

Smart Logistics Services

Realization of sustainable logistics through advanced data linkage

By building a "logistics/commercial distribution data platform" for accumulating, analyzing, and sharing data from upstream to downstream of the supply chain, and developing the technologies to automatically collect the data, which did not exist until now, while saving labor and automating, we aim to create new industries and added values that utilize data in the fields of logistics and commercial distribution, to maintain high logistics quality, and to realize a logistics and commercial distribution environment that can secure diverse options for shippers and consumers.



Program Director

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Executive Officer, Yamato Transport Company, Ltd.

1981: Joined Yamato System Co., Ltd.; 2011: Appointed as Senior Manager for IT Strategy (Yamato Holdings Co., Ltd.) and Head of the Information System Department (Yamato Transport Co., Ltd.); 2016: Appointed as Executive Officer, IT Planning Division (Yamato Holdings Co., Ltd.); 2019: Appointed to Managing Executive Officer, Yamato Holdings Co., Ltd.; 2020: Appointed to Executive Officer, Yamato Holdings Co., Ltd.; 2021: Appointed to the present position

Research and Development Topics

(A) Technologies relevant to the logistics/ commercial distribution data platform.

By the end of the fiscal year 2020, a prototype of the (vertical) logistics/commercial distribution data platform, where the SC is integrated from the upstream to downstream sectors, will be developed, expanded, and upgraded for individual industries, with technologies relevant to the establishment of the data infrastructure being developed in parallel. By the end of the fiscal year 2022, a (horizontal) logistics/ commercial distribution data platform, where logistics functions are integrated among industries, will be developed. Moreover, a logistics/commercial distribution data platform that incorporates the outcomes of R&D on elementary technologies will be upgraded, and business activities will be improved using these data infrastructures, amongst others. In parallel with this, we will formulate standard guidelines for SIP logistics, including processes, messages, codes, etc., for the purpose of enabling each company to use the accumulated logistics and commercial distribution data in a common manner.



Profile

(B) Automated data collection technologies contributing to laborsaving and automation.

To automatically gather as-yet uncollected information and feed it to the logistics/commercial distribution data platform, technologies that automatically collect various data on traceability, load factor, stowage, etc., will be developed. By the end of the fiscal year 2020, the R&D topics will be narrowed down, and the actual R&D will commence, by the end of the fiscal year 2022, and experimental demonstrations (in collaboration with the logistics/commercial distribution data platform [R&D Topic A]) will be carried out.

Implementation Structure

Using grants given to the National Institute of Maritime, Port and Aviation Technology, we will implement the project under the organization shown on the right. The Institute will assist the Program Director (PD) as the project management office, managing the progress of R&D, supporting self-ex-amination, carrying out peer reviews, creating various documents and implementing related research/analysis. Furthermore, the administration system will be strengthened through appointing sub-PDs and other measures.



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Exit Strategies



The interaction between the automated data collection technologies that contribute to laborsaving and automation, and the logistics /commodity distribution data infrastructure, will be confirmed by experimental demonstrations, and its implementation in businesses will be promoted.

The data comprising the infrastructure, where possible, will be made available, thereby encouraging use of such data - in combination with other data - in academic institutions such as universities and venture businesses, further promoting (i) the cultivation of young researchers, (ii) the creation of new industries, and (iii) the securement of logistics during disasters, all via the use of the logistics/commodity distribution data. The data infrastructure and its uses will also be promoted in other Asian countries.

Past Milestones and Anticipated Outcomes

Development of logistics/commercial distribution data platform

- In FY2020, we carried out a proof of concept with four prototype models: "Daily consumer goods", "Drugstores/convenience stores, etc.", "Pharmaceuticals and medical devices, etc.", and "Regional logistics".
- As elemental basic technologies, we developed "technology to control access authority" and "technology to guarantee non-alternation" for safe and secure distribution of data; "individual management data extraction/conversion technology" and "coordination technology with other platforms" for users to utilize data without stress. In 2021, we will implement the data platform equipped with these technologies in each model.

Automatic data collection technology that contributes to labor saving and automation

• We developed a smartphone application that can easily read package information using a common camera-equipped smartphone and linking it to the cloud, as well as technology that automatically collects package information at nodal points in the supply chain and automates unloading, for which we conventionally rely on manual labor. We are now working hard on the social implementation of these technologies.



Expected effects

We will implement a logistics/commercial distribution data platform equipped with basic

• elemental technologies to collect standardized data from players in production, distribution, retail, and logistics. In addition, we will link the platform with the data from other platforms and open data from the governments to create big data related to logistics/commercial distribution. By utilizing the created big data, we will contribute to the creation of new services and added values, such as planned deliveries based on demand forecasts and joint deliveries across industries and sectors.

