Creating a Primary Market for Personal Data Exchange in an era of IoT: The HAT

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On the Internet, we constantly give away our information

- Filling in forms
- Browse websites
- Watch videos
- Like, comment, interact

Personal data "transfer" is everything we do on the Internet

- It's a manifestation of digital "work"
- But more importantly..... it tells people who we are.....the type of persons we are.... and our preferences.

the current state of the personal data "harvesting" system

- is given away (not easily reused, unless you keep it on Google, Facebook, Amazon or Apple or other providers) - often without the right to dictate how it is used or reused
- After it is given away, services can resell the data in the name of 'better service'

And it's now a commodity

- personal data becomes a powerful resource to know who we are and to influence how, when and what we buy
- It's a commodity not because it's precious.....

It is a commodity because there is a market for it

Unless a market happens, the worth of a commodity is unknown

The 'secondary' data market

Now thriving with buyers and sellers

Using predictive analytics

Using AI and machine learning

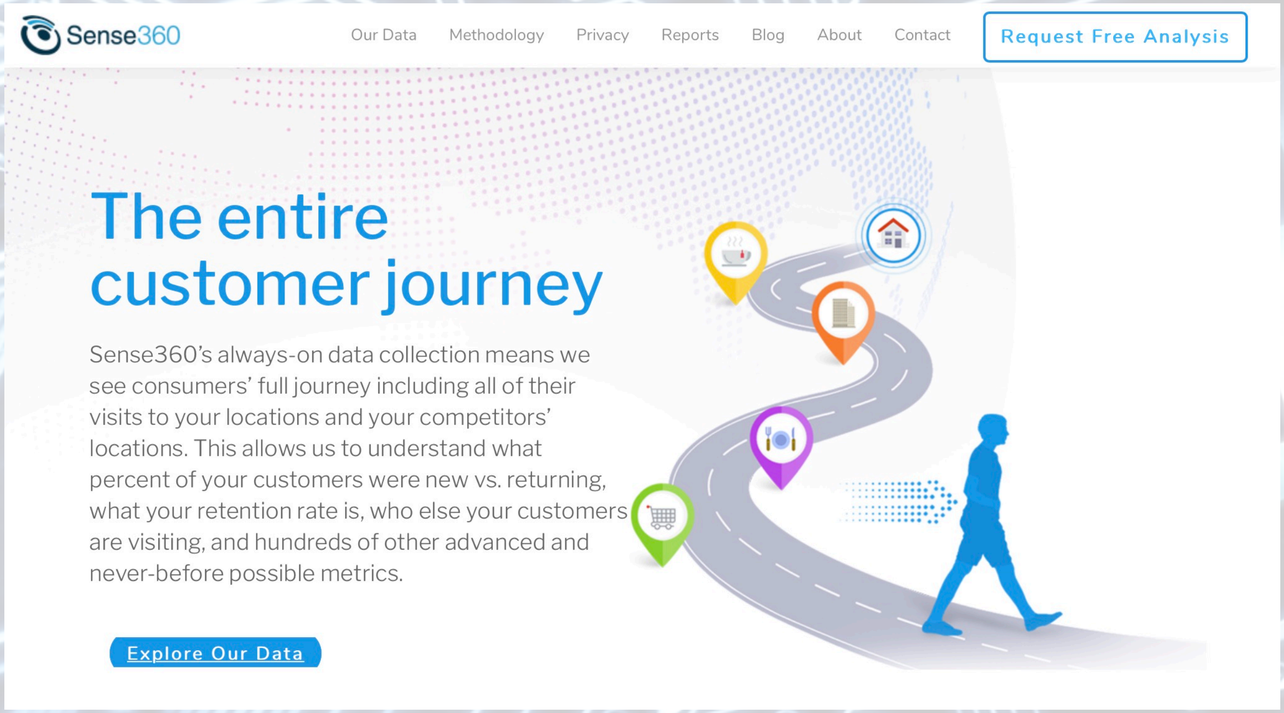
Able to strip personal identifying information and 're-identify' you with a number or ID through 'very good analytics' - therefore it is inferential data and can bypass the law (maybe)

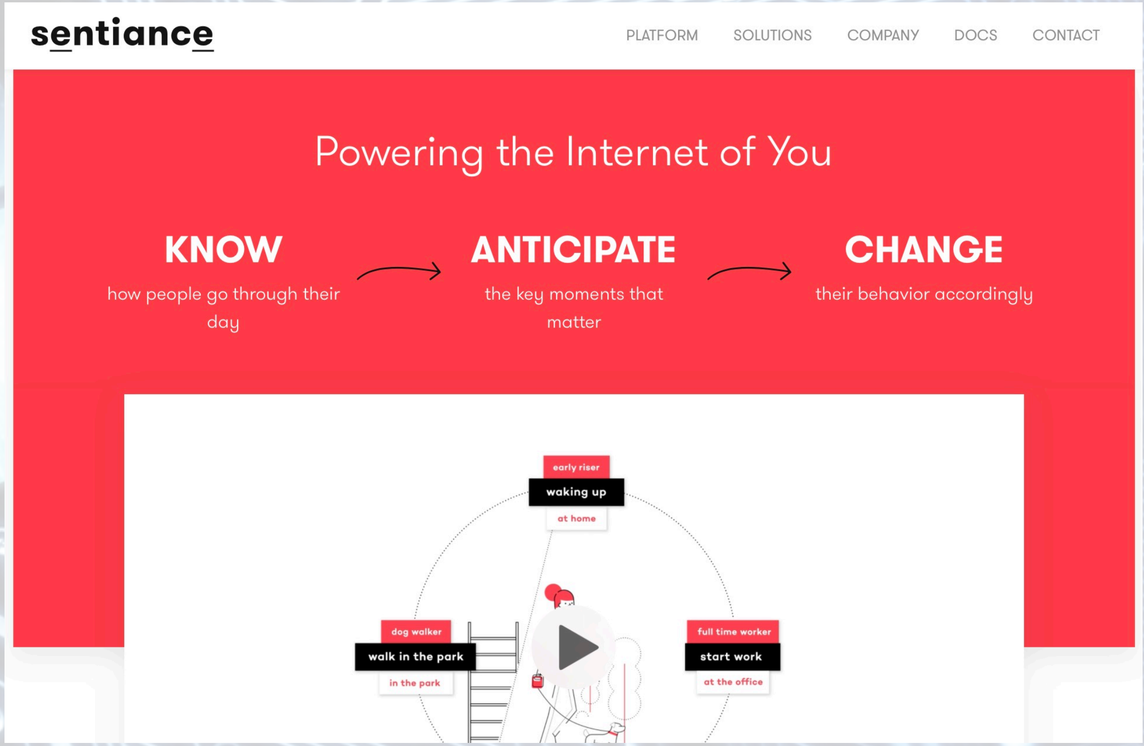
Sell on the inferential data for better targeting of consumers

