Here begins our new MIRAI
MOONSHOT RESEARCH & DEVELOPMENT PROGRAM

R&D Theme

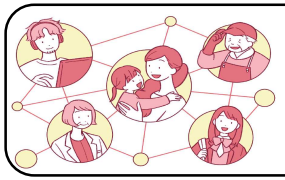
System Design of Child Care Commons

Progress until FY2022

1. Outline of the project

This Research and Development project aims to establish the requirements for a system that will be necessary to realize Child Care Commons (CCC). To achieve this goal, we will identify a set of functions that should be realized by the system and examine the requirements for technologies that can implement these functions (Issue 3). From the next year onward, we will also examine evaluation methods for the system to be realized (Issue 4).In recent years, attempts have been made to solve social issues related to community building, in sports and urban development, using digital technology, especially blockchain technology (and similar ones). Among these, digital tokens are issued as a way to support sports teams and participate in local government, increasing the variety of ways to get involved in the community. These tokens can create a sense of belongings for their communities, and a certain percentage of people become involved in the community as “fellow members” who are proactively engaged in their communities.

CCC introduces this kind of token into the child-rearing environment, bringing new options to the child-rearing. It creates the possibility for diverse people other than parents and children (hereafter referred to as ″participants″) to be involved in child-rearing in their own ways, in a flexible and responsible manner. This diversification of child-rearing will not only help parents and children who are suffering from various burdens but will also provide every child with the opportunity to choose his or her own relationships with a variety of adults and to grow. Participants would also gain a ″proof″ of their involvement in the time the children grow up and would be able to obtain fulfillment such as a sense of involvement and contribution to child-rearing. To realize CCC, this item examines the set of functions and technical requirements to be realized in the CCC system, taking into consideration the relationship with the existing childrearing system.



Introducing the digital token to child-rearing, that has been used in community building of sports and urban development.

2. Outcome so far

The CCC system should not only electronically guarantee the involvement in child rearing, but also share data on parent-child and participant communication in the form each family desires while maintaining privacy. It also visualizes the relationships that are occurring there, and enable parents, children, and participants to update the parenting community at their own will. To date, we have identified a conceptual model of what actions are performed and what is realized between parents, children, and participants, as well as the technical requirements to realize this model. In this model, the construction of a child-rearing environment will be carried out based on consensus building, roughly in the following manner.

1) The interaction between the parent and child and the participant begins with ″Relationship building”. Once a consensus is reached, 2) a “membership token” is issued to the parent/child and participants to certify the participation in the parenting community. 3) The roles and involvement of the participants are then adjusted. 4) At that time, information of, such as photos, is recorded as ″proof″ of the commitment to child-rearing. 5) The data of interaction between parent-child and participants are input into the ″Platform for Social Relationship ″ proposed by NTT, which is then manipulated and used to visualize relationships between the parent-child and participants. Through the process of 4) and 5), the parent-child and participants ensure that the community is sustained. 6) Then, when the relationship ends, the ″membership token″ is revoked with the agreement of the parent-child and participants.

The blockchain technology guarantees the existence of an agreement on creating membership tokens and the authenticity of the data on the relationship between parent-children, and participants. It also prevents unagreed creation/revocation of tokens.

3. Future plans

In the future, we will examine the technical aspects of the system, such as recording methods of communication between parents and participants, data privacy and security, as well as the institutional design and ethical aspects, such as rules for information sharing. In addition, as a method of system evaluation, we will also examine changes in the way of thinking and attitudes of participants as they engage in child-rearing from the viewpoints of cognitive science and brain science.

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