Digital Transformation of Tax Administrations in the EU

JEAN MONNET DIGITAX PROJECT International Conference

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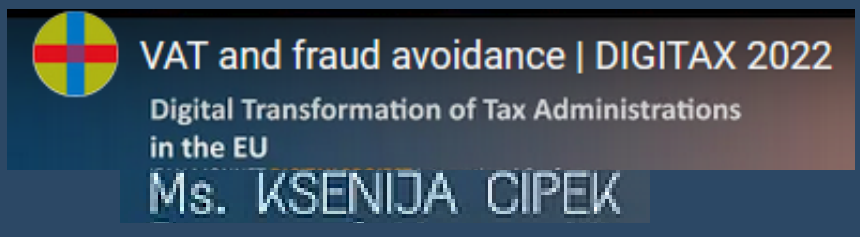

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Among others urgency to address this includes intelligence, bonding technologies.
And a high level of data protection, digital rights, and ethical standards. This is from European Council meeting from October 2017 conclusions. So it's that.
And if they include that many different bodies, I was saying in the European Union As for example European Cheng Partnership, Croatia is also indeed.
OK, what is special technologies?.
What is the digital era we live and work and?
The basic needs of text administrations, so this is certainly real time data.
You know we need to, so first of all, we have two goals to collect the taxes timely. And of course to be a good services to provide good services and quality services to the taxpayers. So a real time is very important for us.
The. Where did this mistake in the other country?
This is because if you look at today in the field of tax fraud, the text of frauds are very, very.
The time so we have to be ready for that.
The little disease is, We're living digitally so.
It's something that's where people come to every takes. Administration had some level of beauty, isolation and of course it was a very helpful tools, especially is and it is actually.
Still, today in this global pandemic situation.
Everything that we need so we don't like it anymore.
Data warehouse, so everything has a large amount, just no need to shout. So data policies were important.
Data security also. So we see today that.
But we have to produce this this data.
They they need to build these and everything so yeah excuse me could you please switch off the camera? Maybe we can hear you better without the camera because apparently the the connection is weak and maybe without the camera we can hear you more clearly.
No problem, it's not your problem. He's he's the.
Sometimes I just cannot do this because I share my scene. So if I did I will.
Now do you hear me now? Better, better, perfect now perfect now OK thank you.
So is this say this is the stage of games and needs of tax administration, so timely prevention of tax fraud. Of course this is one of our primary goal, reducing the administrative burden on taxpayers and reducing costs for both taxpayers and tax administrations.
Quality E services for the taxpayers with see how important is today?
To provide the quality services from the text administration to the taxpayers, I think that that is really something in the area of reducing the administrative burden on the taxpayers

Increasing tax compliance is also the goal, but processes automation is something that is also very important. So for example in Croatia we have the automatic VAT refund system, so without any manual work and.
Better minimization and of course transparency and that is order. Strategic aims aims and needs of tax administration, but our emphasis this that is most important. So if you look at the blockchain features, every blockchain is a distributed Ledger, but not every distributed Ledger is a blockchain. Each of these concept requires decentralization and consensus among nodes, however the blockchain.
Organize data in blocks and updates, uh, the entries using an opened only structure chanrai. So what are the blockchain main characteristics? So of course that is the decentralization, transparency and traceability of data, data immutability, real time information control mechanism. So access to the for example permission at networks is restricted to.
Identify users.
Security and some other features. So if we look at.
In the previous slides, we see that the blockchain actually has a lot of characteristics that text administration could and should use.
To provide better services to the taxpayers and to provide the time, we collect the taxes.
So this is something that is, uh, really. Have to.
Testing and analyzing and it is it is.
In many tests, administration is a pilot project and in some text administration administration is in Thailand. It's really works.
So what is the types and modifications of the blockchain so public blockchain? Anyone can participate as users fully decentralized and actually an open source private permissioned blockchain? More centralized participants need consent to join the networks and transaction are only available to them and consortium blockchain. Some information can be private.
So if you look at that.
We can conclude that permission and especially consortium blockchain, can be suitable choice for tax administrations, so blockchain is not solution for every area in the text, sanitation or for any any work in the text administration, but could be useful for many text areas in the tech administration and for text processes. And so we have to look at in this permission.
And consortium blockchain. But modification of the blockchain is always an open possibilities for the tax administration. So we know that blockchain technology has a consensus mechanism which is the heart of the blockchain.
Uh, and uh, for example, we can have, uh, proof of steak, proof of work, proof of capacity, proof of elapsed of time.
Of activity, but proof of identity is something that is very important for the tax authority, so anonymity is not an option in text matters. Taxpayers connect cannot be anonymous when remitting taxes, so we have divided anonymity from privacy. That's two different things. And of course we can modify the blockchain so we see.

