Ifeanyi Ojoh - invitation to participate in the research pro...

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SPEAKERS

Augustine Madumere, Ifeanyi Ojoh

Augustine Madumere 00:00
Thank you so much for taking the time to join me today. For my Master's degree program - MSc in Digital Business Administration at BFH Bern, the University of Applied Science. I am researching tensions associated with implementing and using blockchain technology in the supply chain and the resulting paradoxes. The knowledge of blockchain-related tensions and contradictions is nascent and limited, and the goal is to validate identified existing tensions.

Augustine Madumere 00:05
Just so that I have it on record, may I ask you to introduce yourself. what do you do, how many years experience you have in supply chain? which areas you expertise lies? A little bit about yourself.

Ifeanyi Ojoh 01:29
Okay, well, yeah, my name is Ifeanyi Ojoh. So I've been in procurement for the past 12 years. I have dual background. So when I mean dual background I have a background in electronics and computer engineering. And then I also have a master's degree in procurement. One in general global supply chain and another one in digital procurement. So I've worked all my life in procurement, predominantly focusing on engineering procurement, and then the past eight and half years has been focused on IT procurement, digital transformation. So yeah, that's a bit about me.

Augustine Madumere 02:22
Okay, when you say, digital procurement, I will assume you are more focused on supply chain 4.0.

Ifeanyi Ojoh 02:35
yeah. Supply chain 4.0. Yeah, does does it the future of procurement future of supply chain?

Augustine Madumere 02:44

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My research is about how blockchain applications can be used within the supply chain market and ecosystem implementation can use to improve processes or to create a new process. But I'm looking at it from the business point of view, right, based on for instance, based on design, based on on accountability based on for instance, where the data was data security data sovereignty, also, based on let's say, for instance, trusts, right? We know that, for instance, for companies that have different structures, let's say for instance, you have a centralized database, and suddenly you are putting decentralized or distributed ledger in your processes. What does that mean for the company? Right, in terms of data and animosity for other users? Or where does the data stored? Are you buying off the shelf application? For instance, the company might not have the knowledge of blockchain, but they just want to use it to quickly improve processes so it's more of a short term implementations or is a long term way you are looking for a lot of people to join your network to be able to be efficient and improve the blockchain. So depending on the design, there are what we'll look to identified as tensions that arises some are controllable and some are manageable. So you have to manage them because then you have to live with them. And the ones that are controllable, for instance, and depend on on the organizational alignment of the company or the environment where the company finds itself, right so we're already looking at different literature's we have built a framework of identified tensions. With this research, we want to validate and check if they are valid in real cases. Right? So not just not just the thematic analysis, but also based on on case study. So I'm using IBM Food Trust as an example, I don't know if you have worked with IBM Food Trust, before

Ifeanyi Ojoh 05:29
I've read about them a lot. I've read about them a lot of we're working with a different technology. On my current Yeah,

Augustine Madumere 05:38
that's also we'll also also find, because with IBM, there's also kind of a limitation there. For the research. The limitation that we have is that it's permissioned. And then it's private. And it's off the shelf. So meaning, a farmer might not know what, what is how, what does it mean for me, right? He only sees the business benefits, let's say from a who plans to people in somewhere in South France, who one who colorful force acts to implement the blockchain solution that they can customers can see, end to end,

Ifeanyi Ojoh 06:23
traceability and all of that.

Augustine Madumere 06:26
So, the farmer has technical skills, but what he could do it, he could implement they could support to implement it, right? So if you ask him something like about trust, and about accountability about data is like, what is this, but I don't understand what I'm talking about because of off the shelf. So maybe you want to share a bit about the kind of applications that you have worked on or implemented, or, you know or have been using just mentioned before something different.

