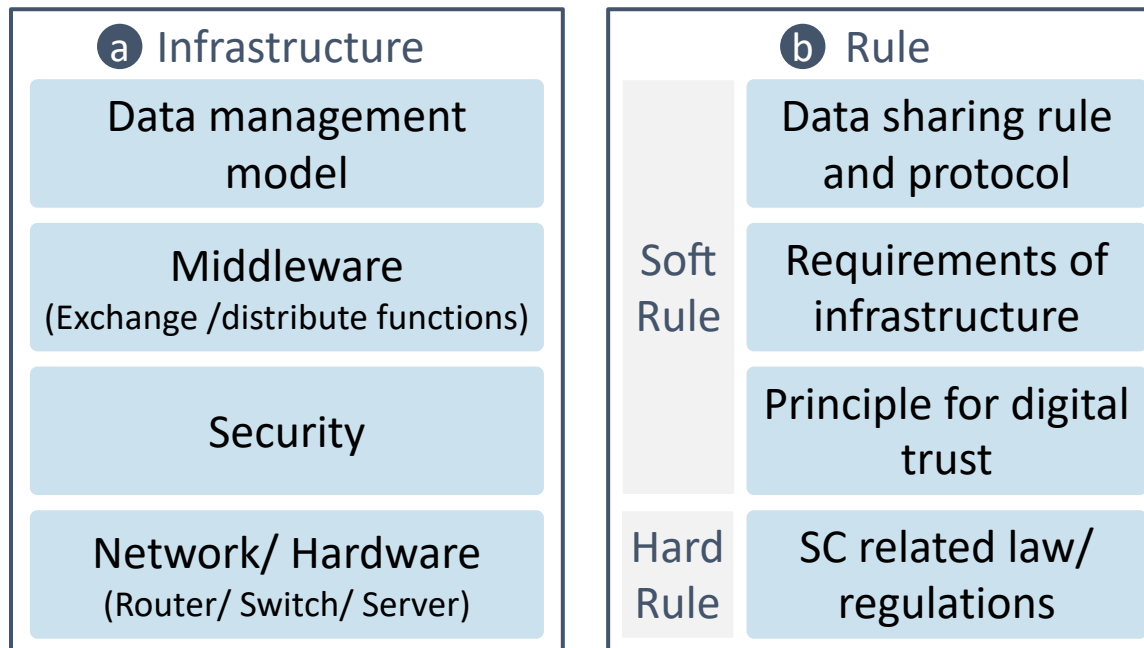
## Value proposition

- Transparency:** Provide increased visibility in supply chains and build trust among all the stakeholders with adequate, accurate and secured data and information sharing.
- Traceability:** Enhances the reliability and quality of the data, facilitating compliance adherence and proper quality management by tracking the path and change history of data
- Connectivity:** Improve supply chain efficiency by promoting connections across suppliers, manufacturers, and customers through digital and data exchange.
- Interoperability:** Enables different systems or platforms to be compatible, facilitating seamless data integration and sharing
- Sustainability:** Drive ethical and environmental responsibility in industry ecosystem by actively pursuing carbon emission reduction and human rights protection with harmonized standards.
- Competitiveness:** Build supply chain resilience by predicting and mitigating supply chain risk, as well as enhancing functional capabilities of supply chain stakeholders to further improve efficiency.
- Collaboration:** Promote collaboration across ASEAN countries and Japan, and between large enterprises and **SMEs** by exchanging best practices and know-how.
- Reliability:** Provide disciplined standards and governance for secure data exchange with security and, ensure accuracy and confidentiality of information

# Vision – essential requirements and enablers

## Use case

Actual data exchange & utilization among stakeholders based on specific objectives (GHG visualization, Traceability etc)



## c Mindset and skillset

Change mgmt. and education for people's mindset, digital literacy and skillset for utilizing digital

## a Infrastructure

Data management model

- Definition of standard dataset and quality

Middleware

- Functionalities in infrastructure to support exchange data (i.e. data exchange connector)

