



PRISMA PILOTS RRI ROADMAPS: **HAT: Hub of All Things**

CEN workshop background document

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The Company

The HAT ecosystem is the first-ever personal data exchange ecosystem that enables individuals and organisations to exchange data directly between individuals and organisations without third party involvement.

The HAT is therefore a personal data platform for firms to offer individuals services for their data in a scalable way, yet allowing individuals to control the data rights given to firms. Importantly, the HAT and its transformed data is owned by the individual. For firms, the HAT opens opportunities for exchanges and use of personal data in a way that is privacy preserving, real time and on demand.

The enterprise grows out of a series of university-based research projects. The HAT project as a whole has received several grants from the RCUK/EPSRC/digital economy fund.

Alongside the UK Government funded research projects, there are two central private organisations: the HAT Community Foundation (HCF) Ltd., a not for profit company governed by its membership on behalf of the whole HAT community and the HAT Data Exchange Ltd (Hatdex), a private limited company with share capital, with a mission as a social enterprise.

Commitment

- The RRI PRISMA pilot has been endorsed by both the founder and the Commercial Director of HAT
- Motivation for RRI: Better understanding of the ethical, legal and social impacts and uncertainties related to technology development, exploring ways to ensure societal acceptability of the final product.

Context

- Type of pilot organization: SME
- Country: UK
- R&I project selected: Hub of All Things
- Technology: Internet of Things
- Relevant regulatory regimes: General Data Protection Regulation
- Type of R&I activities: in-house and cooperative research, based on public -private partnership
- Type of business: business to business and business to consumers
- Time to Market (indicative): 1-3 years
- CSR policies: the work of HAT is sustained by the non-profit HAT Community Foundation, which represents HAT members, and defines ethical requirements that regulates the HAT personal data exchange ecosystem
- RRI Maturity Level: Strategic

Materiality & experimentation

- Key stakeholders: technology developers, certification bodies, consumers, companies, R&D partners (research centres and academia, business partners), public and private investors, market clients, society (media and the public)
- Key ethical, legal and social issues: information privacy, data ownership, commercial use of private data, respect of users' rights, transparency (of data collection), security
- RRI actions selected for the PRISMA pilots: embedded ethicist

Validation aspects (key performance indicators)

- The most significant criteria identified with the company to analysis and monitor over time the impacts (in terms of costs & benefits) of the RRI actions on the HAT are ⁸
 - Q1.1: Inspire technological innovation; Q1.5: Product reliability
 - Q2.1: Product acceptability; Q2.5: Product related services and guidance; Q2.6: Address user's needs and rights'
 - Q3.4: Customer satisfaction, meeting new consumers' needs or requests; Q3.5: Building legitimacy and gain consumer loyalty on the product;
 - Q4.3: Address regulatory barriers;
 - Q5.3: Market penetration; Q5.5: (favoured) access to financial support;

RRI Roadmap

RRI VISION

Develop distributed data platform as a mechanism for increased personal control of data

R&I Technologies and products

The 'Hub of All Things' is a secure internet platform for storing, donating, personal data, but without aggregating it. The HAT entails the HAT micro-server, which is a new technology that confers intellectual property rights of personal data to individuals through their ownership of a database, wrapped with containerised microservices. Firms can (1) build smart devices that individuals can control and acquire the data on the device onto their HAT; (2) build smart applications for individuals to make use of their data; or (3) help individuals exchange their data for better buying decisions, personalisation and recommendation (4) not need to hoard data as firms can request for data in real time and on demand whenever needed and only while the user is using the service.

Drivers and challenges for RRI

Drivers

- **Stricter regulation on privacy and data protection**
- **Demand for secure, safe and privacy preserving exchange of data across individuals and companies**
- **Need for global operating standards for personal data exchange**
- **Growing public reaction against non-distribution to account holders of value of their data:** there is a widespread complaint in public discourse concerning the unfair extraction of the value of personal data or the use of personal data without obtaining proper consent
- **More and more hacking of commercial and public sector and personal data.** Large data sets held by organisations of any size are vulnerable to the increasingly sophisticated methods deployed by hackers.

Challenges

- **Internet providers charging for use of internet services in exchange for loss of right to harvest and analyse data.** Widespread abandonment of the data-in-exchange-for-services model of the online economy and instead the use of straightforward paid models without the imperative to exploit personal datasets.

⁸ For more details on the criteria for impact analysis used in this section, see PRISMA D5.1: Report on conditions for success of RRI uptake by industry

Risks and barriers to be addressed by RRI actions

- **Scaling up use by individuals incentivizing firms with non-distributed data sets to set up new accounts on HAT, get existing users to migrate to HAT.** The HAT is only useful if it has a wide uptake; it is only likely to have a wide uptake if it is useful. The challenge that the organisation is working on is how to create a snowball effect that would lead to widespread uptake.
- **Identifying the Data controller: is it the HAT management, or commercial users of HAT who recruit customers via a HAT platform.** There remains a legal issue of who is to be assigned the status of Data Controller, and in particular whether the HAT organisation is to be assigned this status individual HAT users are their own Data Controllers. If one of the HAT organisations itself has this status, then there is a diminishment of its claims merely to be acting to facilitate people owning their own data
- **Converting HAT to a Data sale platform: Sales by individuals to aggregators, researchers.** The long-term goal is to create a platform that enables individuals to obtain the economic value of their personal data in accordance with their own preferences for privacy
- **Data protection legislation may create confusion over the adoptability of HAT as a response to hacking threats.** The HAT depends in part on the legal idea that an individual can own a database (even if individuals cannot own pieces of data). It remains to be seen in the context of evolving data protection legislation how that legal idea plays out.

