

The Qiy Scheme

A human-centric solution to access, manage and share personal data

This paper presents a personal data management system that is independent of political or commercial interests. It describes a model that is based on a human-centric approach to the managing and processing of personal data. The approach is aimed at bringing people in control of their personal data by providing tools for digital self-determination.

Simultaneously, it provides for new opportunities for businesses to develop innovative personal data services on the basis of mutual trust. What's new is the fact that people can become an integrated part of the online digital world, which allows them to exercise control over their personal data by determining by themselves whether, with whom, for which purpose(s) and for how long they want to share which of their personal data.

The system described in this paper takes the form of a scheme (the 'Qiy Scheme') that consists of an open and

interoperable technical standard, an organisational layer and a legal layer. Based upon the Qiy Scheme, network providers can develop infrastructure that allows people to easily and securely access their personal data from many different sources and share it under their control with trusted parties within the network.

The Qiy Scheme has been developed by an independent organisation: the Qiy Foundation. It has been operational since January 2015 thanks to the work and support of many organisations, amongst which are ABN Amro, Accenture, Aegon, APG, Equens, ICS, ING Bank, Intrasure, de Volksbank, Motiv ICT Security, RTL, SIDN, Vodafone, Ziggo (Liberty Global) and several departments of the government of The Netherlands.

A growing list of members can be found at: www.qiyfoundation.org/membership/

index

1 Qiy Trust Principles	3
2 Qiy Trust Network	4
3 Benefits of the Qiy Trust Network	5
4 Qiy Scheme	6
5 Digital Self-determination for everyone!	9
6 The next steps!	12

1 | Qiy Trust Principles

The Qiy Trust Principles provide a basis for trust in the exchange of personal data. All parties that choose to provide services on the basis of the Qiy Scheme must therefore respect the following Qiy Trust Principles.



Anonymity

When I want to connect to another person or to an organisation, I shall be anonymous until I choose to identify myself.



Qiy Node

A Qiy Node is the single point of entry to my personal data. Via my Qiy Node I can transfer my data to any other person or organisation that adheres to the Qiy Scheme and is connected to the Qiy Trust Network.



Privacy statement

Qiy Trust Principles shall take precedence over privacy statements of organisations that are connected to the Qiy Trust Network. In case of conflict the privacy statements offering the higher protection shall take precedence.



Consent

Unless legislation requires otherwise, my data shall be used with my consent only. I can withdraw my consent at any time, unless legislation or contractual obligations prevent me from doing so.



Transparency

Organisations shall explain to me clearly what they intend to do with my data and why; they shall live up to their promises.



Purpose limitation

An organisation shall only process personal data that is necessary for the purpose(s) for which this data has been shared by me.



Data minimisation

An organisation shall not process more personal data than adequate, relevant and limited to what is necessary in relation to the stated purpose(s).



Data erasure

Unless legislation requires otherwise, my personal data shall be erased as soon as this data is no longer necessary for the stated purpose(s) or when I withdraw my consent.



Rectification

I have the right to rectify inaccurate -or to complement incomplete- personal data.



Data protection

My personal data shall be processed in a secure and trustworthy manner.



Compliance and enforcement

Any party that is connected to the Qiy Trust Network and processes my personal data, shall protect this data in accordance with the requirements of the Qiy Scheme.

2 | Qiy Trust Network

The Qiy Trust Network offers people control, insights and overview

The Qiy Trust Network connects people to their personal data. It enables people to access and use their data for their own purposes and to share it with people and organisations of their choice, provided that these are also connected to the Qiy Trust Network. Organisations can invite people to connect to them through the Qiy Trust Network. Connected applications help people to access and control their personal data.

The Qiy Trust Network is a distributed virtual infrastructure in the form of a new trust layer that is built on top of the existing Internet. Market parties that adhere to the Qiy Scheme can either build their own infrastructure, which then becomes part of the overarching Qiy Trust Network, or they can connect to the Qiy Trust Network using the services of a Qiy Trust Network provider.

When someone chooses to connect to an organisation, this connection will be anonymous. Despite the anonymity, a communication channel is created between the organisation and the

person who chose to connect. In order to serve relevant information or offers. The organisation can ask the anonymous person to share information about lifestyle or interests. An organisation can also ask an anonymous person to provide validated information on his or her age category, income level or whether or not he or she is a student.