The market is after a lot more than "just" personal data

- The precious commodity of personal data is just symptomatic of the real commodity
- In an era of IoT, personal data would be everything about you
- It is your entire person, in a digital form
- That's the real game, not some scrappy few pieces of personal data

And the capabilities are there to do it





Of course, with user consent

The issue with user consent

Temptation to cheat (long user agreements)
Opacity (no one knows how it's handled)
Creep (let's do something else with the data)

Because the incentive of the market is not aligned with the incentive of society

iPad 12:20 60%
yorkshirepost.co.uk

Your personal data on sale to scammers and cold callers for just 4p

Potential nuisance callers and scammers could be able to buy sensitive personal and financial information for as little as 4p a record

By
DAVID BEHRENS, DIGITAL EDITOR

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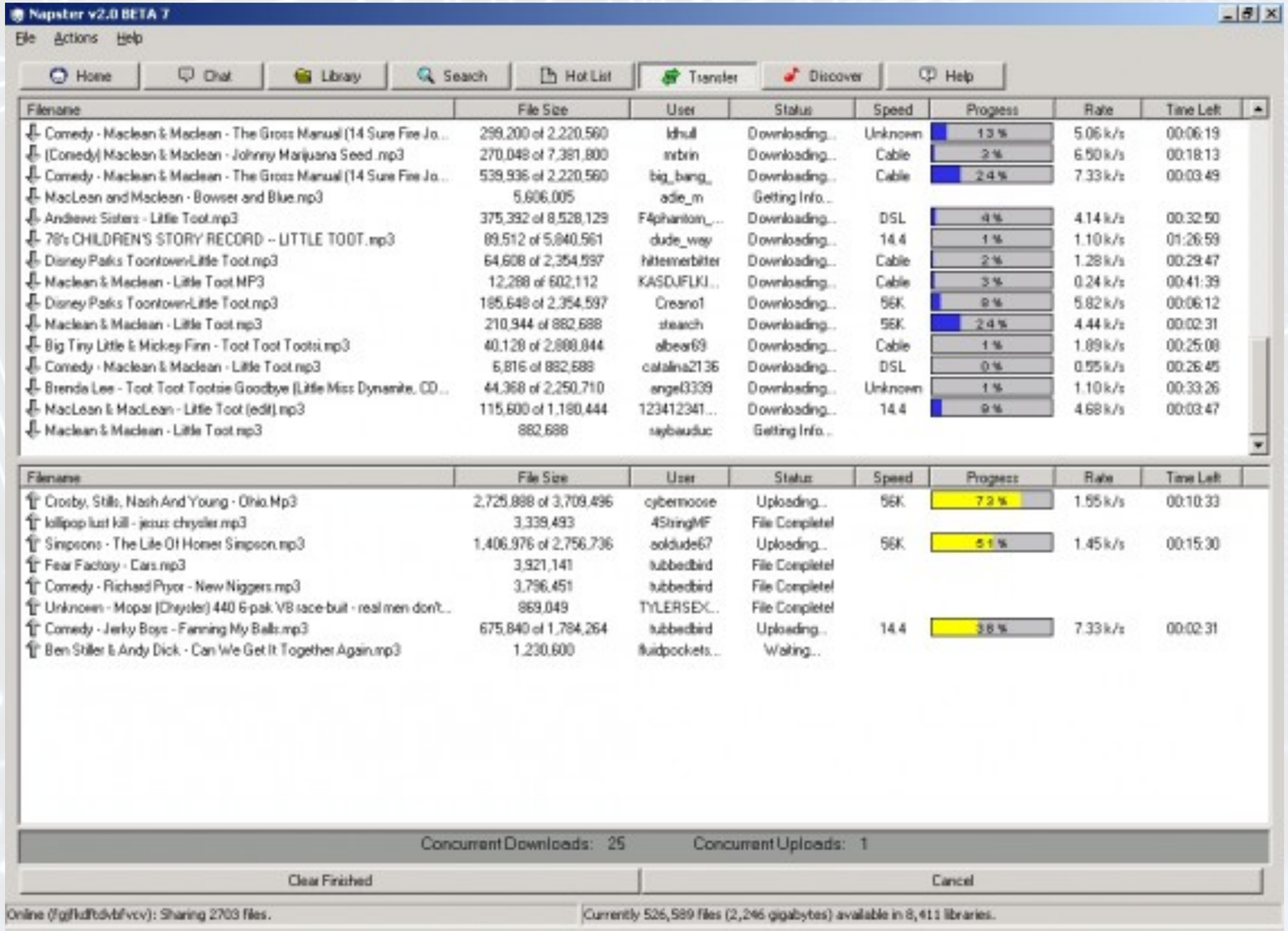
We've seen this before?

- It wasn't long ago that we had a secondary market of exchanges that didn't involve the source that produced it
- Quality was dubious, legality was questioned and later deemed illegal
- The market for personal data is starting to behave like the market for contraband and music in 1990s



A Primary Exchange Market for Personal Data is the solution

Data exchanged by the source

Why do we need it?

The value of our **personal data is the fastest-growing market on the internet**
– worth “€272 billion in the EU alone” according to the European Commission.

Why do we need it?

Markets and society thrive when all stakeholders prosper.

(See: Why Nations Fail: The Origins of Power, Prosperity, and Poverty by Daron Acemoğlu)

What is the HAT (Hub-of-all-things)?

The HAT enables a primary exchange of personal data between the source (individuals) and firms

