Smart Logistics Services

To realize services that make supply chains more efficient through sharing and utilizing logistics/commodity distribution data, from the upstream to downstream sectors, and across corporate and industrial boundaries

The entire supply chain (SC) will be optimized, new industries and added values using data from the logistics/commodity distribution sectors will be created, and the labor shortage and low productivity problems faced by these sectors will be solved. Taking into account collaborations with existing security-related efforts, as well as efforts towards the digitizing of intra-port logistics information, the logistics/commodity distribution data held by various domestic and overseas participants within the SC will be visualized using innovative technologies, and an open, secure data infrastructure, shared and utilized for its optimization, will be developed. Although current efforts are limited to individual companies/industries, a logistics/commodity distribution environment that (i) strengthens the vertical and horizontal connectivity between participants within the SC, (ii) creates features such as on-demand capabilities and traceability, (iii) maintains a high logistical quality level, (iv) secures various options for shippers and consumers, simultaneously, and (v) encourages innovation (e.g., new services and technologies), will be realized.

Program Director

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Profile
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 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.

(B) Automated data collection technologies contributing to labor-saving 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.

Cross-ministerial Strategic Innovation Promotion Program (SIP)
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.

Goals

Social goals
Through the realization of shared logistics that extend beyond corporate boundaries, the labor productivity of logistics companies will be improved, and logistics crises - which are increasingly becoming a social issue - will be solved, and a sustainable logistics system that supports distribution to depopulated areas will be established. From a global perspective, to contribute to the attainment of the sustainable development goals (SDGs), we will aim to ease the traffic congestion through improved traffic forecast accuracies and modal shifts, to reduce CO₂ emissions, energy consumption, and excessive disposals such as food losses, as well as increase the distribution efficiency of relief supplies during disasters, amongst others.

*EC share: percentage share of electronic transactions from all transactions.

Industrial goals
Labor shortage issues will be solved through the realization of optimum production, inventory, and distribution; corporate financial health will be improved through the optimum allocation of inventory and logistics resources (trucks, distribution centers, etc.), and new business models that employ the logistics/commercial distribution data platform will be promoted. A 20% improvement will be aimed for in the labor productivity of distribution companies.

Technological goals
In relation to the development of the logistics/commercial distribution data platform, (i) security technologies such as those ensuring the confidentiality and anti-tampering of data (allowing data providers to supply data in confidence), (ii) conversion technologies that extract existing individual management data for mutual use, (iii) technologies that allow intercommunication with other existing platforms, and (iv) input/output high-speed processing technologies, amongst other technologies, will be developed. Moreover, ahead of the development of these technologies, we aim to reach a consensus on the scope of data collaboration required, and to develop data provision/use rules that respect data sovereignty.

System and other goals
Labor shortage issues will be solved through the realization of optimum production, inventory, and distribution; corporate financial health will be improved through the optimum allocation of inventory and logistics resources (trucks, distribution centers, etc.), and new business models that employ the logistics/commercial distribution data platform will be promoted. A 20% improvement will be aimed for in the labor productivity of distribution companies.

Collaboration with local governments and other entities
To realize implementation in society, we require many parties to use the logistics/commercial distribution data platform developed through the Cross-ministerial Strategic Innovation Promotion Program (SIP). We will work together with local governments and other entities, such that the infrastructure can be used, not only in cities, but also in severely depopulated areas.

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-examination, 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.