The Qiy Trust Network connects people to organisations without using intermediary services of which the controllers may access, analyse or re-use the data that they process for their own purposes by exploiting a two-sided market. All persons, organisations and devices that are connected to the Qiy Trust Network can communicate with each other. This promotes interoperability and platform neutrality.

People and organisations can choose their own provider to connect to the Qiy Trust Network and they can also choose to use (or develop) any Qiy Scheme compatible application.

The Qiy Trust Network is based on digital self-determination

The current Internet offers us great convenience and many advantages. There is also a downside: it is not clear what data were recorded. Who recorded them? Why were they collected? Which data was shared again? With whom? And why?

If people do not know what happens with their data, can there be privacy? The economy is increasingly dependent on trust in the online world. The question arises whether there can be trust without digital self-determination.

Trusted exchange of validated data

The Qiy Trust Network allows people to access in a secure, trustworthy and reliable manner, access to the authentic sources of their personal data within government, businesses or to online repositories of their own. Under their own control they can then reuse this data by making it available to third parties of their choice, provided that those third parties are connected to the Qiy Trust Network. As the data cannot be changed during transportation, the third party can rely on the fact that the data received equals the data at the source where the data comes from. The receiving party can also identify the source where the data comes from. This source, however, cannot identify the receiving party (Privacy by Design principles).

Whenever people want to access their personal data at a source, this source will determine with which authentication tool they need to identify themselves with, in order to access the personal data.

Qiy is not the solution!

The Qiy Foundation itself does not provide solutions. The Qiy Foundation merely facilitates the collaboration of public and private parties in developing the Qiy Scheme. Market parties embracing the Qiy Scheme develop the infrastructure, the solutions, the products and the services.

Take a look at the video 'Qiy turns the world upside down' on the website of the Qiy Foundation: www.qiyfoundation.org

3 | Benefits of the Qiy Trust Network

The Qiy Trust Principles are aligned with the European General Data Protection Regulation



Benefits for people

Personal

1. Access to personal data at connected organisations
2. No need to copy all personal data, as it is always available through the 1-on-1 connection with organisations
3. Overview over one's data
4. More relevant services as connected organisations can subscribe to specific -yet anonymous- data of customers.
5. Insight in one's personal situation using apps that interpret data (AI)

Privacy

1. People know what organisations do with their data
2. Connected organisations accept the Qiy Trust Principles
3. Connected organisations only ask personal data they really need to deliver the service
4. Privacy by Design: parties receiving personal data can identify the source, but the source cannot identify the receiving party
5. End-to-end encryption of personal data and a decreased amount of personal data at organisations



Benefits for organisations

Business

1. Validated personal data coming right from the source
2. Lower costs to get quality data
3. Customers can grant your organisation access (one-time off or on a subscription basis) to their preferences
4. Dynamic data: subscribe to current (and validated) data
5. Get to know your customer not by collecting, but by connecting

Privacy and security

1. In line with current and upcoming European Law: General Data Protection Regulation (GDPR), PSD2, ePrivacy Regulation, other upcoming Digital Single Market (DSM) initiatives
2. Prevents (both under GDPR and PSD2) responsibility and liability in case of transferring personal data to others
3. Based on Privacy by Design principles
4. Offering models for platform neutrality and interoperability across converging media
5. Embedded security features



Benefits for society

1. Enabling sustainable socio-economic growth based on trust
2. Restoring the balance between people and organisations when it comes to control over personal data
3. Better informed people making informed choices of their own
4. Helping people to easily generate overviews of their (financial or medical) data and insights into their personal situation
5. Provide an alternative to the major online social media platforms
6. Remedy market failures that have led to significant market power resulting in monopolistic behavior of the dominant social media platforms