By giving every individual a HAT Private 'Microserver' Data Account

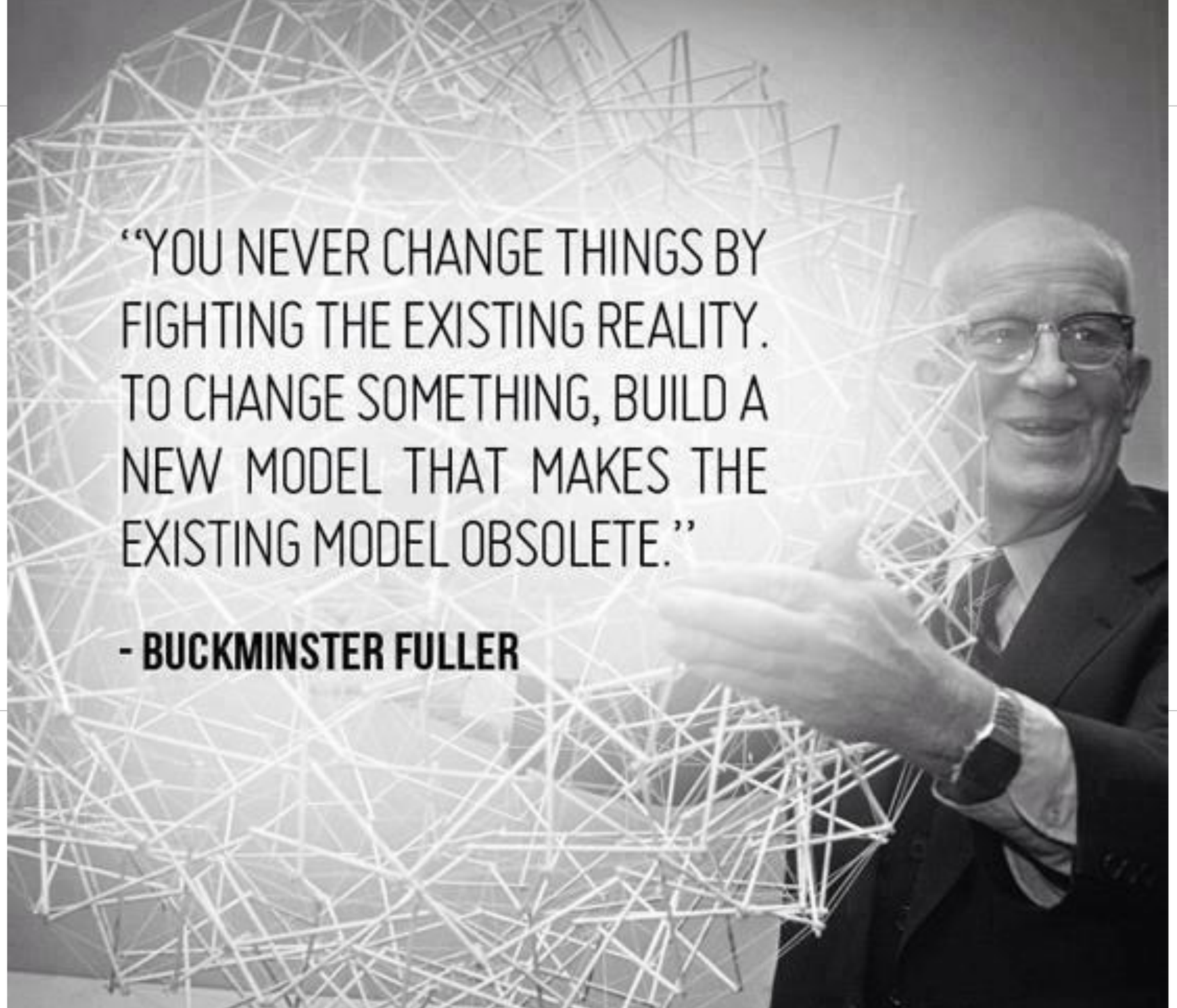
To control and process personal information easily, much like the way you manage a smartphone.

What is the HAT (Hub-of-all-things)?

To create a primary data exchange, you need 2 crucial artefacts

The personal data store/account

The exchange infrastructure


"YOU NEVER CHANGE THINGS BY FIGHTING THE EXISTING REALITY. TO CHANGE SOMETHING, BUILD A NEW MODEL THAT MAKES THE EXISTING MODEL OBSOLETE."
- BUCKMINSTER FULLER

The existing model

Your 'user account'

Every app has one

Let's make user accounts obsolete

Rise..... personal data accounts

Powered by the HAT

The HAT PMDA is a 'user account'

- It behaves like one
- It authenticates just as fast as your own app's user account
- It is secure. Apps can keep the data (and so can the user); but they don't really need to
- Apps don't even need to build their own user account

And HATs are better....for 4 reasons.

1. HATs will have more data

Collectively, we will be generating more and more data, especially with Internet-of-Things

That means the Internet of the Future will have more data than the Internet of the now

That also means, if we start collecting all our data now, HATs will have more data than any company on the Internet (on a distributed basis)

Market Power, People Power

That means that applications built on HATs will have richer, better datasets, capable of better personalisation, and privacy preserving data exchanges

HAT data can provide a better service

2. HATs can share data more efficiently, in a privacy preserving way, than other platforms

Slicing and dicing to share data vertically (health, finance, social media)
AND
horizontally (by time, by location, by sentiment)

PRIVATELY

3. HAT Apps can be built faster, easier and less risky in using personal data

One single sign on with a HAT, build the service/views with APIs

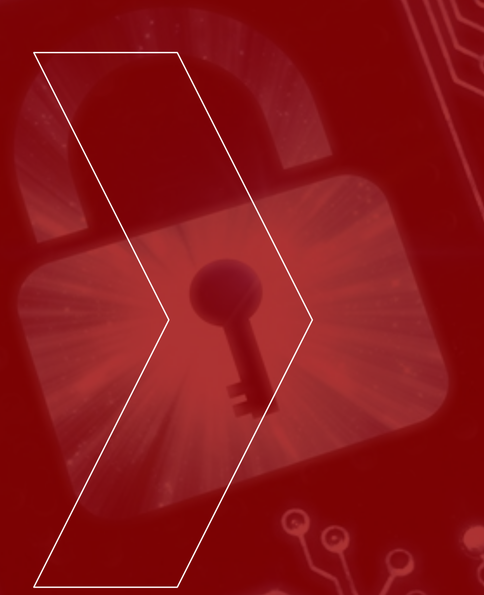
4. Full shareable, fully in user control

We might finally feel safe again on the Internet

Building the future Internet

The current inefficient data exchanges

Move me to...



New apps with my HAT as a user account

Powered by the HAT

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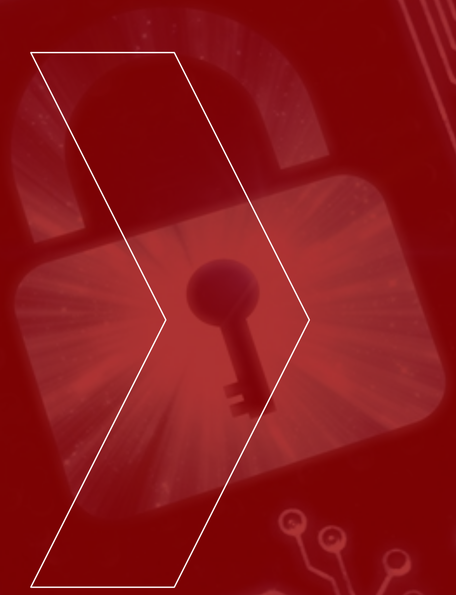
The current inefficient data exchanges

Move me to...