For example, three main types of the blockchain, so could be hybrid also so.
That we can actually modify, make a modification of the blockchain for the needs that we really need for our purposes, so that's that's possible. And if we are talking about anonymity, anonymity is always something that is characteristics of the cryptocurrencies and cryptocurrencies we connect with the blockchain, but actually is much more important thing.
In this situation, proof of identity has to be assured, yes.
In
uh, the.
Smart contract is another thing that is very important in this story about the blockchain. So this is set of rules between involved parties. This is actually the computer.
Code which are running on the top of the blockchain.
And turn the legal obligations into automated process like a as is this picture, like a cryptographic box that contains value and only unlocks if certain conditions are met. And we see that is not intermediaries, so smart contracts is very important part in the system of the blockchain. If we use that, especially for the for any purposes, and especially for for the tax purposes, but could bring us a lot of.
Event benefits so.
Umm?
If we look for example, what are the this is on? What are the potential text areas for the blockchain? Is a sorting data, for example could be about certain transaction. For example, taxpayers register of land owner, owner and other property properties and so on. This is secure. Methods, for example could be using for registering taxpayers and verifying the authenticity of the taxpayers. There is the potential for increasing compliance, for example.
We can have the compliance rules in the smart contracts, which will reduce its cost and creating actually the trust in the tax administration. Of course it's a lot of possibilities in the area of VAT as a payments or refunds or VAT fraud, but this is not the only tax area where the blockchain and DLT technology can be useful. Can be useful in the field of transfer.
Pricing for example. So we we have for example track smart contracts. So we have we can put all the methods 5 or 6 methods in this smart contract.
There is employment tax. This is tax audit area, so if we can exchange the real time information which are immutable and so on and so on and so for tax audit, this is very something that brings new opportunities.
Uh, but.
If we are talking of the blockchain, so as I said or DLT, we have to be very.
Quotion so and see which what benefits we can have from these technologies, for example.
The first real time exchange information between text authorities was actually last year, I think in summer between Estonia and Finland on X Rd. This is not the blockchain.

So other possibilities are is possible, so we have to decide which are really good and have benefits for the text administration and the and also for the taxpayers. So we have not to forget our services to the taxpayers and minimize the.
The administrative burden for the for the taxpayers.
So.
This is a 2 examples of in the field of view T, so this is a very simple one, so we must based on blockchain via smartphone tract calculation of the AT and the payment is forwarded directly to the. Takes a ministration and the rest of the amount to the supplier. For example, in the ring slime no or minimum errors.
So we can for example, use that.
But I like this initial concept of the Bitcoin which was introduced by Richard Ashford and other authors in paperback coin, the GC cryptocurrency.
It was designed as a proposal for the GCC Gulf Cooperation Council. The most important goal is to prevent tax frauds and collection of taxes in real time. So it's actually paying the taxes by coin issued by government. So if we are talking about the fraud, for example, it is the cross border. So for the countries of GCC, and if we are talking about.
Paying the taxes by coin, which only purpose is paying the taxes so the fraud is minimizing because. I don't know who will like to steal the coins for for that besides the money, so so it's it's really great concept and I have one one article about that. Can we apply wider as text points so that all for example in European Union taxes can be paid with the tax coin as the as the BAT for example?
So this is something that really fascinating me. Of course the base base is the blockchain technology.
So this is something that is really, really unusual, so we see today if we are talking about the FDA examples and other examples in the field of taxation for using blockchain technology and DLT technology, we see a lot of things. For example, as I said in Thailand, it works for VAT what we found for tourists and we have in Europe.
Some pilots in Germany and of course in in Estonia. OK, I type of blockchain and in many other countries and in LATAM. So we see that every tax installation actually try to testing or have enforced something based on new technologies and the aim is to use this benefit from these technologies.
As I said in my second slide to fulfill.
What we actually need in tax administration.
So my short conclusions today will be that parading between legislation and technology has already shifted. What does it mean? So it was always the rule that technology follow legislation, but today this is not helpful anymore. So legislation and technology has to be compatible and sometimes in the future and right now I'm sure that we will have situation that technology will have direct impact on PlayStation.