4 | Qiy Scheme

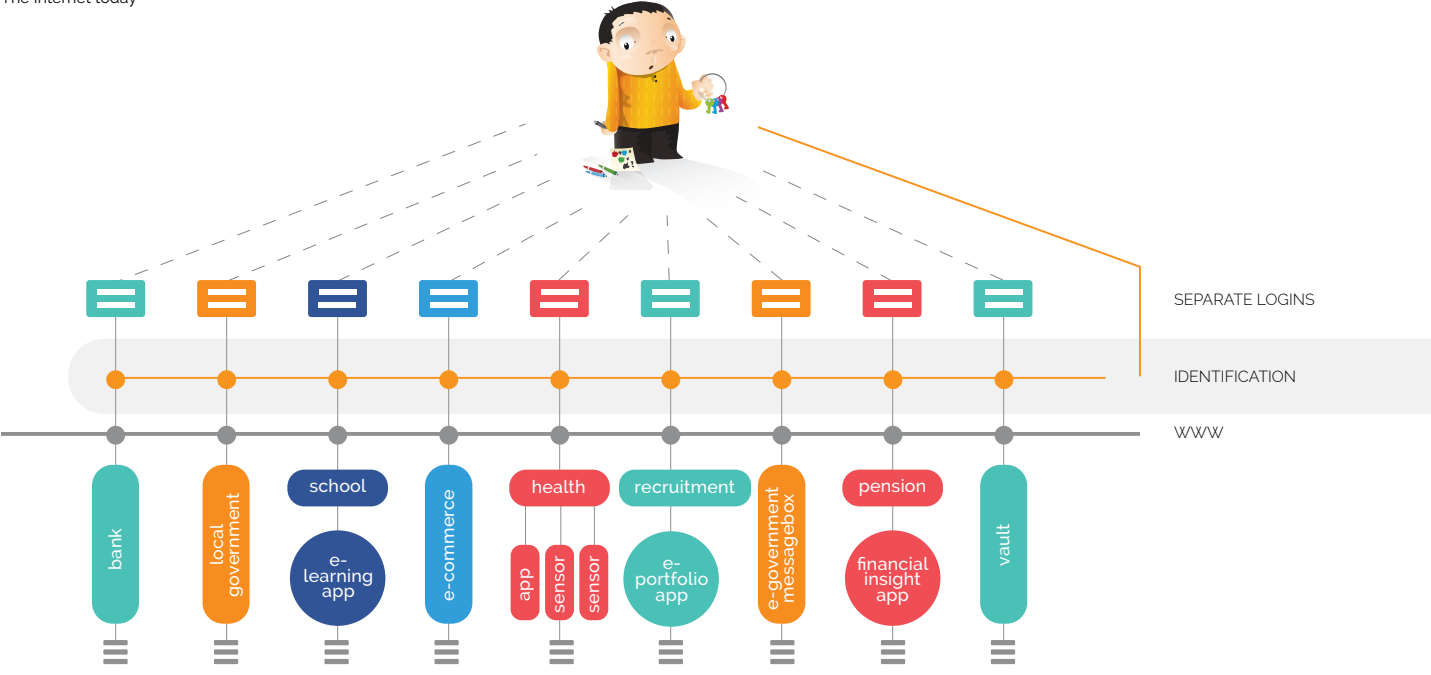
Why do we need a scheme?

The current fragmentation of personal data is a clear case of a 'many to many challenge'. Every individual has data in many places and most organisations hold data of many people. Similar challenges have been tackled in the organisation of other global markets, including telecom and payment markets. Key in advancing fragmented markets is some form of collaboration between competing parties. The form of such collaboration is often called a 'scheme'. Well-known examples of schemes in two sided markets are credit cards (Visa, MasterCard), Internet (W3C) and GSM (GSM Association) for mobile telephony.