HAT as a student account

Powered by the HAT

Building the future Internet

The current inefficient data exchanges

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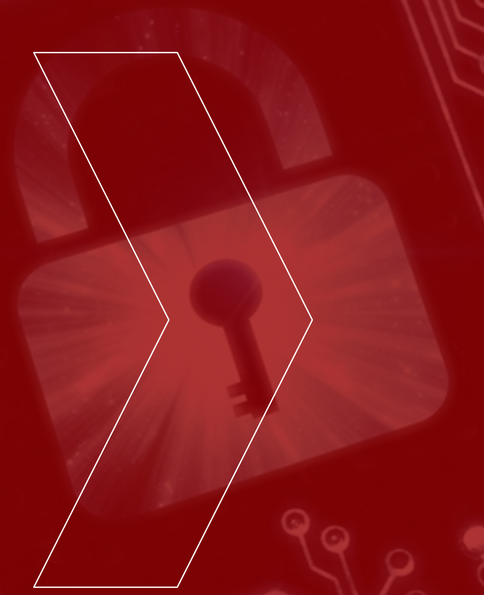

Public services with HAT as the digital citizen

Powered by the HAT

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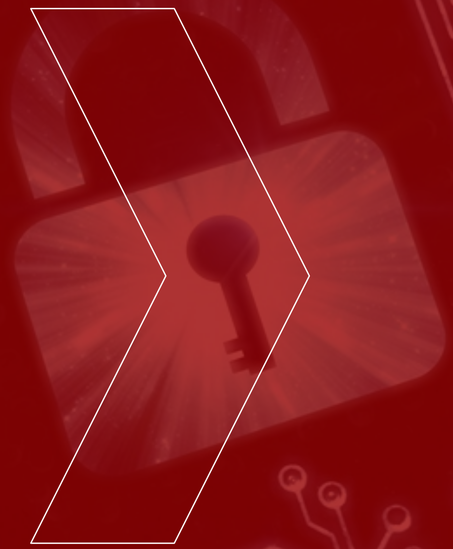
The current inefficient data exchanges

Move me to...



Community services with HAT as the digital user

Powered by the HAT

Building the future Internet

The current inefficient data exchanges

Move me to...

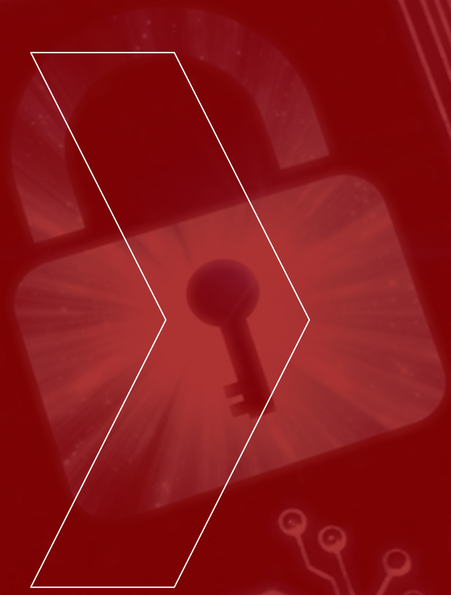
Commercial services with HAT as the customer

Powered by the HAT

Building the future Internet

The current inefficient data exchanges

Move me to...



Private services with HAT-to-HAT private spaces without any third party

Powered by the HAT

Building the future Internet

The current inefficient data exchanges

Move me to...

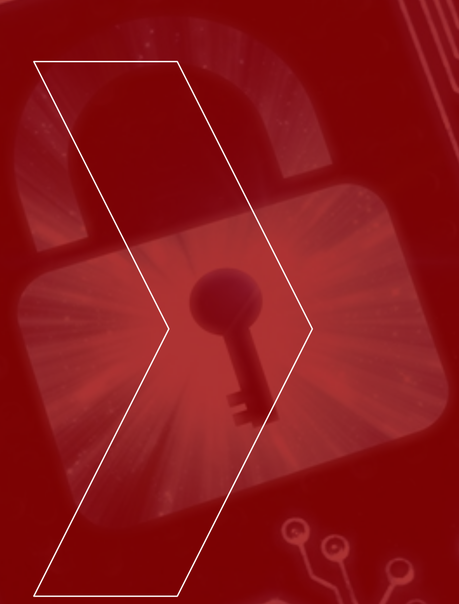
Better relationship with the current Internet

Powered by the HAT

Building the future Internet

My email
My messages
My personal data
My apps

Move me to...



Safety
Control
Privacy
Choice

HAT

Powered by the HAT

How does it work?

HAT Open Innovation Ecosystem

Building Space
Researchers
Students
Equity
Startups

Public apps

Private apps

Commercial apps

Who's involved?

University of the West of England, BRISTOL

UNIVERSITY OF CAMBRIDGE

WARWICK THE UNIVERSITY OF WARWICK

WMG THE UNIVERSITY OF WARWICK

Digital Economy — Transforming Business and Society

More than £3m funding for HAT grants from EPSRC/RCUK from 2013-2017

GOV.UK

THE UNIVERSITY of EDINBURGH

The University of Nottingham

UNIVERSITY OF SURREY

Who’s being invited to get involved?

To scale the HAT open innovation platform

Bill & Melinda Gates foundation

Big Society Capital

GOV.UK

nesta

British Business Bank

Innovate UK

wellcome trust

Impetus Private Equity Foundation

Department for Business, Energy & Industrial Strategy

Our Global Community

300 live HAT users, now, technology ready to scale

USA	UK	Japan	Singapore	Malaysia
New York, San Jose, Cleveland	London, Cambridge, Warwick Surrey	Tokyo		