Ifeanyi Ojoh 06:56

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Okay, so I also would, maybe put lightly that I probably wouldn't give you a general overview, but what very practical application based on where I have worked and where I've used blockchain before and based on current situation that I am treating. So So in, in my current project that I'm handling, which particularly has a blockchain work stream as part of it, we are using Blockchain for two reasons or to achieve two goals. One is for location, which is traceability, which many people would call, traceability, but more around trying to see every touch point that a raw material goes through until it gets to our hand. Right? That's on one hand. On the other hand, we're also looking to use blockchain for counterfeit management, because we make use of third party manufacturing. So because we make use of third party manufacturing, you want to make sure that you can trace that, indeed, the end product you're receiving from your contract manufacturers are exactly coming from them and not a counterfeit product or product have been swapped within the supply chain. So those are the two prong use cases that will that I'm currently dealing with, or I have experience dealing with. Yeah.

Augustine Madumere 08:27
Is this business solutions built on a public or private blockchain?

08:33
it is on a public blockchain, hybrid. kinda of mist of both.

Augustine Madumere 08:57
Okay. what is the benefit of the solution.

Ifeanyi Ojoh 09:01
So the benefits that we'll look into achieve again, it's also in two buckets. One is within the organization, it will help to improve efficiency. You know, by the time you are able to know exactly where your raw materials are in gives you a better idea of how to prepare you know, forecasts have a general view of your supply chain. So efficiency side is internal. And then on the external side, it helps to build trust with our third party suppliers. So the trust is building for us is the fact that when the raw material, let's say departs from South Africa, because we do get some material from from South Africa, so when he departed Africa doesn't come. I'm in the UK. My company is in the UK. We have plans all over the UK.

10:09
So So imagine if the raw material is going to go through different touch points, right, it will get to the port, someone's going to package them. So if those raw materials have a special tags that are built within the hyperledger, that we're tracking on the blockchain, when he moves from one touch point to the order, we are able to still validate that, that is still our raw material, that is still our product, it has not been tampered with. Right? It is in the right quality. We can see the timestamp, date stamp and all of that, nobody's going to change anything without us getting alerted about our product. So that traceability helps us to validate the quality of what we are receiving. Right. So that is a big benefit. Because the cost of discovering that the raw material is not of the right quality is very high when you're doing you know, the general conventional method is by doing quality assurance, you know, we have this department, they call them quality control. When they get these raw material, they will now hold them take samples and now start running a series of tests, which is subject to errors or human error or whatever. And even when you're running those tests more often, it can be random. Yes, it can be

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random. So there could be error. And apart from that, you've already paid, you know, you already paid for those raw materials. So even though they are counterfeit, you may start dispute. But with Blockchain. , the transaction is not because we're using smart contracts. So the transaction is not consummated in terms of you know, anybody receiving any financial benefit until the blockchain are validated, or the quality of the raw material is as specified in the contract and the smart contract. And then the smart contract when everybody validated triggers the payment on the funding. And so you're more or less 99% sure, right? That you're getting the right product that you have bargained for at the right quality, you don't need to carry out extra administrative, you may do a, you may want to do maybe another level of check, but it'll be at that administrative cost to do if you didn't know the quality at all when you received it. So is I'm summarizing it but this is going to be a million is given out millions of pounds in savings, administrative costs of savings. And of course, the comfort that you can have peace of mind knowing that okay, you're getting the right thing. That's all I had on the on the side of counterfeit, the same process will go through for counterfeit counterfeit here now is not raw material about finished product. Finished product, you know, anybody can go and replicate your product. Like they will just design everything will look alike. Except you Oh, yeah. So. So not everybody have the patience to read through labels and know whether they put I went there is one, you know, that kind of thing. So, we blockchain, we build a blockchain tags within the product. Right? So anywhere your product is in the market, you can trace them. You have your distributors like we do have our distributors. And so with those products, they're all on the blockchain. They're all on the hyper ledger, you can trace the millions of them anyway. So if for any reason a counterfeit of your product is introduced into the market, it will show it to show that this is an outlier. And then you cannot begin to trace whether where is the origin of that counterfeit, and then what I need to take legal action, but there's a different department that does all those follow ups. But our own is that blockchain technology will detect the counterfeit for you. And then another team will take over litigation or withdrawing it from the market or stuff like that.