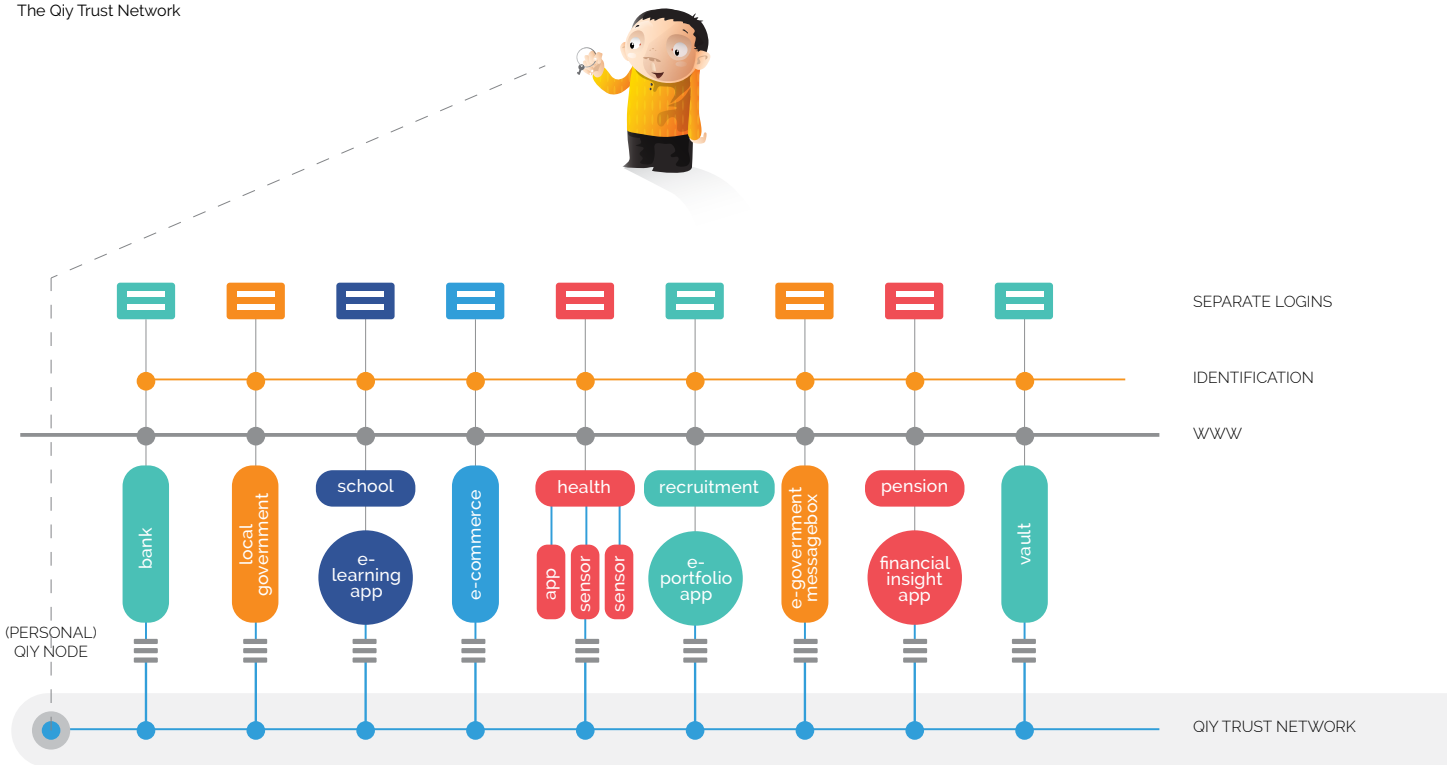
The Qiy Scheme is "turning the Internet upside down and making privacy a fundamental layer of any networked interaction in the post Google and Facebook era. How the individuals will gain control. How social networks will have to adapt their business models. How privacy will return. One of the most advanced models behind Life Management Platforms is Qiy."

