



Global perspectives of personalized Identity Management Ecosystem (GINI-SA vision)

BIC Discussion Paper

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Introduction

GINI-SA <http://www.gini-sa.eu/> is a Support Action for the European Commission, which aims to analyse Personalized Identity Management (PIM) ecosystems in which individuals can manage their digital identities and control the exchange of their identity information. Under the GINI vision, individuals would manage their identities by means of an Individual Digital Identity (INDI), a self-generated and self-managed digital identity, which is verifiable against one or more authoritative data sources. Once created, users would have the ability to link their INDI with authoritative identity data maintained by both public- and private-sector entities. This data (or links thereto) could then be presented by the user towards relying parties.

Personalized IDM Ecosystem

GINI foresees that INDI-type online identities will emerge and personalized services based on INDI requirements and features will be available to citizens and consumers in the following years, with a market appearing and maturing between 2015 - 2020. The emergence of such services will be underpinned by business models which drive, and are driven by, the emergence of an ecosystem linking three types of actors: Individual users, Relying Parties and Data sources

The INDI allows individuals to act in various roles, for instance as citizens, employees, or customers. GINI assumes an operator model, i.e. the actor's "User", "Data Source", and "Relying Party" are served by intermediary entities called INDI Operators. It may be possible for different roles to be managed through a single INDI operator, or to utilize multiple ones for different interactions, allowing for disintermediation and enhanced privacy. The user chooses which roles to act in and what information to reveal under the different roles. As one, or several, INDI operators may be used for different kinds of context, the user is able to manage a set of partial identities in a manner similar to the physical world, by providing the information that is relevant for each situation, including those cases where anonymity, pseudonymity, and limited attribute provision are desired and acceptable.

As INDI is a new infrastructure, with no INDI market or operators existing as of today, there is a need of determining what prerequisites must be put in place, in order to enable private organizations to assume the tasks of INDI Operators. A variety of business models for INDI Operators will emerge once the technical aspects of the INDI ecosystem's infrastructure are implementable and a set of governance procedures are in place.

The INDI ecosystem could be built upon a one-sided market, where the service provider and customer interact directly with one another, or a two-sided market, where different business models and pricing schemes are involved in a unified set of business transactions. Creating a two-sided market is much more complex and often transfer fees and other similar pricing models need to be applied.

GINI Recommendations for Government, Industry and Research

GINI is putting forward a set of recommendations towards three types of stakeholder: Industry, government and researchers. All these stakeholder communities are global and therefore strong international cooperation is needed to achieve the vision of an INDI-like ecosystem of global dimensions. Therefore, the following recommendations are indeed directed to the global stakeholders:

1. Concerted action and international cooperation between global ICT market actors and particularly service providers such as Cloud operators and various identity intermediaries is necessary to build consensus on where common understanding must be the basis for broad industry-wide agreements on issues such as user-centricity requirements and user control to identity and attribute provision, as well as privacy-enhancement principles and rights of individuals including, but not limited to, the requirements of the upcoming privacy-related regulation in the EU.
2. Industry-wide standardization initiatives should be undertaken at a global scale with a strong international cooperation dimension, supported by major technology and service providers, in order to define various dimensions of inter-operator interfaces, concerning interoperability and data handling processes ensuring privacy for users and confidentiality for relying parties, portability specifications aiming for compliance with upcoming EU regulation, protocols, APIs, auditing and security for cross-operator relaying of claims and assertions.
3. Data handling principles and decisions by governments will be pivotal for the emergence of an INDI-like ecosystem. Privacy-respecting legislation should be harmonized globally in order not to create silos and market fragmentation. All world regions and major markets should cooperate towards a shared, commonly accepted governance and regulatory framework.

4. The role of governments should be examined to determine whether (and to what extent) further regulation is needed or whether (and to what extent) industry self-governance would suffice. This needs to happen at a global scale so international cooperation is essential as no single world region can contain identity provision services.
5. Further RTD work is needed on trust meta-models through interdisciplinary research involving more than technology but also social sciences, with a strong dimension for international cooperation. Further RTD work is needed on the process of technology-linked innovation, particularly as driven by behavioural motivation, e.g. by privacy. Strong international cooperation is needed in these research areas to account for cultural differences across world regions.