RRI actions

Reflection & Anticipation

- **Ethical design of data auctions.** Technologists might reflect upon the various possible pricing models for how personal data is valued on exchange platform

Inclusiveness

- Create understanding among users about informed data donations in the HAT and learning from the community which are the needs and users' requirements about data protection or use. E.g. through **user-centered design and stakeholder dialogues.**

Responsiveness

- **Embedded ethicist:** translation of existing practices into RRI-terms
- **Privacy by design approach in HAT:** in order to make people sure that their data will be handled in the right way, incentivizing mass take up of the HAT by individuals
- Consider adoption of sustainability, and business ethics **certification schemes** to formally recognize RRI principles implemented by HAT, and as well showcase HAT as a social enterprise

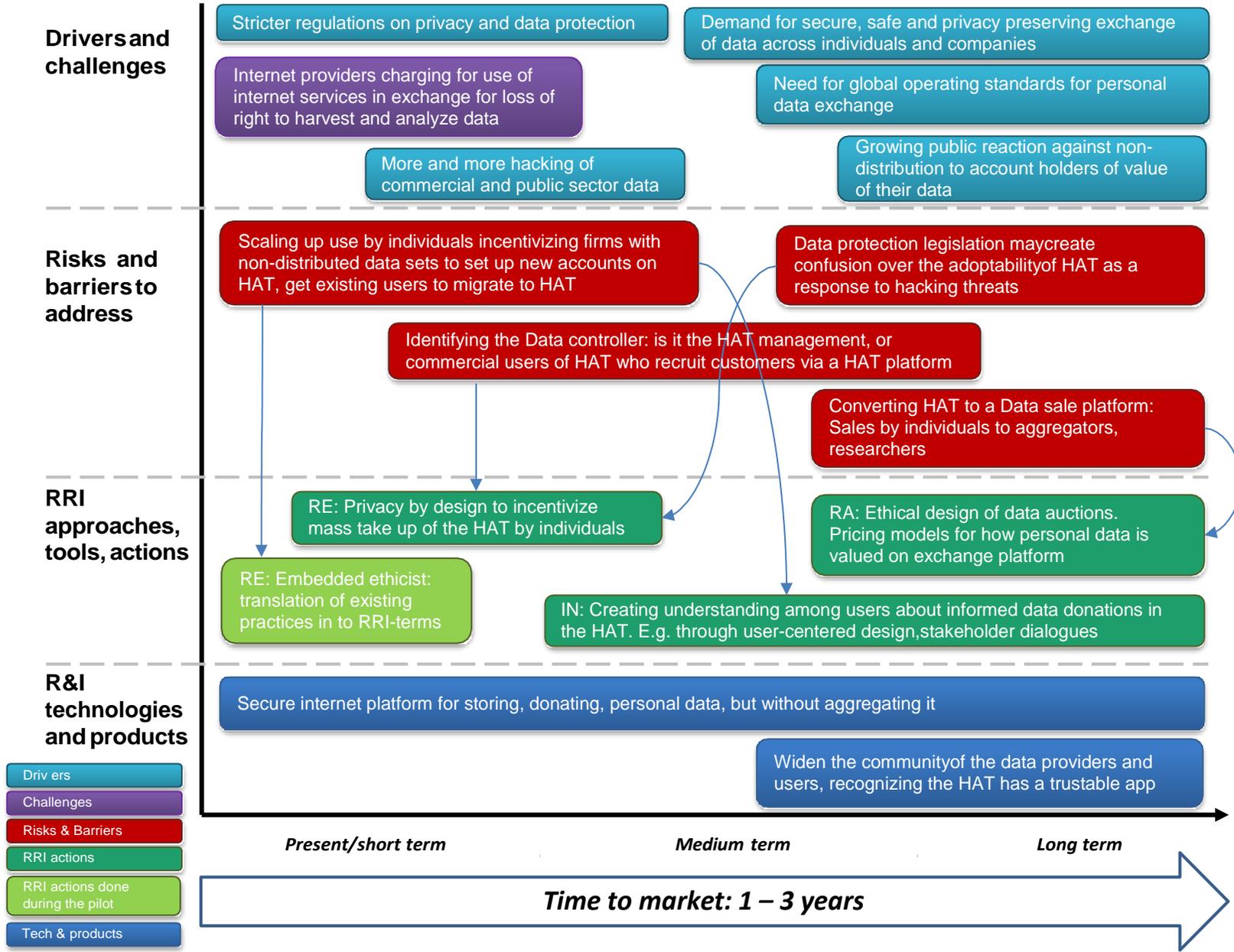
Roadmap design

The aspects relevant for the uptake of RRI by the company have been synthesized in an overall diagram, following the visual approach described in the PRISMA exemplar roadmap (Figure 6).

The RRI roadmap developed in PRISMA is a useful starting point for RRI uptake. Implementation of RRI could help HAT to engage with the community of stakeholders, and make the people aware about the moral motivation of HAT project, in order to inform the development of the technology, and ensure HAT is representing as much as possible consumers and their interest, and thus gain their trust.

HAT is convinced that the digital economy is going to shift from a centralized to an individual model of control of personal data. In this scenario, an ethical approach toward personal data economy will be an essential factor to be a trustworthy business that engages with the consumer, and to gain a competitive advantage in the field. RRI is the way to explore and find solutions toward this scenario.

RRI VISION: develop distributed data platform for increased personal control of data



- Drivers
- Challenges
- Risks & Barriers
- RRI actions
- RRI actions done during the pilot
- Tech & products

Figure 6 Hub of All Things, PRISMA RRI roadmap