Kuppinger Cole. Life Management Platforms

The Internet today



The Qiy Trust Network

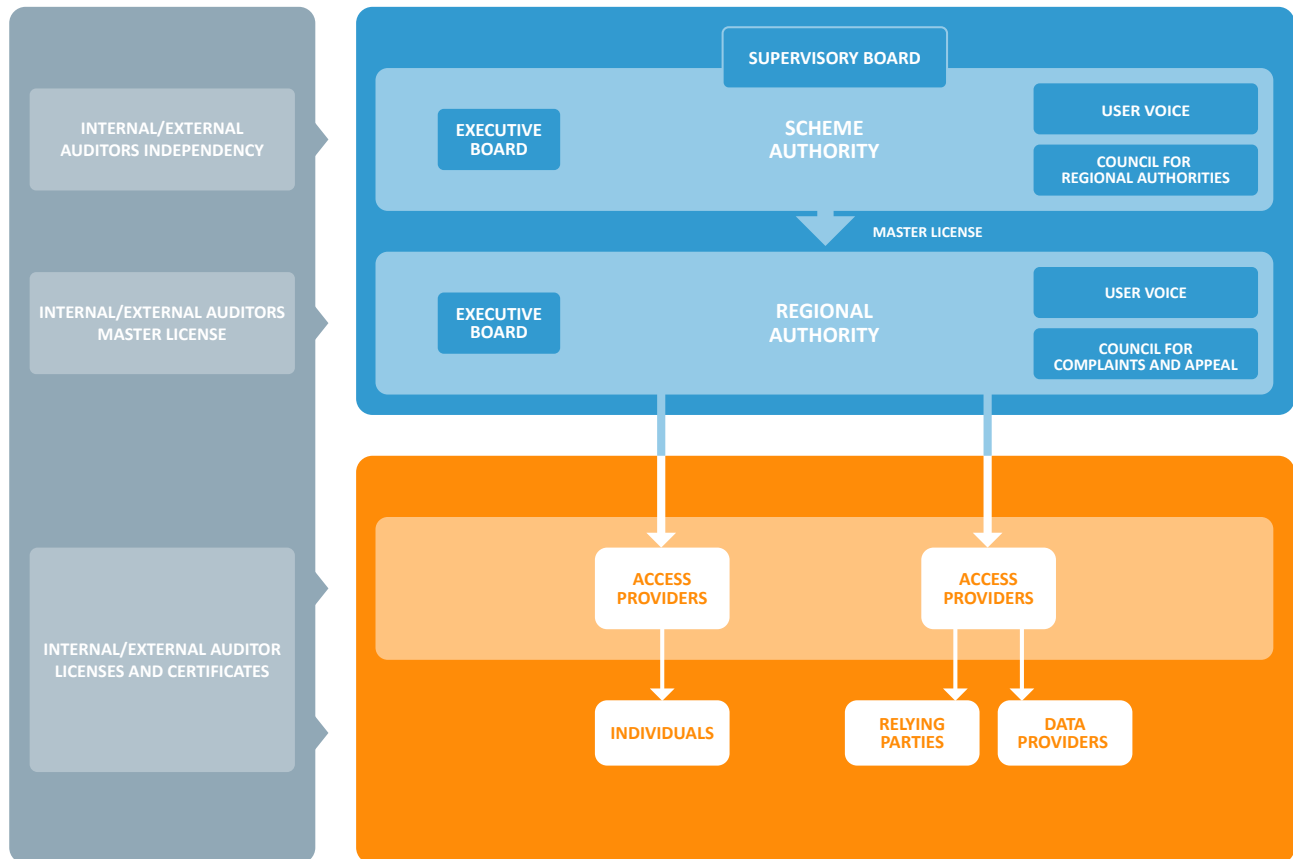


How is the Qiy Scheme organised?

The governance model is built on the concept of the Trias Politica: the division of powers into three branches, each with separate and independent powers and areas of responsibility so that the powers of one branch are not in conflict with the

powers associated with the other branches. The typical division of these three branches is into a legislative, an executive and a judiciary branch.

Governance Model overview



The judiciary branch

At all times services that are based upon the Qiy Scheme shall be open, transparent and non-discriminatory. To ensure this, appropriate audits and sanctions shall be in place at both the national and the international levels. An independent monitoring mechanism is in place that allows for checks on the different parties in the executive branch to assess their adherence to the Rules and Regulations as set by the Scheme Authority. It also monitors the behaviour of the Scheme Authority and the Regional Authorities to ensure that these act in accordance with the Qiy Scheme.

The legislative branch

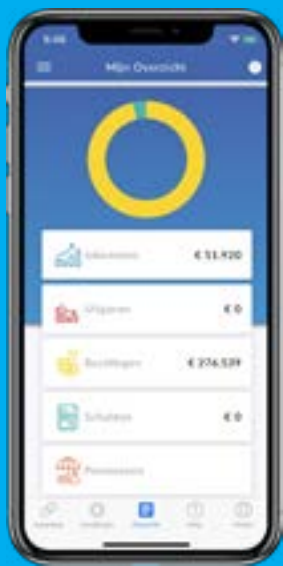
The Qiy Scheme is managed through an independent and international organisation, called the Scheme Authority. At the national level, a Regional Authority will be responsible for the implementation of the Scheme in that national market. At all times the independence of the Scheme Authority and its national 'branches' shall be warranted. Also, at all times the Scheme shall be open and non-discriminatory in its implementation. Qiy Foundation fulfils the role of Scheme Authority.

The executive branch

Competing Access Providers offer services to individuals that want to connect to the Qiy Trust Network. They also connect repositories of personal data and organisations that offer services that rely on personal data.