500,000 live HAT users forecast by 2018, sustainable growth by 2019

Join the HAT Foundation Group, and help us scale

Join our **community**

search for us online at hubofallthings.slack.com

request an invite from jonathan.holtby@hatdex.org

Subscribe to: **#madhatters**

register for the weekly newsletter www.hubofallthings.com

find us on twitter - search #madhatters

Register to: **#getahat**

download your HAT online for free www.hubofallthings.com

find us on the Apple App Store

Available on the App Store

Research, Design and Roll out of the HAT platform

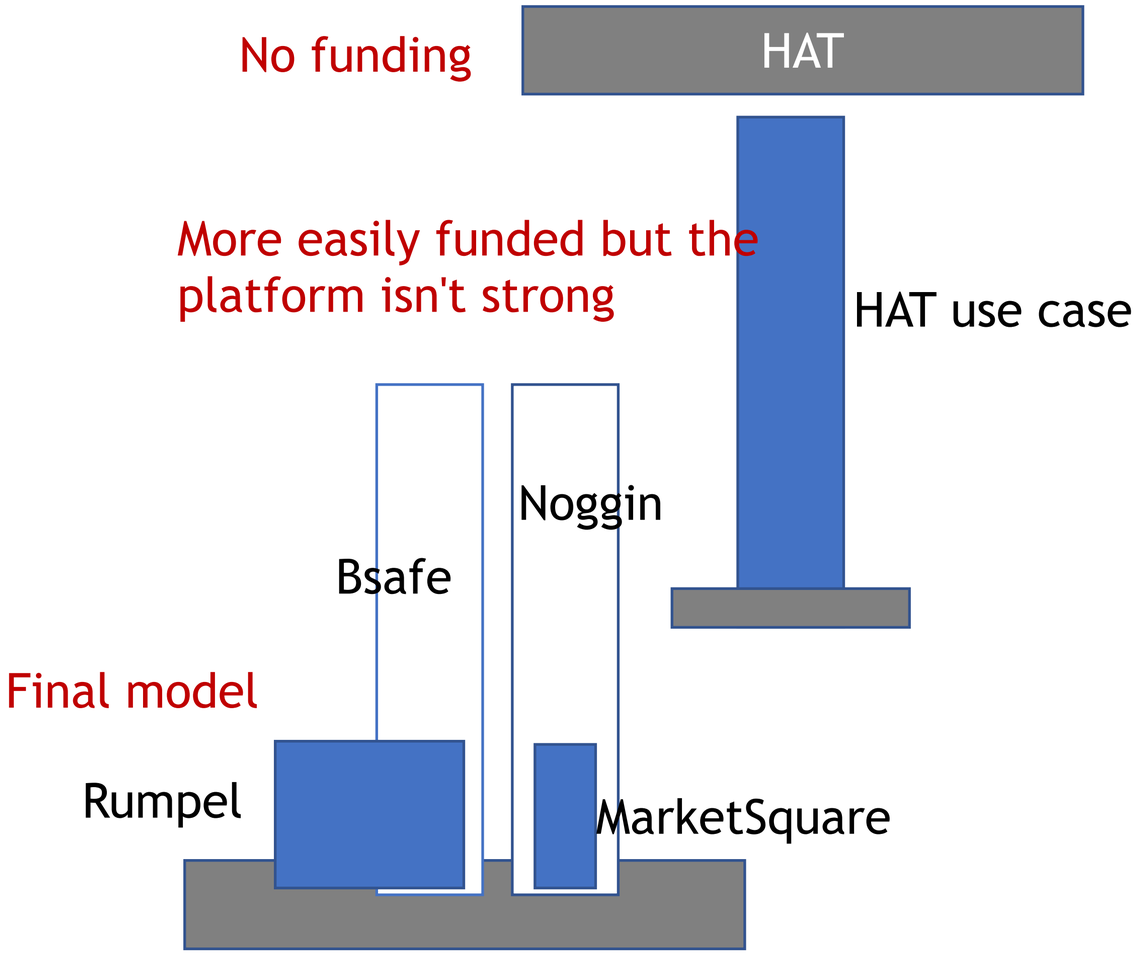
Personal Data Store/Account

design principles a personal data account/store should follow

Based on > £3m EPSRC/RCUK Funding on personal data platform design

Platform roll out: pressure to be vertical

- "What is your use case?"
- "What are users using the HAT for?"
- "You've got to give users a superior value proposition"
- Even wanting to stay horizontal is incredibly hard
- Are platforms only possible through evolution of the verticals?
- How do we think about platforms as a service/infrastructure v service/vertical?



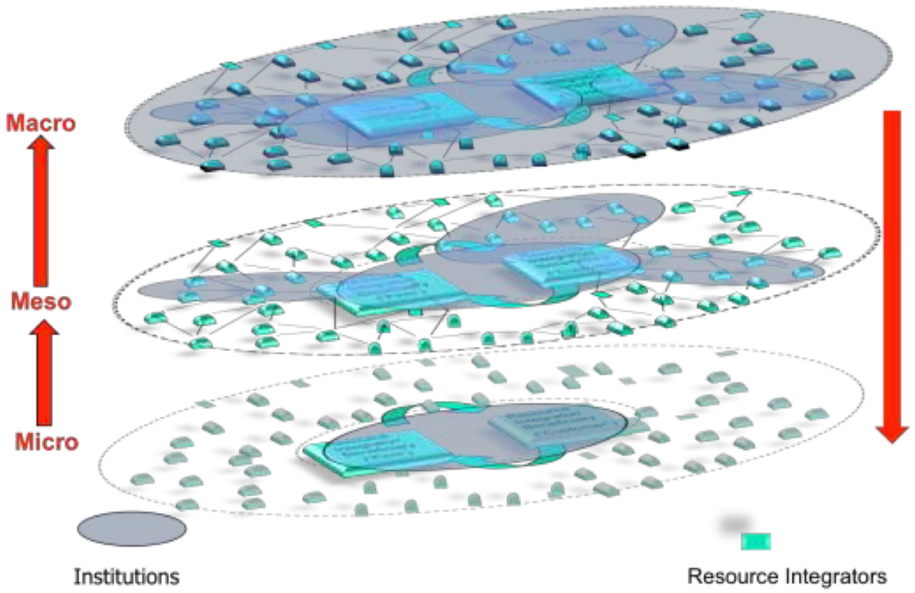
How do you view this analytically

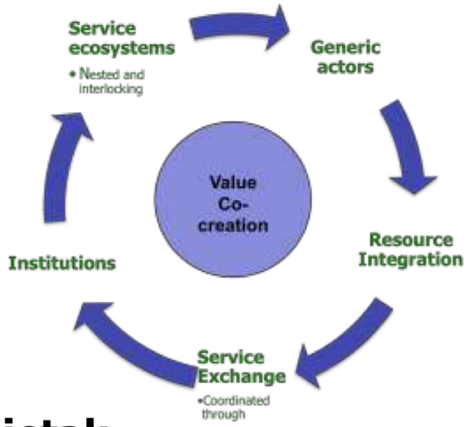
- From an SD Logic point of view
  - Institutions
  - any structure or mechanism of social order and cooperation governing the behavior of a set of individuals within a given human
  - Service Ecosystems
  - relatively self-contained, self- adjusting systems of resource-integrating actors connected by shared institutional logics and mutual value creation through service