Augustine Madumere 14:16
So that means you can identify that the QR code, right? That is transferred. Yeah, we'll use RFID. The counters have no tag to the data that you guys have already put in a visualized form to define the product.

Ifeanyi Ojoh 14:41
Yeah, so each product will have this code right. And before the product is shipped out of the warehouse, it has been scanned. Right? In fact, it goes through different layers of scanning just to validate them. When it is coming out of the plant. It's scanned when it's been loaded into To the truck, which is the final phase because in anything can happen in between. So you want to make sure you close every loophole. So

Augustine Madumere 15:07
when, depending on on the kind of on the value of the products,

Ifeanyi Ojoh 15:11
exactly the high value product. So when it's been loaded into the truck, the forklift we use are actually a machine learning forklift. So it is fitted with, with QR code reader RFID readers. So as he loads all these

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products, it picks all of those code and validate that those were the same one that came out from the factory. So when it goes into the market, there are you know, some level of trust that it has been validated before it goes into the market. So that counterfeit traceability is now established.

Augustine Madumere 15:47
Great. And now I'm getting a practical understanding of what is happening. when when you say trust, how do you how do you then bring users on the platform? Is there a selection, kind of governance around it? How do you select them? To have access to it? And is it? I mean, assume its restricted to only partners, but how is the governance of the blockchain regulated?

Ifeanyi Ojoh 16:38
Yeah. So we have a blockchain authentication framework, right? So the blockchain authentication framework is basically I mean, it's big grammar. It is simple thing like an authorized person who is like an admin, let me put it that way. If an admin doesn't add you in a WhatsApp group, you can add yourself. Yeah, have. So let me go use that simple analogy. So within the blockchain Hyperledger, there is already an admin, the admin is being hard coded the app and there are different levels of right there are read only right. Which means if they add you to the hyper ledger, you can only see what is happening, you cannot change anything, you can even copy and paste anything. If you copy anything from the hyper ledger, you can place it anywhere to tell you blank. So there is a governance around how users can access the platform, including third parties. So if we are dealing with a vendor, for example, let's assume you are the vendor. Right now you are selling raw material to us. And we have based on the contractual obligation, we have to do that we will be tracking whatever you are shipping to us through a blockchain. Right, of course, we will train would have also, our suppliers that come onto this platform are not small suppliers, they are big suppliers. So they go through training of okay, this is a simple user manual of how you can enter the code of your raw material, make sure that they are correct the authenticated and order. So external parties can be added on our platform, but it can only be added by an administrator. And each time you as a user wants to access the blockchain platform, you have to authenticate yourself. You answer so so you have to authenticate yourself in different ways. So if you logging in today, a different way to authenticate tomorrow, there'll be a way to change it to have to send you a different way to authenticate so that if somebody is doing identity theft, you know, somebody can also steal your credentials. They can only access it only the first time. Right? The moment they associate the first time. The second time, it will Yeah, it's going to change. So essentially, if you are holding the person hostage, and the person have to be releasing all of the profile, how they will be authenticating. So that is also one of the ways to ensure security and whatever. No matter how interesting these things sound, there are some underlying issues that everyone needs to know about because there have been some even legal issues around what is the line between confidentiality and transparency? So I think that's where the tension comes in. That's where we also have tension and fast on suppliers have refused to come on the platform because they are not sure of the confidentiality of the information there.

Augustine Madumere 19:36
Okay, so that's a good point. You're touching two kinds of tensions that we identified here. You're talking about trust and we're also talking about accountability. Accountability, in the sense in terms of the rules within the ecosystem and outside the ecosystem. All right. How, how can transparency and

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traceability foster internal processes when you have partners who don't want to come on board? Right, because of the compliance issues that you're raising? But how then can you use that to still foster data exchange?