5 | Digital Self-determination for everyone!

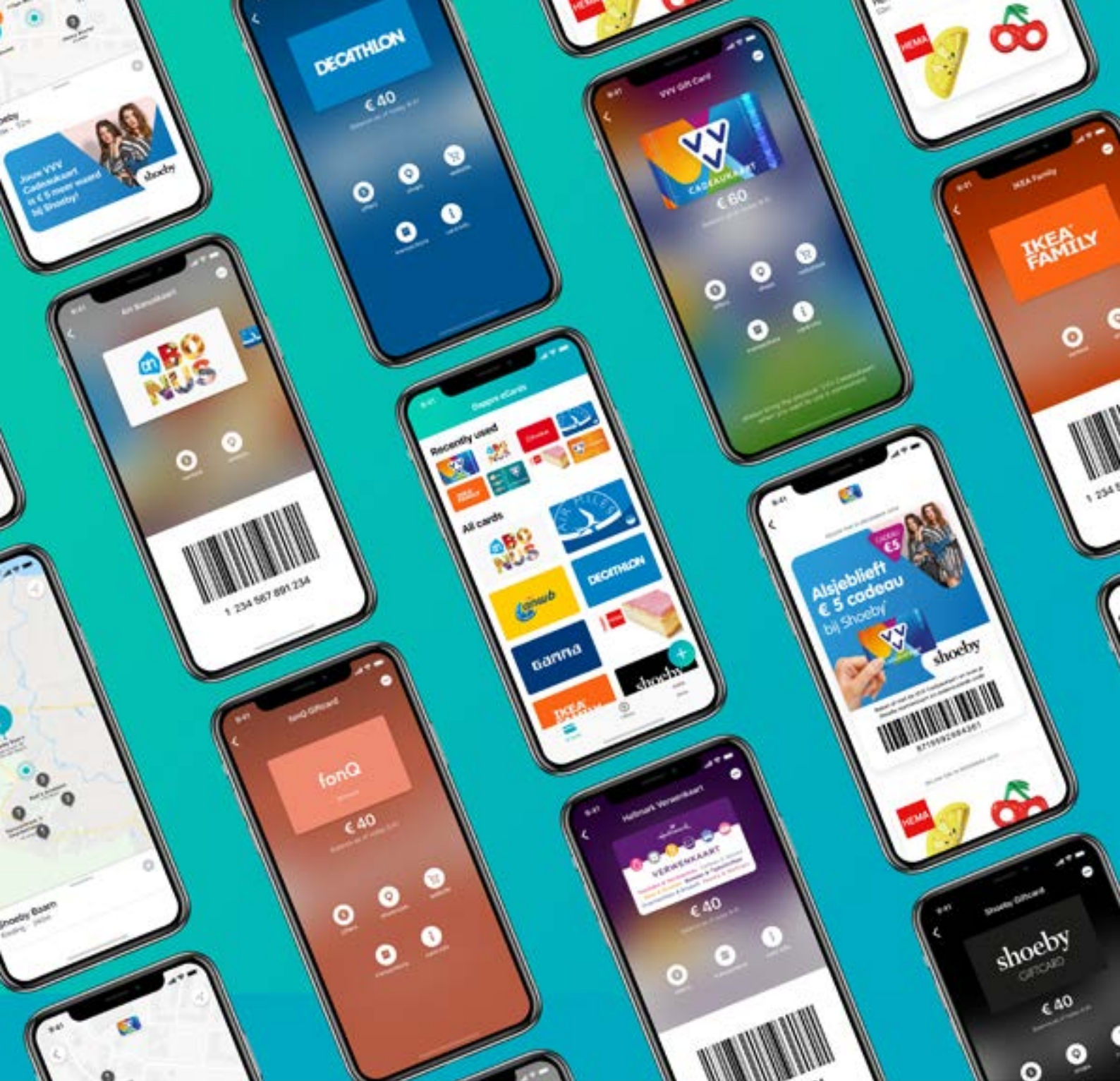
People are connected to the Qiy Trust Network by way of a Qiy Node that was provided to them by their Qiy Trust Network Provider. This can be e.g. a bank, the local government or the telecom provider of choice. It can be any market party operating a service which is compliant with the Qiy Scheme. Also an authorised 'Qiy connected app' could be used to connect an individual to the Qiy Trust Network.