"Hip-Pocket" S-D Logic

S-D Logic

Components &Structural Perspectives





Societal:
National, Global, etc

(Sub)culture:
Brand, Market, "industry, etc

Exchange
B2C, B2B, C2C, etc

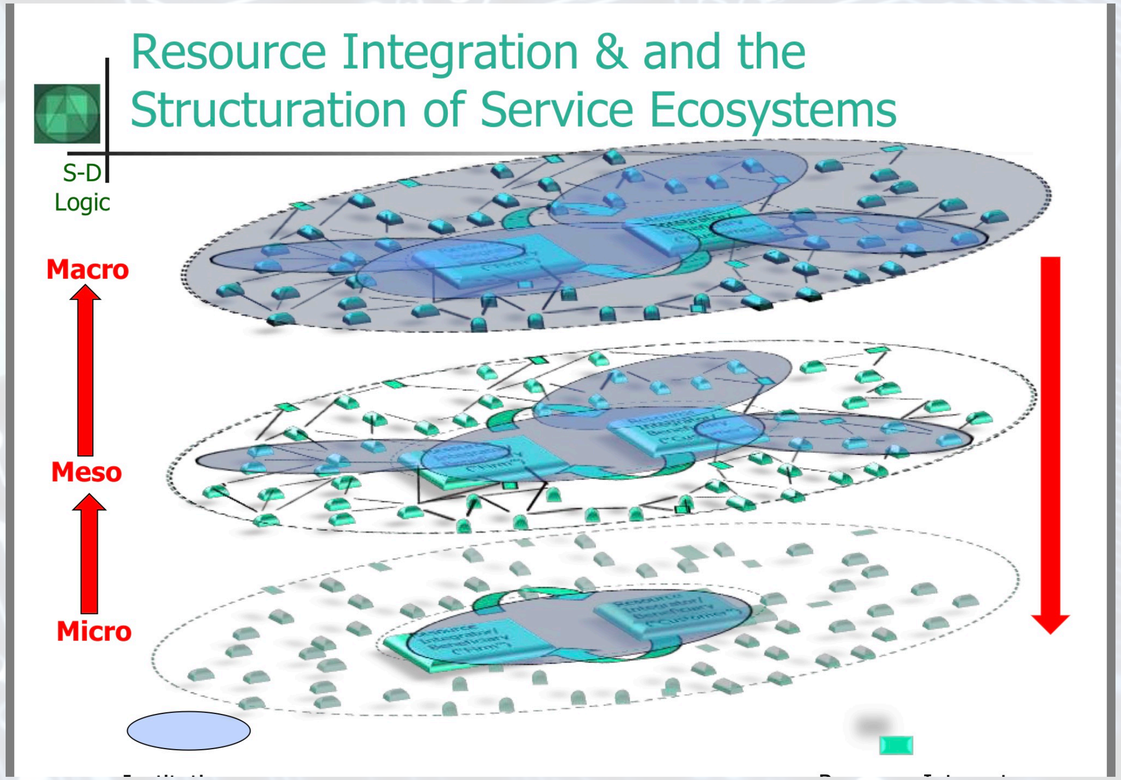
Societal benefit

↓

Micro interactions

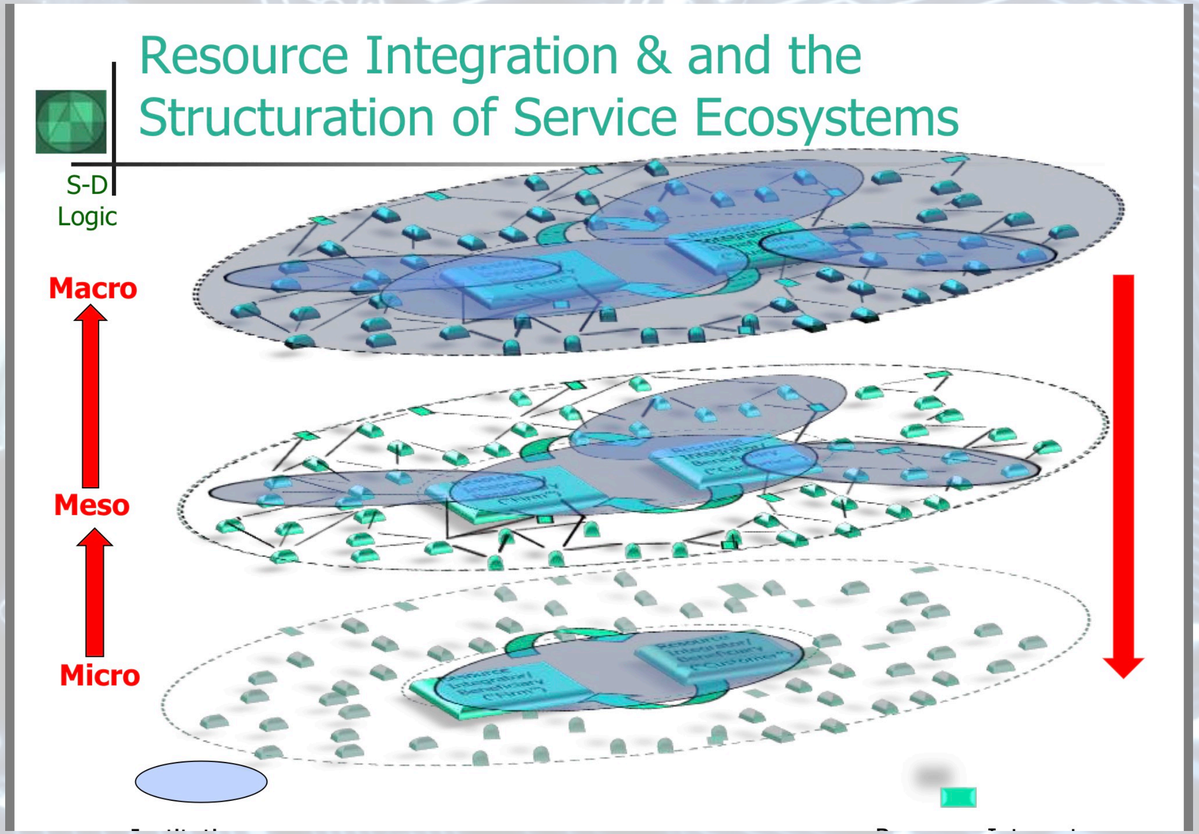
1. The personal data store must be open-sourced - at the core (even if services to and from the core is commercial)

- To ensure that the handling of private data is fully transparent to those who wish to scrutinise the code
- Open-innovation would result in more communities building up services on the platform
- Need to build public, community and private services