Provisions in the law is that we don't want the law which is not applicable or very costly for the taxpayers or the OR the tax authorities. So we have to have in mind that technology is very important part in the law making especially tax law. So this is something that really could be useful and helpful. Helpful for us if we don't pay attention.
And technology just on the on the on the lower part it's it cannot be the good results today in the digital era, so this is very, very connected and should be compatible. We see this sliced tensions between blockchain and GDPR for example. So this is something that should be avoided in the future. So every text administration has monitor, analyze and test new technologies in order to make quality solutions solely for.
Priority this is the imperative. However, it is clear that new technologies such as blockchain and DLT can provide in certain segments better communications with tax administrations.
Immutability data use of smart contracts, real time data adjust some of the benefits considering the text administration communicate with a huge amount of data and attention to the selection.
And implementation of new technologies.
Is of particular importance. In addition, new technologies also contain certain disadvantages, but this should not be a reason for a priority withdraw.
High quality analysis and studies can provide the best solutions for the digital era, so thank you very much for your attention. I hope that you hear me hear, hear, hear me. Well so.
It was.
My presentation about short presentation about the blockchain, but I think that I emphasize.
What is really important for the tax administration and how how we can have the benefits from the blockchain or DLT technologies and also from machine learning, artificial intelligence or Internet of Things. So this is a lot of possibilities, so thank you very much.
Good afternoon, thank you very much to the CU University and all the organizers for having me here today. I'm going to talk about the use of block change by tax administration, particularly the use of this technology and BAT fraud. Well, we have had a great introduction and.
And, uh, I'm going to to explain to explain, uh, remark certain things about the blockchain technology, but this already has been explained. Secondly, I'm going to speak about the DAT Pro and the. Net. Then I'm going to speak about the proposals to use the blockchain to mitigate deviat fraud, especially in the EU.
And and finally, I'm going to speak about some conclusions.
Well, blocks change technology.
And the blockchain technology is behind of the Bitcoin blockchain. Technology is a software protocol based on cryptography. It's also a distributed system. The data is copied in the computers of all the transactions participants. The information is stored in blocks. The blocks are fully identifiable and they are linked to the previous data block. In this manner, the information the information in the store in chains of block.

The technology is trustworthy because it uses 4K components, distributed Ledger, trust, share and smart contracts.
Well, uh, according with the European Commission, the EU countries lost €140 billion in the 80 revenues in 2008. The BAT gap in 2009 was estimated in €134 billion and the potential for the loss of the bad in 2020 is calculated in 164 billion of errors.
Do it effects of the coronavirus pandemic on the economy.
Well, this is a big problem in the in the EU.
So we we are going to explore the proposals to address this problem.
And see if if is is possible to implement block change in these solutions.
Well, the most popular or the most.
Popular fraud is Carousel Pro is also is known as a missing trader. As a missing trader, intra community fraud, there is a similar fraud in an extra community operations known as a missing trader. As a community fraud.
Maybe it's playing, huh? How the Carousel fraud works?
It's a company name B resident in the in the EU Member state to buys a supply from that company.
A resident in the EU Member State, one it pays 7% VAT rate.
On another hand, if the Company B resells the supply to another trader, company, etc.
Has to pay deviating.
For example, in Spain the weight rate is 20%.
The company V. Moscow led the bat.
And uh, and ********** to the tax office. But the company does don't file the return.
And before that, the tax administration realizes the Company B disappear. That is why this fraud is called the missing trader.
Then the company C.
Resell the supply to another, uh, uh, to another client in the in the EU Member State one.
Today rate of 0 percent BB8.
Then, uh, the the the buyer and the reseller ask for their return to the tax office.
Uh, for the reform of for of the 20% of the BAT.
And the the good is, uh, is mostly on paper in the EU. Member one and all again start start once and again and again.
This is why this, uh, fraud is called. Also the carousel fraud.
What?
Now let me explain how uh is is possible to implement the block change technology. The proposal suggests to implement in the 1st place. The digital invoice customer exchange.