USE CASE 1 Connect to validated data

People want to have an overview of their financial situation. They can choose one of the available Qiy connected apps, like fKks or Financial Passport. People use a Qiy connected app to connect to their data at their municipality in order to get an overview of their local taxes. The municipality is connected to the Qiy Trust Network as well.

After digitally identifying and authenticating themselves once at the municipality, the Qiy connected app can access the pseudonymised and standardised financial data held by the municipality. Now people can share validated data with other people and organisations.



USE CASE 2

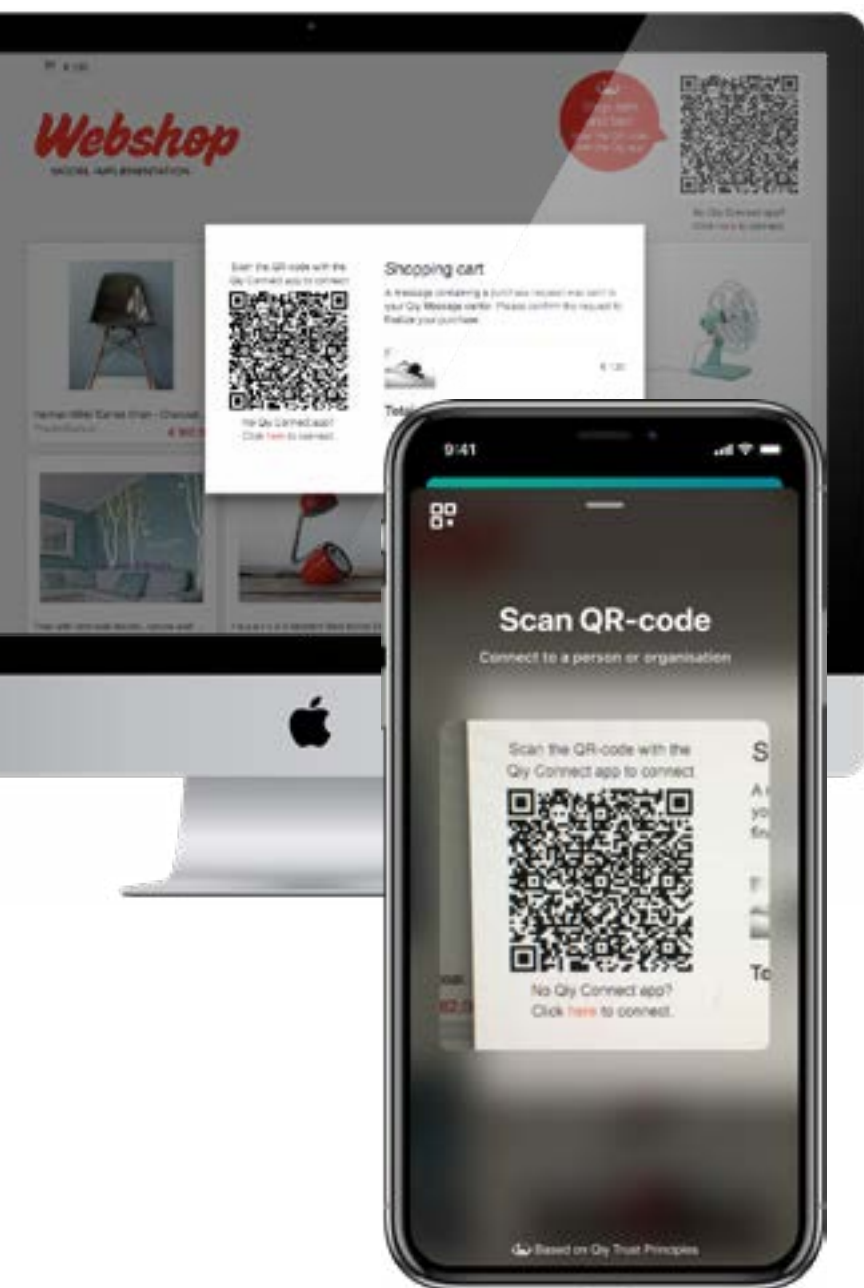
Dappre, the loyalty and gift cards app that respects your privacy

People download Dappre on their phone and can add not only loyalty cards, but also gift cards like the VVV and Hallmark gift cards.