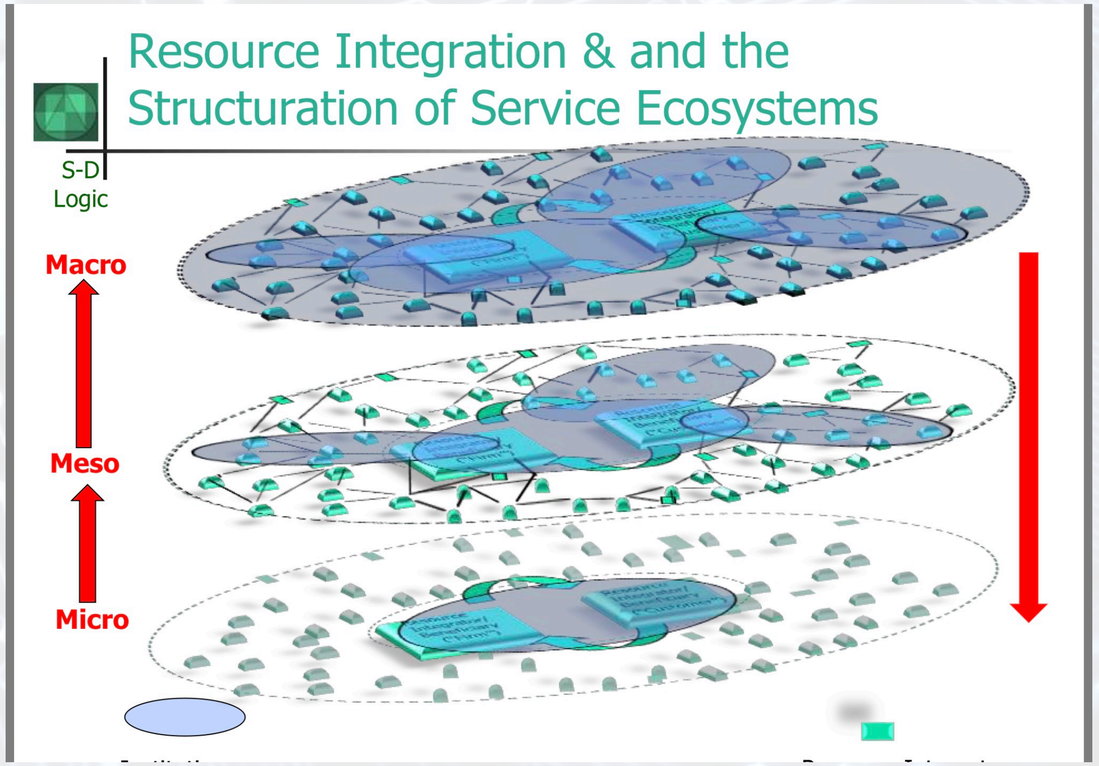
2. The Personal Data Store must be Portable between all cloud systems

To prevent economic 'lock-in' and to let others compete fairly



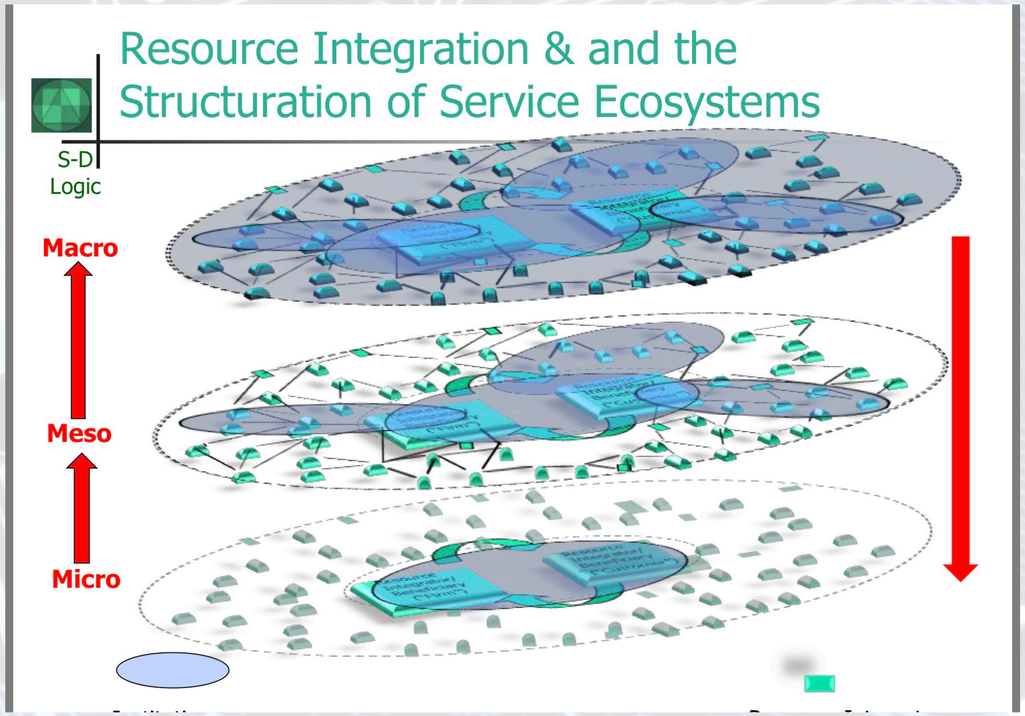
3. Personal data store/account has to be future proof for all future personal data uses

- One way to future proof personal data exchange is through ownership of data stores instead of merely rights, so that custodial and 'super' rights can guarantee future access
- users become stakeholder in their own data, its uses, its quality and as digital assets
- Bestowing the database with a Bundle of rights under property law 1790, simplified in 1925
  - Right of possession
  - Right of control
  - Right of enjoyment
  - Right of exclusion
  - Right of disposition