This mean that the this digital invoice.
Invoice replace the paper invoices with electronic invoice.
First, the seller generates an electronic file. We have a we we are seeing the same, the same car sale probe. We are going to to imagine all the solution in this scheme.
In in this scheme, the the seller generates an electronic file.
And all the with all the details of the transaction. The seller digital signs they sell 5.
And digitally and then, uh, transmit this information to the origin tax administration.
The tax administration have to authorize the use of these proform.
Then the original administration checks the file and if the file is complete, the administration saves a copy and sign it.
The electronic signature serves as an access key and the document become a part of the shared layer because the because the original tax administration send the file and the key.
To the destination tax administration and to the seller.
In this manner, the these three parts has the same fight.
After the seller told me the proposal, invoice to the adviser.
And the buyer can use the access key to check the information of the proforma and and by Bilitis invoice.
The the boy the the buyers then replicate the same steps previously that previously did the seller.
This meant that send the file to the tax Administration Tax Administration check if the information is correct.
And after produce.
A file with a signature with a second key.
If the documents match, if the information that receive that the destination tax Administration is according with the information that receive the original tax administration.
Then send the the final invoice to the region tax administration under the under budget.
And produce a second key.
If the file.
And and simultaneously, is a. The buyer creates a final, final final invoice.
And send this invoice to the seller with the with the two keys case. With the two case. In this manner, all the participants has the same information and this document is unchangeable.
Look
now.
We are we are going to see how the blood change is applicable under this. First steps for the for a digital invoice.

And do you remember the characteristics of the blockchain?
What we yeah? Well, first we need a distributed Ledger and that is unchangeable.
But as a as a previous speaker has said, we need a private distributed Ledger for security reasons.
The tax administration have to use a private.
Distributed layer instead, or use a public distributed lawyer like Bitcoin.
Because in the public distributed Ledger anyone can enter and see all the operations, so it's a. It's a.
It's necessary that to get the privacy and the information only between the tax administration and the taxpayer to to perform the brochure in a private distributed Ledger.
Well now.
We we have the same the same operation, the seller and the buyer produce the digital invoice.
But in in this case in, in this scenario, the seller and the buyer transmit the the the invoice at the same time today with the same information to the tax administration and to the original tax administration and to the destination tax administration.
Then the tax administration sent them to the to the ICO, iCloud and.
Start to perform the validation with the notes.
The notes here, uh, have to review the all the all the information and solve mathematical puzzles in order to to see if the all the information received is is OK. If they agree. If there are consensus between the nodes of the.
You Member State one and the EU Member State two. They give a a consensus the the proposed consensus is in 75%, so if it's a there is a 75 consensus to approve the operation, then the invoice will be stored in a in a chain automatically.
And it would be in the distributed lawyer.
And all the parts have the same information in the real time of of this invoice.
With all the the data.
He suggested that the notes can perform this operation also with artificial intelligence. This is a huge potential for the tax administration, but also implies some risks for for the taxpayer.
And for the taxpayers rights, because the the tax administration have a lot of information. So these notes can perform this. This this information, the information that was sent for the seller and the buyer and the tax administration can compare in seconds with the information that the tax administration has in his records, if it is.
Artificial intelligence, uh, find uh some anomaly anomaly. They they can deny the the production of the digital invoice and and and also is is not going to be possible to create this invoice in in a blockchain.
So this is a an important if an important issue. If you if the if the traders do a lot of sales and a lot of operation. Imagine that one artificial intelligence system block the possibility to to operate because the records of the tax administration don't match with the with the information.