Now they can check their actual balance, find shops, restaurants and more nearby and see relevant offers, without personal data tracking, unwanted advertising or any data use without their consent. The trust connection is controlled by individuals: they decide to share their anonymous preferences with for example food retailers to be able to receive vegetarian menu's on Friday afternoon and special offers related to their preferences.



[Download Dappre](#)



USE CASE 3

Buy online without opening an account

Someone visits a webshop online anonymously and fills the shopping cart. The website is connected to the Qiy Trust Network.

1. The buyer proceeds to the check out.
2. At this point the webshop will request the buyer to authenticate himself using his Qiy Node. To connect the Qiy Node to the transaction, the webshop presents a QR code that is used by the buyer's Qiy Node to send a route-initiating message to the webshop server.
3. Using a mobile application, the buyer scans the QR code, which connects his Qiy Node to the transaction on the website. At this point the buyer sees he's connected with the website while the webshop only sees that an anonymous Qiy Node was connected.
4. Optionally, the webshop can request a persistent identifier from the buyer, so that the webshop may recognize this buyer when he visits again.
5. The webshop might ask to subscribe to buyer's shoe size or personal preferences. Please note that the buyer can even remain anonymous, yet still be recognised as a returning customer.

Organisations will have to develop technologies and services that meet the needs of citizens and businesses for more security, flexibility and control in everything they do online. Because services like Qiy provide a solution to this, we follow these initiatives at the Commission with great interest. The concept of Qiy shows us a new way of looking at how to move on the Internet. It is up to the market to determine if this is the solution to the above challenges, but Qiy has a lot of potential.

6 | The next steps!

Qiy is a movement. Solutions based on the Qiy Scheme have a worldwide potential.

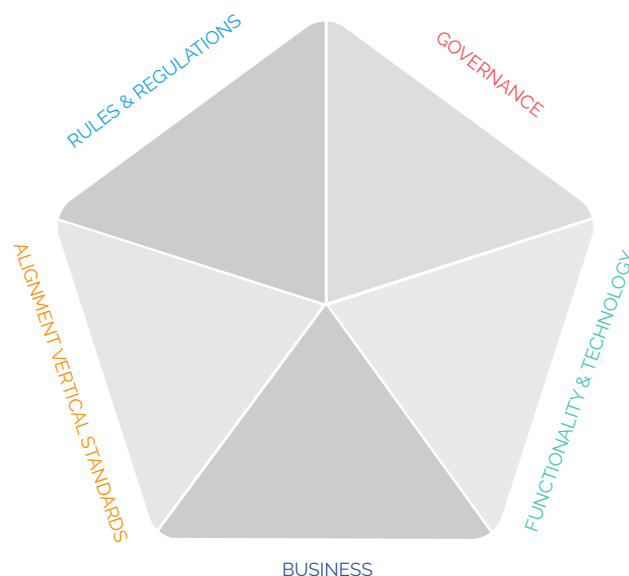
The Qiy Foundation facilitates a pre-competitive form of collaboration for all members. Being involved in the work of the Qiy Foundation therefore means learning to understand what is already there and being able to add expertise in the early stages of the development of a commercial product, during which competitors collaborate. Then, each member can develop its own competitive products and services, giving the individual a reliable, safe, easy and above all seamless experience through the organisation's products and services.

Join the movement and become a member of the Qiy Foundation and discover the benefits of giving people control over their data!

More info: www.qiyfoundation.org/membership/

Contact us at: info@qiyfoundation.org

Or call: +31 411 61 65 65.



“

Imagine a world where everyone has their own space on the Internet, funded from the commons. This is a private space (an organ of the cyborg self) that all our so-called smart devices (also organs) link into.

Instead of thinking of this space as a personal cloud, we must consider it a special, permanent node within a peer-to-peer structure wherein all our various devices (organs) connect to one another.

— **Aral Balkan**, activist, designer, and developer.

<https://aral/notes/encouraging-individual-sovereignty-and-a-healthy-commons/>

People want to have a web they can trust. People want apps that help them do what they want and need to do—without spying on them.

Sir Tim Berners Lee, co-founder of the WWW. CTO at Inrupt.

<https://www.adweek.com/digital/happy-birthday-world-wide-web-fear-not-30-is-the-new-20/>