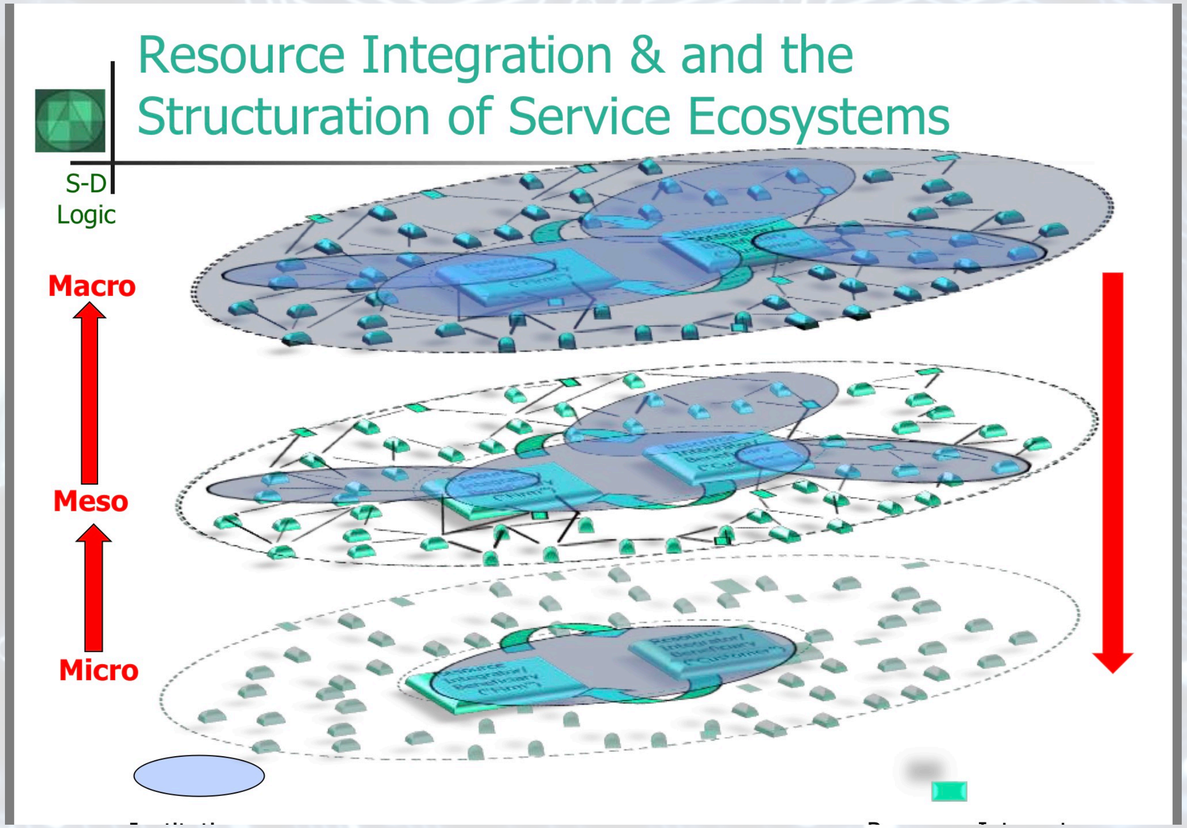
4. Private by default, with no leakage of data

- Able for third parties to build new services for users themselves on their own platform without having to buy services (i.e. without data sharing) - much like a PC not connected to the Internet
- Allow for purchase of services with money, not just with data
- No means no. Cancellable Data debits. Apps use of data certified & rated

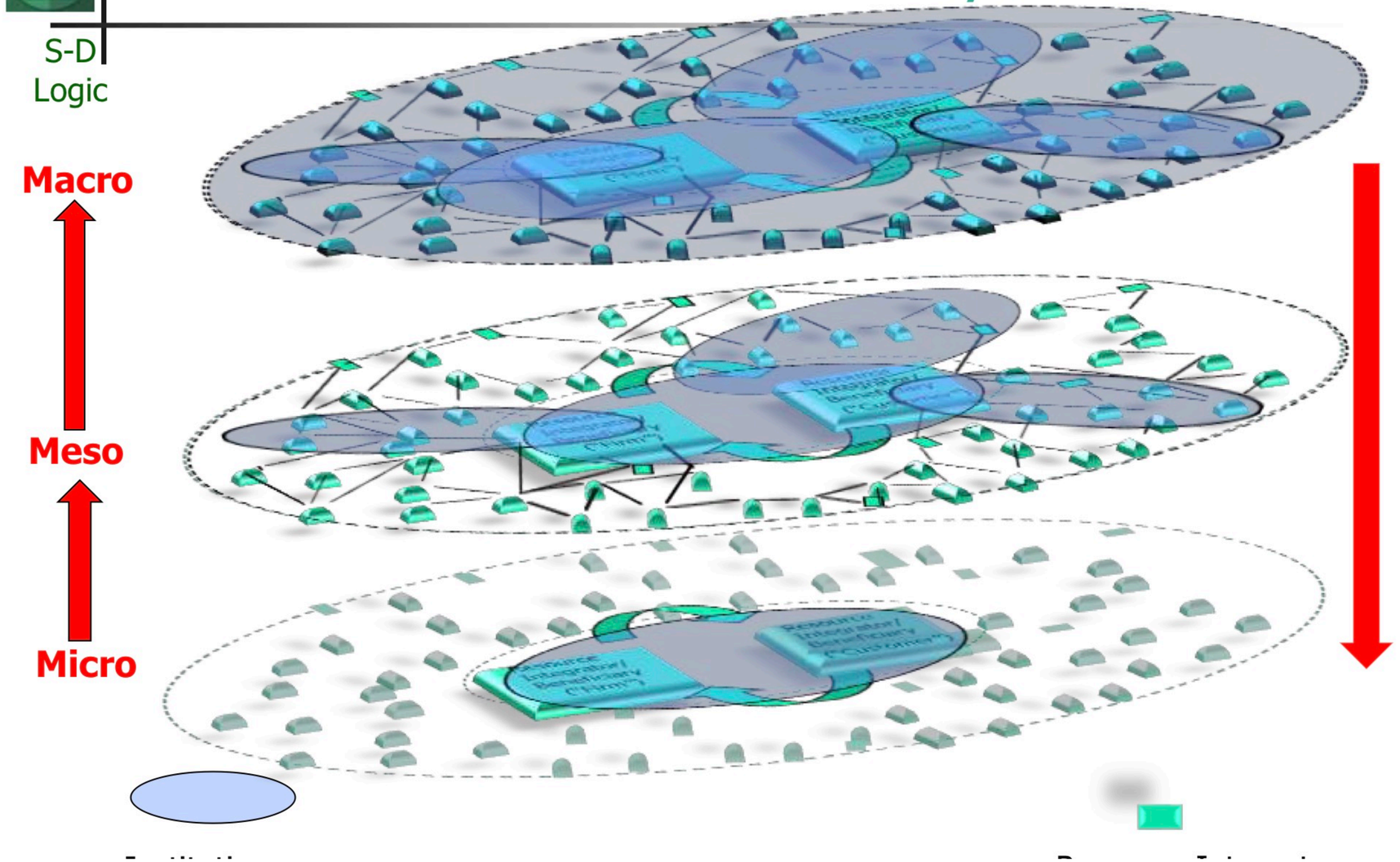


5. Market-making

Allow brand owners (e.g. Banks, Insurance companies, new startups) to brand the private data account and customise it in the way they want to be consistent with their own branding initiatives for their customers for their own data exchange use cases



Resource Integration & and the Structuration of Service Ecosystems



http://www.sdlogic.net/uploads/3/4/0/3/34033484/warwick_2014_pres.short.pdf

From reflection to shaping

- How do we make it work? How do we make it successful?
- Academic v activism
- Where is the mid range theory?