

Digital government? Not so fast...

If you can order whatever you like with a few clicks on Amazon, why does everything at the government have to be so complicated? Luxembourg wants to use blockchain technology to make it all much easier, from getting a new passport to sorting out your taxes. But it may take a while before we'll see the first results...

By **Kate Oglesby** | Illustration **Eberhard Wolf**

Filling out tedious forms and queueing in government buildings could all become a thing of the past if Luxembourg succeeds in replacing its bureaucracy with computers.

A new technology would allow each Luxembourg-er to perform mundane duties ranging from getting a medical bill reimbursed to submitting taxes with much greater ease.

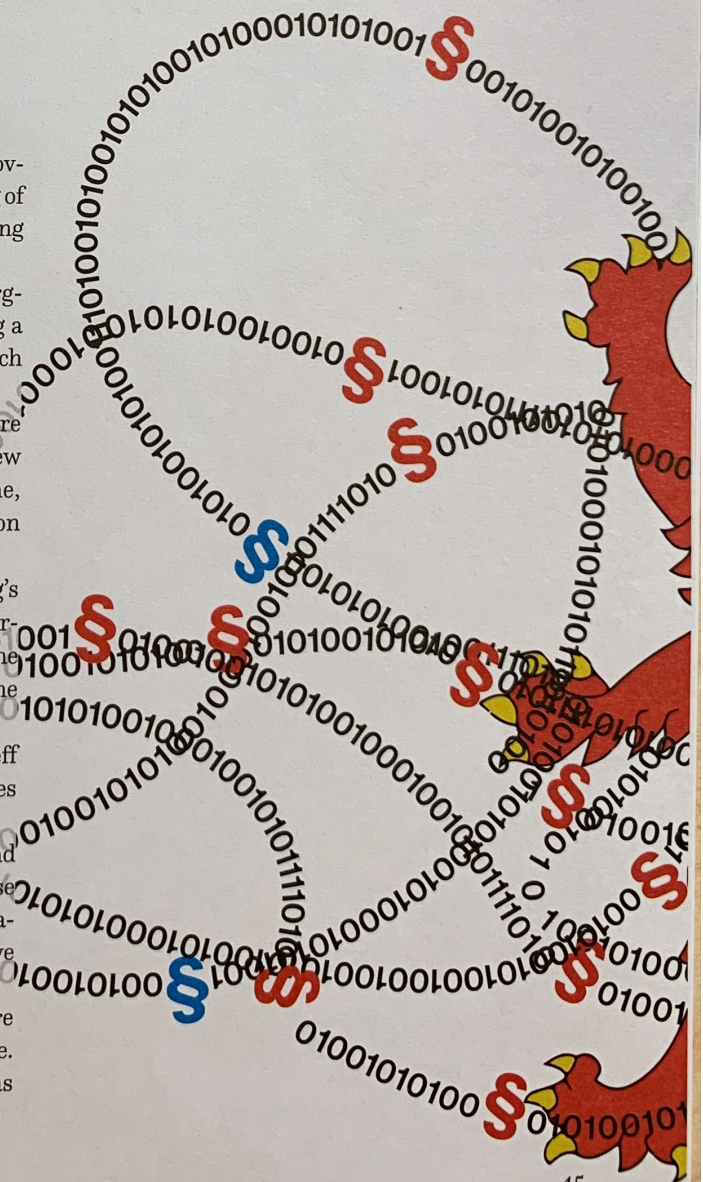
Personal data is promised to be as safe as if it were locked away in a drawer at home, because of the new technology, known as blockchain. At the same time, a digital government would make the administration more efficient, and reduce costs.

Or at least, that is the theory. In reality, Luxembourg's efforts to put the technology at the heart of every interaction with citizens are in their infancy. Critics blame them for being vague, with one problem being that the law provides almost no guidance.

"There is very little specific legal premise," said Jeff Braun, a lawyer at Kaufhold & Reveillaud who specialises in the legal aspects of blockchain.

Blockchain is best known as the technology behind cryptocurrencies such as Bitcoin. Some people use these for financial transactions, but they gained a bad reputation because their value fluctuates wildly, and they have been used in criminal activities.

Unlike the euro or the dollar, cryptocurrencies are not backed by governments, nor stored in a central place. Instead, users keep them in computer files known as digital wallets.



Some people accept these cryptocurrencies as payment, and each transaction is recorded in a growing list of transactions, linked through encrypted messages.

While not accepted as mainstream currency, businesses and governments are eager to put the blockchain technology to good use for all kinds of administrative functions, ranging from parking tickets to automated contracts and logistics.

But because it was used widely in finance first, most of the laws written around blockchain – including in Luxembourg – still focus on financial transactions.

In February, Luxembourg passed a bill approving a legal framework to grant financial transactions done with blockchain technology the same legal status as traditional ones.

On a European Union level, there is also some guidance as to how blockchain can be used – but again – only for financial transactions.

However, it is not clear whether those legal provisions can also be used when somebody fills in a document from his or her computer at home, while not in the presence of a civil servant to verify and authorise the process, and if they cannot, which rules will be used instead.

While this may not require new legislation, Braun said, at the very least it means setting up new governance rules – and a lot of coordination between ministries.

ESTONIA LEADS

Luxembourg's plan follows in the footsteps of Estonia, where a massive hack of government databases in 2007 brought to light the need for something better, and, most of all, safer.

The breach – for which a Russian-Estonian was later charged – targeted websites of the Estonian parliament, banks, ministries, newspapers and other media. A decade later, virtually all of the government's services are online.