Security

- Functionalities to ensure security in infrastructure

Network and Hardware

- Physical components of infrastructure

## b Rule

Data sharing rule and protocol

- Standard rules/processes for data sharing

Requirements of infrastructure

- Standard specification of infrastructure or systems

Principle for digital trust

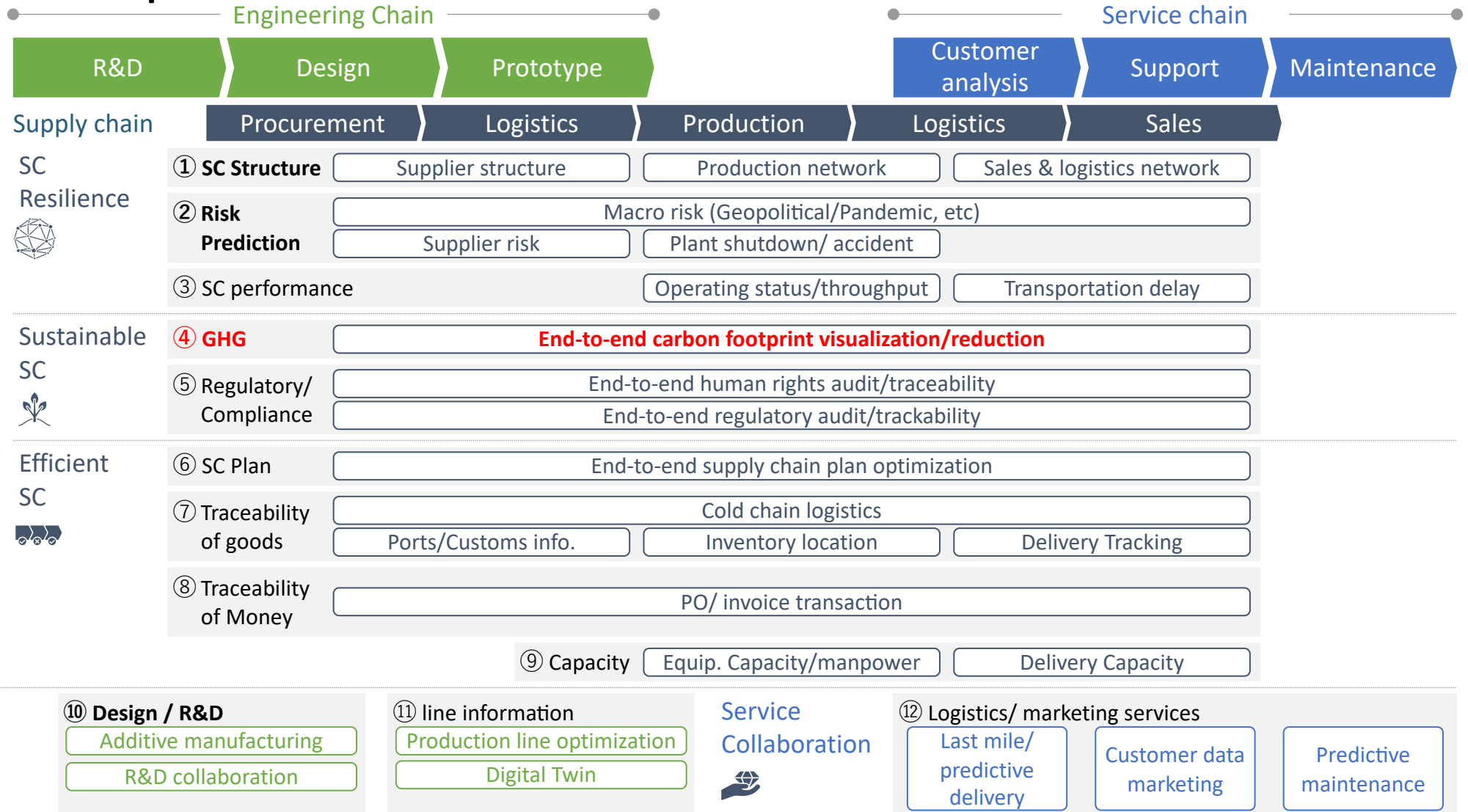
- Digital ID or certification for ensure trust in cyber world