Ifeanyi Ojoh 20:23
So if they

Augustine Madumere 20:25
refuse to come on board, right? How can we use transparency and traceability to foster data exchange?

Ifeanyi Ojoh 20:38
Yeah, so that can only happen when they're on board anyway. So first of all, that's why the place of education, right, is very important. So you don't just say you are coming, we are going to onboard you on a platform without making it clear to them, Why are you onboarding them on a platform? What would be the benefit to them? Right. So from the beginning, when we start the vendor engagement, contractual discussions, you already have put it on the table that we use a tool for tracking and tracing any product coming in and out of our organization. And every supplier that we're going to onboard will be on boarded on that platform. So only a few anyway, I mean, I must be sincere, only a few keen to say most supplier desperately just want to collect the purchase order. And don't some of that don't get to be honest. But only a few ones are kin, maybe those ones that have a highly confidential product, you know, trade secrets, IPS, that they don't want to compromise. Those are the ones that will challenge and say what kind of platform is that? What kind of what level of information would we be putting in the so when you give them the scope of what kind of information they will be putting in the for that data exchange, how the data will come in and out, some of them expresses concerned that how they show that these data are not going to be intercepted somewhere and someone will use it to enter into their database and steal their IPs and stuff like that. So, there are some also, you know, there is not strong, how do you mitigate that? So how do you mitigate that two ways. One is usually you will sign a nondisclosure agreement. That is one way to give them comfort. So you're not going to sign a nondisclosure agreement with the with the other party, you are basically committing that every information that will be exchanged within the blockchain will be kept highly confidential, it will not be disclosed to a third party it will not be used for the purpose other than which you are collecting those data, right. And data privacy requirements need to be met. So

Augustine Madumere 23:08
you said one is under a

Ifeanyi Ojoh 23:10
nondisclosure agreement? And second, is data privacy, you sign a data privacy agreement?

Augustine Madumere 23:15
Okay. When you say a non disclosure agreement, right? Does that mean that the trust because we have to trust models were identified, either you trust a trust in the code, or you trust in the institution providing the code? Right, and this small farmers cannot audit it. The courts, for instance, right? they

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dont have the Resources, the ability to do so, somehow, there's a tension there as well. Do we believe this company? Do we accept that the nondisclosure agreement is enough? Right for us as a company that our trade secrets, which you just mentioned before the trade secrets, maybe the data we have they have the production volume, or supply volume that they have, which is for them can be used by if the data goes out to a competition can be used in a different way. Right? How is that done?

Ifeanyi Ojoh 24:23
Yeah, yeah. So the trust let me tell you in practice, right and practice, the trust that works is on the strength of the kind of agreement that you have with the institution, the credibility of the institution we are working with because to be honest, nobody have time to read any code even a software company they don't have time that does not does not bring revenue to them. Everybody's chasing revenue. Let's forget about this. We're adding value. Yeah, but at the end of the day, it is revenue. Yeah, it's bottom line that matter because You know earning salary in value and salary in currencies, so, so at the end of the day, nobody have time to be looking at codes and know you can do with cobalt, you need to give us legal documents that we can rely on that will protect us and protect our information and protect our data. Then the other thing you need to know is that within the blockchain itself, data is encrypted. Right. So you may have 20 people in a blockchain, the data you will access will only be that which is relevant to you. That's why I told you that the governance and the authentication is a different level, there are maybe one or only one or two persons that will have an enterprise access, which means they can see everything that is happening, but the other people will only see areas that pertain to them. Let's say for example, you are in charge of shipping, right? You don't need to see all these quality control document, you don't need to see commercial document, probably what you need to see is the bill of lading, the shipping manifest and you know things that will help you engage customs and clearly goods, that is all that you will see because that is all that is relevant to you. Even though all the other data including payment information are in the blockchain, you will not see them they are encrypted. In fact, if even try to click on those things, to warn you not to click because you are not authorized, if you try the second time, it will alert somebody and they are going to start questioning you Hey, why do you want to see the Why do you want to see the past? Why do you want to see this? What do you want to do that information or you know, you want to appear credible before your institution. So you don't want to do anything, you wouldn't even bother clicking. So that data encryption is also another layer of building trust and reducing the tension. I mean, I mean, I'll be using your your technical words between the parties within the blockchain. So that's how they handle data encryption is part of the data privacy agreement. So data privacy agreement, we state categorically that data will be encrypted, you have to agree the encryption standard that you will use.

