

R&D item

1. Decentralized Management of Personal Data (PD)

Progress until FY2023

1. Outline of the project

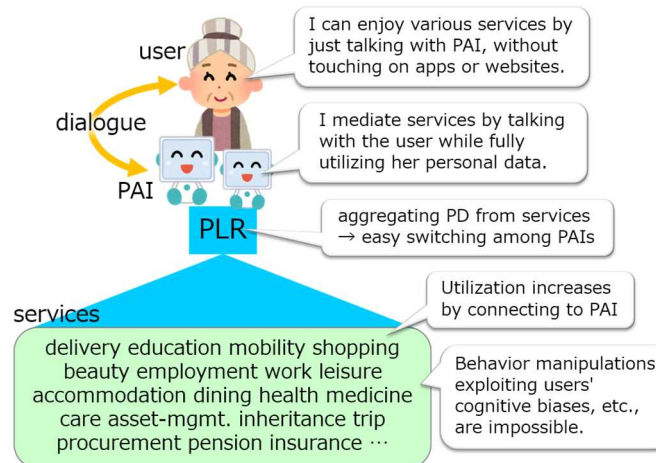
We will improve and expand PLR, which is a mechanism to manage PD by aggregating it in the person herself, and the apps incorporating it to enhance convenience and security, and develop personal AI (PAI) that intermediates various services in response to user interaction and prevents behavioral manipulation through dark patterns and fakery. In parallel, we will examine the legal and social validity and acceptability of decentralized management, improve PLR and PAI based on this, standardize the governance mechanism of PAI internationally, and socially implement PAI that protects mental freedom.

2. Outcome so far

We improved PLR and apps embedding it, and conducted demonstration tests of services such as infant health checkups based on decentralized management, as well as small-scale actual operations of family caregiver support. We collaborated with other MS9 projects handling PD, and three projects were prepared to implement decentralized management.

However, we realized that decentralized management is brought about by PAI mediating various services through dialogue, as shown in the figure on the right. Since PAI can be implemented with existing technologies and will rapidly spread because while eliminating the digital divide, we must start research on the development and governance of PAI soon.

We have organized and selected research targets of the survey on the latest trends of domestic and foreign legal systems and theories about self-information control, which will serve as the theoretical basis for



social implementation of PAI. We asked domestic and foreign researchers to conduct surveys on three regions (Europe, North America, and East and Southeast Asia). We held workshops with them based on their reports, and summarized international trends in legal systems and theories on self-information control in a working paper.

We developed a hypothesis on decentralized PD management for manufacturing companies based on a preliminary quantitative survey in FY2022 and conducted interviews with key stakeholders of the services targeted by this project. In addition, Swedish researchers were invited to Japan to discuss the compatibility of PD protection and social acceptability. As a result, we developed a model in which uncertainty avoidance, long-term perspective, and manufacturing culture increase recognition of the need for services and reach more advanced service businesses, as manufacturing companies aim for higher-order services through PD utilization.

If PAI mediates services, service providers cannot

exploit users' cognitive biases to manipulate their behavior, thus protecting the freedom of mind. The premise for this is that PAI be properly governed. Since it is impossible to predict in advance the specific risks of the PAI, the PAI governance is an agile process of continuously evaluating the quality of the service while operating the PAI. Therefore, a system should be established in which the PD aggregated by the individual is collected and analyzed by service auditors to clarify the value of each service (including PAI's service) to the users. It is necessary to make this system an international standard to make it enforceable in some way.

3. Future plans

In FY2024, we will confirm the technical feasibility of PAI and proceed with the design of the PAI and its governance mechanism. We plan to design in detail a PAI that mediates (selects and executes) appropriate administrative services in response to user interaction. In addition to examining the legal status and social acceptability of decentralized PD management, we will investigate relevant laws and regulations, international standards, and social acceptability of PAI for international standardization of PAI governance. An international standardization project is planned to launch in 2025.

Performers:

HASHIDA Koiti: The University of Tokyo
YAMAMOTO Tatsuhiro: Keio University
TOYA Keiko: Meiji University