SC related law/ regulations

- Related law or regulation in the region (i.e. ESG related, data protection related law)

# Vision – potential use cases

Example of use cases



# Use case – Visualization of carbon footprint


## Method

- **Selected a visualization of carbon footprint use case to concretize** as a starting point, given its importance and interest in global and regional markets.
- **Identify pain points and challenges** in ASEAN region and **draw implications** for data sharing initiative through benchmark of Catena-X and discussion with experts in ASEAN countries and Japan.


## Discussion focus: local challenges and implications in ASEAN

Indonesia 

Kukuh  
Kumara(GAIKINDO)

Japan 

Rei Machinaga  
(TOYOTA TSUSHO )  
Theerawat  
Limpibunternng  
(DENSO)

Singapore 

Eric Chan (YCH)

Thailand 

Chanapun  
Juangroongruangkit  
(Thai Summit)

Viet Nam 

Takahiro.  
Onouchi(FPT)



# Use case concretization – Key components and implication

## Key components

### 1 Key stakeholders

- Stakeholders to establish **data standards**, define and implement **technical architectures**
- Stakeholders to develop **IT applications**
- **Actual participants and users** of data sharing initiative

### 2 Data coverage and items

- **Data source and scope:** Primary data vs secondary data, Scope 3 emission coverage
- **Data granularity and freshness:** Product-level granularity and real-time data
- **Data items:** Relevant activity data, emission factor and direct emission data

### 3 Data sharing standard and processes

- **Data collection and assessment:** Primary data collection and data quality assessment
- **Data calculation and allocation:** Scope 3 calculation and allocation of emission data
- **Data verification and usage:** Compliance with standards, access and usage control

Visualization of Carbon Footprint

### 4 Technical Architecture

- **Data management:** Common standard for data set, data quality and interface
- **Middleware:** Components for data connecting/sharing and data security
- **Network and hardware:** OS and physical components of IT infra

## Implications to address local challenges

### 1 Design clear incentives for SMEs

- ASEAN auto industry is fragmented and needs to offer benefits for SMEs to participate in data sharing initiatives
- These incentive can include IT support, operation efficiency and new business opportunity

**Active engagement of the government sector is important to initiate and promote the data sharing initiative**

### 2 Provide IT infrastructure and clear rules/ standards to ensure data accuracy

- Challenges may arise in collecting data to calculate product-level GHG emissions and providing quality data due to less advanced data management systems

### 3 Provide GHG calculation functions with clear guideline for data sovereignty and data governance

- SMEs might be reluctant to share data due to concerns on data sensitivity and the risk of data leaks
- The standards for data sovereignty and calculation can vary among multiple countries

### 4 Need to design clear rules and technical specifications for data sharing platform

# Progress and Next steps

## Progress

- Finalized the Vision for Digitalization of Supply Chain in ASEAN, aligned with the Discussion Group(DG)
- Formed a Use Case Sub Discussion Group (SDG) with experts from ASEAN and Japan, and conducted multiple discussions to define the use case blueprint
- Developed use case concretization report for Visualization of Carbon Footprint
- Launched separate SDG with IT expertise to discuss the direction of our data sharing platform

## Next Step

- Develop a grand design for promotion plan and structure to communicate and market overall direction of our vision and use case (1Q 2024)
- Develop use case implementation plan for pilot and roll out (1Q 2024)
- Verify technical architecture and IT requirements for data sharing platform (1Q 2024)
- Establish a promotion structure by involving relevant stakeholders and prepare for implementation (2Q 2024)

Thank you!