Augustine Madumere 27:35
clearly, the data resides within the application. So participants does not have access to the data or do they have access to it?

Ifeanyi Ojoh 27:46
They have access to only data that is relevant to them,

Augustine Madumere 27:50

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to them, so. And then who has access to the rest of the data resides with the institution that provides th solution? Yes. Okay. Because in the case of IBM, is slightly different. The IBM mode, the data resides in a system, but permission who will see what is given to the participants, they(data owners) decide what to be given to who, so the whole data collected, somehow, hidden. For instance, if go to a shop, and I scan it potato, right, it shows me this is from this area in South France, from this kind of farm, or how it was grown, but the whole journey is not easily I don't see them, right. So they choose what to publish or visualize. And that also might be what they might use to look for other participants/customers. Let's say if I'm a farmer, I'm already on a blockchain with you guys. I can use it as a competitive advantage to look for new buyers. Right? Guys, if you buy my product, you can also already have I have a set of processes you can use to show your customers where it's coming from. Right. Back to data, data privacy. In Europe, we have GDPR. Right? We have right to forget the right to forget, customers can ask you to delete that data. Right. So there's a tension between a core characteristics of a blockchain which is the immutability of the data and the legal aspects of have the right of an offer of a participant on a blockchain to request that the data be removed. Is this happening in your industry that customers also want that certain data be erased? Or how does that function?

Ifeanyi Ojoh 30:11
Yeah. So So in practice in blockchain data, immutable, doesn't mean they can't be removed. The mutability of data within blockchain means that while the blockchain is active, you can change anything without other people knowing about it. That is, that is what it's all about. But data retention policy still apply. So if data retention policy says after seven years, we'll have to destroy this data, then it has to apply. And there has to be proof that that happens. And that's in GDPR come to audit companies, I know, from time to time, they come to audit companies. Good, I have no had a case where a vendor or supplier request that will delete their data, because they know already that there's a data retention policy that is in place, and that is part of what data privacy agreement provides, you know, gives all of those provisions.

Augustine Madumere 31:11
That's wonderful, We also have a model where we call our integration model that looks at the tensions that are related to the openness of the of the blockchain exclusive or inclusive, meaning inclusive meaning you have an open blockchain where everybody can participate and you need to find strategic partners that are aligned with the values of what you want to do, right. So, how do you get access to it, but what's the benefit of restricting access to it even when you say you be the data that we should receive, they can only see a certain level right from a company point of view that is coming on as a as an actual participant that is coming on the blockchain what is the benefit for them apart from the trade secrets, the trade secret is between them and other participants, if I will, if I will. So, meaning if I if I move from Company A you don't see my data if your company be on the same blockchain right, that is the kind of excuses Yeah, this was Meteor. So, apart from that, trade secrets, the results are my thoughts. What will be the benefit for the participants? I was I will argue that as a provider, despite the the the rules that you have, you have access to the code to the data that is that is in the blockchain as an admin or as a as a provider. And in the in the in the course of improving blockchain. Right, you might analyze the data to for instance, maybe you want to increase the size of the nodes, you want to analyze the data to identify ways to make the blockchain more effective, like IBM started with food, food, food trust, now, they have a branch into a lot of things right. And then the company that is

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providing it kind of have an unfair advantage against the participants, not just they have access to use the data to understand a certain market understand the starting line of product, but also they are putting them in a condition where they cannot move out. So you have a binding contract, or you have a dependency on the on a big player, which can also be the player for instance, i bm start talking with $100. It still is totally new, I believe, per month, right. So the company, if they have 200 companies, and they raise the price to 300, it will be difficult for them to leave the network, right. Yeah. So what is the benefit for these companies in this regard?