With with the information that supply the the the seller of the buyer.
So this is a. This is the the the one of the race of this youth, but it's a tremendous use. Also suggested that as the blockchain can record, all the operation is it is possible to.
To make a change from every step of the of the of the market of the chain of the market, it's possible to to make a block change or to yes to to store in blockchain the deformation of the manufacture, the seller to the buyer and until the final buyer. And in this manner.
All the information of all the all the operation can be stored in the chain and then in their distributed Ledger. In this. In this way the the artificial intelligence or the validation and the artificial intelligence to perform the validation of the operation can use all the information available of this operation or.
Or even suggested that the artificial intelligence can can compare this operation with similar operation in the market and and detect some problems or some inconsistency.
This is a very very powerful technology.
Also, it's possible to use a smart contracts as as the the previous speaker has said, the smart contract.
Are also very very useful in blockchain because these small programs can automate automatically pay the VAT this is.
For example, when the seller send the the the the supply to the buyer, and when the supplier sell to the other buyer in the same EU Member State, the smart contract automatically.
And collect the the BAT and pay it to the destination tax administration automatic in this in this manner is not possible to for the buyer to keep the VAT because when when the when the buyer generates the 2nd.
The second proforma.
The tax administration is is going to know that the the BAT is is generated. So in this manner the smart contract can or can order to to collect automatically the BAT and pay to the destination pack administration. Also this smart contract is possible to use for reform. For refund the BAT.
Here and in this step we can use also the the BAT.
Coin that the that also has been mentioned. Instead of instructing the the pay to pay with the with the money with the normal money, it's possible that the within the smart contract collect the the PAT with the cryptocurrency name, tax tax coin or 80 coin.
Bay to the destination. Tax administration later in the in the presentation we are going to explore the characteristics of this BAT code.
Alma, you have a 5 minutes no more because we we are already behind of this kid of the yes. Thank you very much.
But this is the the characters of Bitcoin is.
Was paid only Bitcoin automatic payments to the to the to the smart contracts?

These are they going is convertible on into cash only by governments. The traders will do no longer on the Bart as a real money. If the Bitcoin is stolen it will be cancelled. So there are some advantage in it.
All this and another another proposal to solve this tax fraud, that is the split payment mechanism that is also implemented in some.
You are no EU countries and it is a split payment and use the blockchain technology and the VAT payment can be made through the smart contracts.
But some conclusion.
And the blockchain is a powerful technology that cancels the tax fraud in the EU. The bad coin that can be used as an exclusive from our payment for the bat. The blood change implementation in tax administration required.
Important investment the cost manage is also high, so the governments have to make a a course assessment to see if the if is if it's.
If it's impossible to implement this technology according with the BAT gap to the with the numbers on the VAT gap since our perspective, I think is worthy to implement this kind of technology in the, at least in the first stage of the.
Electronic invoice.
The legal framework of BAT must be obtained. They taking in consideration the taxpayer rights. The main concerns in this in this area is is about the implementation of the blockchain and in protection of protection of personal and data privacy in a permissioned blockchains. There are there are no anonymity. This means that each part in the network can see the information.
Of all the participants, there are proposals that sold this issue. For example, it has been suggested to protect the personal data with encryption such as serial knowledge proof, the news. The notes use the serial knowledge proof to process the information and then generalize the blockchain without disclosing the personal data with all the user. Nevertheless, since our perspective, the issue has not been completely resolved.
Ability of the blockchain may be difficult to self correction of tax returns for the taxpayers as well as any modification of the information reported. And this issue also needs to be addressed.
Finally, within, if tax administration, use intelligent intelligent artificial with blood change this. This technology also must fulfill the EU's ethical principles.
Thank you very much. I hope you have enjoyed my presentation. I am I am very happy to answer any question from you.