The Estonian systems rely heavily on blockchain, which means citizens had to submit their basic personal data only once, after which was stored on an indelible system.

The government can now consult a number of connected databases to check anything it needs to know. Any new services are 'digital by default' and work on the basis of the same set of data, which is already stored in the automated service hub.

“Virtually impossible to tamper with the data”

More than 95% of data generated from hospitals and doctors in Estonia is digitised. Each person who visits a doctor has their own e-health record,

containing medical notes, test results, prescriptions and x-rays, as well as a full log-file tracking access to the data.

Patients can access this data with a key or password which only they know. The system then sends back another secret number, to show it recognises that person.

The same key is used – for instance – for foreign residents to check their immigration status.

Every transaction a user makes in the network is recorded – meaning it is always visible and can never be deleted. This gives the user control of his or her data.

Each change also gets a timestamp, and shows who was put into the system – which makes it virtually impossible for an outsider to tamper with the data.

And if somebody does tamper with the information inside the blockchain, it's immediately clear who that person was.

It is these principles Luxembourg aims to replicate.

One example of how blockchain technology will validate official documents is a partnership between the Centre for Information and Technology for the State (CTIE) – the body working on behalf of the Ministry for Digitalisation – and Luxembourgish banks. The partnership is being tested out with the government-owned



bank Banque et Caisse d'Épargne de l'État (BCEE), or Spuerkeess – with the aim of digitising the process of giving out student loans, which are approved by the state and provided by the banks.

“We hope to create a platform for all of the public sector including local and national government, administrations and ministries,” Patrick Houtsch, the head of CTIE said.

This means students will be able to fill their details in online at *myguichet.lu* – Luxembourg’s administrative online portal. The government can then approve the loan and the bank authorise it – all in one public blockchain system. Students can do everything at their computer, without ever having to enter a bank or government administrative centre.

Communes will also use blockchain technology to make administrative procedures easier. They plan to do so through the Intercommunal Syndicate for IT Management (SIGI), which will help them develop and use the technology. SIGI was established 37 years ago – long before blockchain existed – and works with communes to digitise their administrative procedures and make them more streamlined. It will work with all communes, except Luxembourg City.

One example of the projects SIGI wants to develop using blockchain technology is verifying residential parking permits. If a parking attendant in a commune wants to verify someone is legally parked, he can enter the number on a parking permit into a machine which puts it into the blockchain system. The system will then say if the permit is authorised for parking in that particular spot.

NOT TOO AMBITIOUS

But when listening to director of innovation and strategy at SIGI, Carlo Gambucci, one gets the impression it may still take some time for all this to happen. Gambucci

“Blockchain cannot solve fraud”

could not say how many processes would use blockchain and when they will be released.

“We don’t know when the first blockchain application will be coming out, probably this year,” said Gambucci. “We don’t want to be too ambitious. We want to learn from this process, and we would prefer to be on the safe side than mess up. It is a continuous process that I think is going to move faster when we begin rolling out the software,” he added.

Details of how the technology will be rolled out across the country by CTIE – which has been working on the technology since 2016 – also lack clarity.

The group wants to focus on putting the technology in government ministries, Houtsch said, but it has not decided when, where, and how exactly this will take place. The project is still very much in its testing stage, and there is no full list of projects it will be applied to, nor an official launch date for the project. The only thing Houtsch would say is that it would “very probably” go into production this year.

There is still work to be done on how the system will be governed, to make sure all parts of the government use the system in the same way.

“We have an idea what it will look like, but we have to put on paper these procedures for using blockchain,” said Houtsch. “Those who participate in the blockchain system will have to adhere to these procedures and to sign a contract – which is not yet defined – which says they will participate and respect certain rules.”

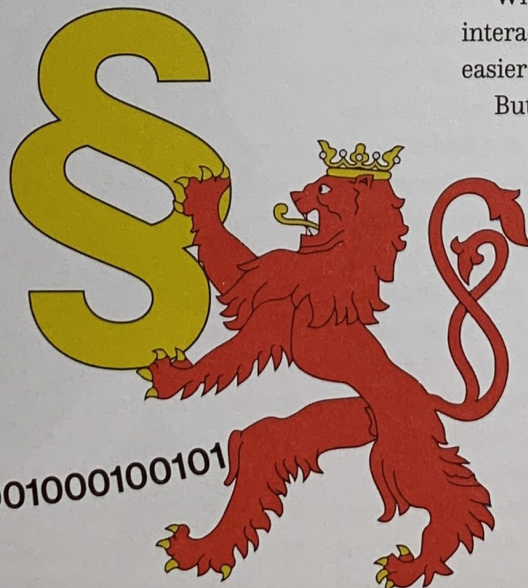
Laurent Mosar – an opposition politician of the CSV Christian Social-Democrats – is one person who has some questions about the use of blockchain by the government. His main concerns are that there is no legal framework for the use of blockchain in government, how the government will protect data, and a lack of planning.

“I think it is a positive government initiative, but I don’t think it is enough. There are a number of ideas I would like more precise information on,” Mosar said in an interview. “The government has lots of good ideas, but we are far away from a clear concept.”

With Luxembourg on its way to adopting blockchain, interacting with the government may gradually become easier over the next decade.

But one thing that cannot be solved with a public sector blockchain is putting fraudulent information into the system.

“Blockchain will never solve human nature. If you are lying you are lying, blockchain won’t solve that. If an official or employee at the government puts wrong data in the blockchain there will be wrong data in the blockchain,” Braun said.



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