Ifeanyi Ojoh 34:36
For companies that are signing up into blockchain, into exclusive that want o benefit, I think I think you've touched on on most of them, which is the fact that first of all, there is possibility for their product to have moorage people to discover their product. You've given an example of when you scan a product And it tells you where it's coming from. And you can go look them up even on Google, you know, there could be a QR code, you scan, and then it tells you what they're all about, you can see some information about them. And so the possibility to expand their market reach without the traditional advertising and marketing is there. So again, this goes back to reducing administrative cost. So we reduce the administrative costs for them on the basis of the fact that, so one of the things that they would have paid external parties or individuals to do would have been delivered by the blockchain. That was on one. The other thing is that blockchain integration with, you know, business processes them and IoT, and all of that is very seamless. You know, today, I used to work under place where I worked, were implementing an ERP system, the ERP system would refuse to integrate with other systems. So it would not be a standalone, because it is a closely knitted application. It wasn't built with an open API and all of that, but that's where blockchain come blockchain is native API, open native, which means it comes natural, like you can plug anything easily to a blockchain system that is run efficiently. So these institutions can actually plug in a lot of their processes business processes into the blockchain seamlessly. Right, instead of buying in a standalone application and spending money to implement them and you're not sure you can at least plug into a system that is already working and then take it up from there. Then the other one, which I mean I'm just going to touch on again is the fact that again, the data as change you know proof data exchange able to prove and retrace product and documents is there for them, you know, that's part of the benefits that they will get by you know, having being part of a blockchain platform. So, the overall identity management that is on top of everything. Identity Management means you know who is watching your document you know, who is accessing your documents at every point in time as you are now if you are clearing something in any way now you don't know who have touched your document, you don't know who has opened your consignment you don't know who have signed off on anything you know, but with blockchain you can know who exactly you know identity management, who is at least assessing your document, Are they the right people to assess your document you know, because why today there is a lot of identity theft, because people will just log in and claim who they are not and then they will collect information and go for it that cannot happen in blockchain you cannot claim who you are not in blockchain because you are not part of the ledger and as even a limit to what you can access there is always a trigger you know, active trigger that allows people that are this person someone has logged into your whatever someone is trying to check your TCS orr draft TCS he says he will never give anybody any access to my draft immediately you will now either block anybody's access or move your document. But today not somebody can hack into your computer and delete your document you will not know you wont get an alert so that identity

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management is a foremost benefit that you know blockchain brings because a single source of information stakeholders can have them the digital identity are very clear. Right and then storage of data as well you know, I've given us up because I do use case I worked on his own logistics so you hear me give my example around you know logistics supply chain because the area where I specialize and so

Ifeanyi Ojoh 39:26
storage of data so you store waybill whatever in your email what of if your email get deleted or get hacked or stuff like that. You know, people you got you are searching for waybill you sent in December 2021. You have to remember the date search but with Blockchain if we're being stored on a transaction, you don't need to remember anything all you need to remember is what project is the what transaction is this Oh, the shipment of let me say Metal. You just go there and you see every document involving that transaction right there. So easy access of information is also a benefit to users to businesses, easy access to information, traceability of information retrieval, easy retrieval of information.

Augustine Madumere 40:16
Yeah. Thank you. I got different view. When I when I'm speaking to a practitioner, who happens to be an engineer, right, you understand the technicalities of this whole thing. It's enriches the interview a lot. Is there areas that you really think I might have missed in this in this whole interview? If there someting you want to add, because I it's my first time of diving into into blockchain. I want to go into the time I'm open to to learn about the technology and also about the area where it's been applied today, despite the hype.

