

## The Time is Right: Build a European Blockchain Infrastructure

Ladies and Gentlemen,

My name is Dieter Rehfeld, CEO at regioIT in Aachen, and I'm here today to tell you about my vision for a fresh approach to handling e-government business, especially the management of citizens' data in the public sector. This approach, known as blockchain, can provide an environment which is secure, efficient, verifiable and money-saving.

What we call blockchain, which is basically a digital ledger, offers governments a game-changing opportunity. My vision is the development, across Europe, of a European public-sector blockchain infrastructure. This can establish Europe as a leader in this field. Together, we can build a new system for managing the ownership of rights of persons and companies. In this secure e-government environment, data is under the control of our citizens.

26 EU Member States, plus Norway and Liechtenstein, have signed a declaration to go forward with blockchain technology. Entitled "Cooperation on a European Blockchain Partnership", this document highlights Europe's wish to drive this cutting-edge technology forward. This will position Europe at the forefront of distributed ledger technology. The goal is to implement blockchain across the entire digital single market in both the public and private sectors. In the words of Mariya Gabriel, Commissioner for the Digital Economy and Society: "In the future, all public services will use blockchain technology. Blockchain is a great opportunity for Europe and Member States to rethink their IT systems, to promote user trust and the protection of personal data, to help create new business opportunities and to establish new areas of leadership, benefiting citizens, public services and companies."

Distributed ledger technology provides us with a unique opportunity for taking our systems of public sector data-handling to a new level. A recent OECD Working Paper on Public Governance outlines the potential benefits of blockchain for the public sector. This paper envisions a range of potential applications for the health, insurance, finance and public sectors. The paper also

describes how blockchain can be the key to decentralized trading of locally generated green energy. Another application is digital voting in public elections. These examples tell us how the broad implementation of blockchain can bring benefits for the public sector.

So are European politicians already alive to the potential of blockchain? In the current year, the EU has invested 80 million Euros in projects using blockchain. A further 300 million is already planned for the coming years. In Germany, politicians have got the message. The federal government of Germany has expressed its firm intention to take blockchain forward. The government declaration foresees the development of a legal framework for blockchain. At the same time, the state government of North Rhine-Westphalia is also pro-active in this story, and is planning government implementation of blockchain technology. Regio iT operates a blockchain lab in Germany together with partners for application development. Regio iT has developed a number of applications based on blockchain.

Why is the blockchain approach significant? Our identities, in particular our digital identities as individuals, are central to the proper functioning of our society and our economy. In the everyday world we carry our identity, our ID card or passport, in our pockets. Digital identity is different.

Currently, digital identities are almost always provided and controlled by some private third-party, often a company like Facebook, Amazon or Google. The big digital corporations control our digital identity. The question is: can we regain control of our digital identity? Can we bring back digital sovereignty to the owner, to the people? Yes, we can. Now we have blockchain as an alternative.

Blockchain brings in the concept of decentralized identities in preference to, as now, centralized identities managed by private monopolies. Centralized means that all identity data becomes the property of the private provider, and therefore under his control. The protection of this data is therefore outside public control.

In contrast, the implementation of blockchain will enable us to build a new identity framework based on the concept of decentralised identities. Such decentralized identities are called self-

sovereign identities or SSI. And a very important aspect is that this SSI paradigm restores control of identity to users. Like an ID card, SSI means identity in the user's hand.

The blockchain approach is not completely new, but is built on existing tried-and-trusted technologies. Blockchain is a very smart combination of well-known, proven technologies. For communication across the decentralized network, we implement proven technologies, such as peer-to-peer. In blockchain, identification and authentication are achieved through cryptography in the form of public-private key systems. Hash-value concepts exclude data falsification, and timestamps record the order of transactions. And the technical and mathematical basis of blockchain has a firm scientific foundation.

So how can blockchain help in the public sector? Since Bitcoin we understand that the transfer of "money" without banks, is, in reality, about the transfer of rights. In Bitcoin, ownership is transferred from person A to person B. Ownership rights can never be assigned to two people, organizations or objects at the same time. Blockchain technology thus excludes what is called the double spending problem. Blockchain offers for government agencies new and promising perspectives for efficient transfer of rights. This has great money-saving potential.

For citizens and companies, everyday life is often about proving ownership of rights. When a house is sold, an entry in the property ownership register is proof that the seller really owns the property he or she is selling. The same applies when cars are bought and sold. The birth of a child is registered. Keeping a record of all of these different rights in registers, storing the data and updating the data when rights change, is a task essential to government agencies. We need clarity in relation to the ownership of rights. This is why the concept of blockchain, to redesign public sector certification processes, is so very attractive: the transaction costs for companies and citizens can be radically cut.

Here's why. At the twenty seventeen IT Summit of the German government, regio iT has demonstrated that blockchain technology enables digital validation of academic qualifications for online job applications. Looking to rent a vehicle? Online checking that you possess the correct

driving licence will be possible. Possible because distributed ledger brings together existing registers and the process of validation. These are just some examples which demonstrate the value of building a government infrastructure in Europe. This will empower government agencies across the EU to provide online access to the relevant registers. Going forward, all European companies and citizens can obtain all certificates and proof of rights much more easily, much more efficiently and much more cheaply.

How can we create a government blockchain infrastructure for the EU? The foundation for a European blockchain infrastructure of this kind could be a network of public government agencies and federal data centres. These are the blockchain nodes in this network. My vision is that we need to benefit from the potential of distributed ledger technology in public ownership. The nodes in the system stay in the hands of national and local government agencies, not the private sector.

The strategy of developing a Europe-wide government blockchain infrastructure would greatly strengthen Europe's position as a true leader in this new field of technology. We are seeking to make the public sector more effective and efficient by implementation of blockchain. A simplification of admin processes is what blockchain can deliver.

#### PICTURE 7

And how about the governance and organization of a European blockchain infrastructure of this kind? In my view, our best way forward must be based on a European cooperative agency. The legal framework for such a European cooperative already exists. If a Europe-wide organization were to be created offering blockchain technology as a Service for the public sector, this would be a complete game-changer. Such an infrastructure, able to connect a very large number of public data centres, could also find applications beyond purely governmental systems. Private companies, start-ups, will also be able to use this infrastructure.

Finally, this infrastructure revolution will return the control of data back to its owners. I have given examples of how the implementation of a government blockchain infrastructure enables the

transfer of data. This is the new internet of values and rights. Control is given back to the persons who generate the data. And this means that the digital identity of individuals will remain outside the control of the private sector.

Many thanks for your kind attention.