Ifeanyi Ojoh 41:04
Yeah, yeah. So despite the hype, and I will tell you some two major challenges with implementing blockchain that is why the use cases are not so much you will not find application in many places. Anybody can say track and trace but what exactly?? Is not everything that today, blockchain can be applicable to tracking you know, they are using food because food is edible food can end in this there's an end date for every food, either you consume it or the food was spoiled, as you know. So there's the shelf life of food is short. So it's easy to quickly track and trace and stop. But how about things like spare parts? That is that can live for a long time? How do you track stuff like that? You understand that have some IPs and engineering design behind it. So there are two things that you I need to hear you talk about all you need to think about, which is what truly are the barriers they are the tensions or the tension could be dealt with by educational you know, knowledge, filling it with knowledge and then letting them know what it is that they stand to benefit. But there is a one major issue that as a practitioner or blockchain development company needs to think about which is still regulatory uncertainties. GDPR does not fully address privacy with respect to blockchain, because blockchain in itself exposes information for every participant. So you need think about how to navigate the regulatory uncertainties is a big hurdle. Right? So the regulators, there has to be some sort of framework that will be built on how because even the regulators are not knowledgeable about blockchain. So it's difficult to regulate what you don't know. Otherwise, you're going to tie people you're going to tie innovation, they're afraid to come up with stringent regulation because that may stifling innovation around this novel technology. So yeah, so building look, considering all of the regulatory implications of blockchain

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application is something that out ofexcitement, a lot of organization, don't look into it, maybe onto one scapegoat, one person will make a big error and they will take you to court and you pay $5 billion. Everybody will now wake up and start correcting are creating policies or framework or that will help them manage the regulation. So while the technology in no doubt is efficient, the regulatory aspect of it needs to be really looked into. Unfortunately, I'm not an expert in regulation. I'm not a lawyer. I'm not an IP lawyer, but I hope debates can happen that will make people to think about what are the possible regulatory implications that needs to be considered?

Augustine Madumere 44:11
Two things one of the barriers.

Ifeanyi Ojoh 44:13
So the other one, again, is in spite of all saying trust but do you know that according to one of the survey carried out by PwC, about 45% of new users expresses that they lack trust in blockchain, that they don't think it is sustainable. So lack of trust or let me say no, not maybe I will not say trust, low confidence. They are not confident that blockchain is going to be sustainable and scalable. Like when you can you apply it in a very global large enterprise you know, today all these use case you have seen those small, small Our pocket of use case no enterprise application so far. So the calls for a question, is blockchain scalable? Is this sustainable and scalable?

Augustine Madumere 45:14
The professors that I interviewed are talking about mindset, a change of mindset towards blockchain. And that's exactly I think that this is what you mean with the survey from PwC. Because if a country like in, in Austria, they are three years behind in terms of the use of blockchain in supply chain, for instance. And the opposite is in I live in Zurich, in Switzerland. So the opposite in Switzerland, where you have the whole university setup, Blockchain lab, University of Zurich where we have 22 dedicated professors who are researching in multi multidisciplinary approach, right, from from fromfinance, banking, to supply chain to retail, where you use it in diamond. Providence, what you mentioned before, in the beginning, whereas in Austria is still very nascent, and in Switzerland you have the top 10 cryptocompanies. . They are all unicorns, yeah. Yes. And we'll be we'll look at the total revenue, sometimes they make over 250 billion a year. Right? Look at the taxation impact and the personal income from employment, but it's getting crazy. So I believe its here to stay. My thoughts. But for that to happen, mindset needs to change. There should be more of a

Ifeanyi Ojoh 47:10
boy. Yeah, that has been being optimistic. So let's but if you are going to be empirical, like, how can you prove that? It is sustainable? That is the conversation that needs to happen? Yeah, is easy to declare that it is here to stay but Can it be scalable? Can it be applied to multifaceted? That's why maybe all those research are going on? Maybe that's why they are found in those research to know whether these things can be applied in various walks of life can be scaled up and all that. Yeah, is yet to be is yet to be proven.

Augustine Madumere 47:51

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Yes, I agree. I agree. In some countries, is being used to vote was tested in certain Sieera leone? No. Yeah, with the team, and it was successful. So I mean, again, like you said, that scalability, can we scale it? Which is sustainable? Is that the point? Let me let me ask one more question before we wrap it up, how can a company effectively implement a blockchain application or what are the steps necessary? Let's say I have a small company and I want to do that I want to join your network, but what are the steps necessary? How can we quickly integrate it and what are the steps necessary?

Ifeanyi Ojoh 48:53
Yeah, so, the first one is to define your business case. You know? It is it is your business case that would come and whether blockchain can be applied or not. So you don't waste your time chasing shadows so fast is what is what is the goal that you want to achieve? Where exactly do you want to apply the blockchain? That is your business case? Where do you want to apply it? How do you want to apply to what extent because you cant just say i want to apply it to logistics. There are different facets of logistics where exactly to track a lorry or a vehicle or to track waybills or document and stuff like that. So so those are

Ifeanyi Ojoh 50:14
that's fine. So, so So the first is to develop a strong, compelling business case and identify the use cases where you want to apply it on.

Augustine Madumere 50:28
And to what extent do you want to apply it?

Ifeanyi Ojoh 50:31
Yeah, to what extent you want to apply it. And the other one is now to design? You know, the rules and standards that? You know, because let's take, for instance, you wanted to track a piece of item, what are the rules? What are the standards? What are the triggers? All these things, I still a bit theortical before you go ahead into software development and configuration. You need to design all the rules and all the standards and how will data be assessed? What are the sources of data? Are there going to be integrations ? are you integrating with existing platform that will work it to data will flow into the blockchain? Are you going to be manually imputing the data into the blockchain and all that? Right? And then we also need to consider the regulatory requirement. You see this has come back again. What are the designing at there complying with some regulation, or they're gonna violate regulations? outrightly. You understand? Because the way you design it to violate regulation outright and regulation, more around GDPR, data privacy? Confidentiality, you need to consider whether what you've designed is going to violate that. Then it also consider infrastructure, RIGHT? IT infrastructure? Do you have existing infrastructure to host it? Or are you going to subscribe to an off the shelf platform? That is, do you want to build it as an in house, like, bring developers together and bring software developers and audience pattern build it together hosted within your own data center or private cloud? Or do you want to go and subscribe to existing blockchain platform, you need to decide? This is what is called deployment model? How do you want to deploy?

Augustine Madumere 52:39

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the point where so maybe I wanted to interrupt when you when you need to build your own. Right? It takes a long time is a long time investment. The whole design process, but when you get an off of the shelf is more you implement within short term and it's also profitable, we immediately, you know, kind of profitability from the side of the company that is implementing it. You don't need to wait to start, like you said, getting all the technical resources that you need. And then getting also the partners that create value for it, because it was only you then there is no value in it. Yeah, there

Ifeanyi Ojoh 53:23
have to be some ecosystem to collaborate with. Yeah, so. So yeah, I mean, boy, he's what constituents some have opted to build by themselves. So because they feel that it would be more flexible for them to be more fit for purpose. That the people that are that beaut already, they may not have them in mind when a built so they want to they don't want to change their business process to fit into what has been built. They'd rather be their own and own the IP. Yeah, so, I mean, those are what this does, I mean, depend on the business case, they will know where to go to how to help.

Augustine Madumere 54:04
Yeah. I mean, I there's also this strategic partners in terms of growing the ecosystem, so that you also want to work with like minds on the blockchain to make sense. Okay. Thank you. I really appreciate your time

Ifeanyi Ojoh 54:31
time. Sure. I just you know, I just managed to touch a few things that I know you know, this is a very broad and very new topic. So yeah.

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