Kamlesh Nagware - Invitation to participate in the research ...

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SPEAKERS

Augustine Madumere, kamlesh nagware

Augustine Madumere 00:10
Good evening, my name is Augustine I am a master's student at the University of Applied Science in Bern, Switzerland Switzerland. I'm writing my master's thesis in blockchain technology

Augustine Madumere 00:35
I work in telecommunication industry. The focus of my focus of my research is on supply chain just to understand the how those businesses that are implement blockchain what are the changes that they have in terms of organization so the raise tensions in in different aspects of organisational settings? And how they deal with that? Summary, I am researching tensions associated with implementing and using blockchain technology in the supply chain and the resulting paradoxes.

kamlesh nagware 02:09
I'm the CTO of one blockchain startup and along with this I play couple of community role in the IEEE blockchain in the hyper ledger foundation. hyper ledger foundation is mainly enterprise blockchain community and code bases and it will mainly working in enterprise space. So all this thing actually has a snippet future tech where I place a CTO role we are working on Some kind of supply chain sustainable supply chain kind of product for the with the food traceability, whether it be cycle traceability or any other kind of retail digital supply chain. So this is my background about the technology blockchain and especially in supply chain. So yeah, we can discuss

Augustine Madumere 05:16
This is very good that you you are iun startup creating food traceability because the the focus of my research was IBM Food Trust. But not only that, but also other food traceability applications that are similar to it, meaning helping a supply chain have visibility over the entire chain. Right. And for companies that are that are for supply chain companies or participants in the ecosystem that wants to implement this, we kind of want to help them to, for instance, look at what are the food for thought in terms of tensions. With tensions we mean, contradictory, but yet related elements that exist

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simultaneously and persist over time, right within the company during the phase of implementation and use a typical example is, let's say for instance, for GDPR, you have the right the right to raise right. When you ask someone to raise you from a from a blockchain ledger. There's a tension between the GDPR t and the core functionality of blockchain technology - immutability, right? So this is what I'm looking at from an organizational point of view. If I may ask, the solution that you are aware

Augustine Madumere 06:51
Yeah, I just mentioned GDPR as an example, to show what I mean by tensions within an organization with the implement or use blockchain, right. But in this context, I'm looking to understand for instance, from an organizational perspective, implementing blockchain is like change management in organization, right? And then we expect to be a tensions we expect that there'll be some uncertainties, there will be also some paradox also people that are comfortable with the change and also some others are comfortable. Or for instance, you might take it as an innovation approach. But if the performance or KPIs are nosediving, you can stop it and move back to see how can we improve profitability of company? So these are the kinds of tensions that I'm looking at. So if I may ask, is the solution that you're focusing on was it meant to optimize the process or to create something new.

kamlesh nagware 08:20
Correct. So, I think there are a couple of contexts about it. So, one is about like, some efficiency improvement. So like our the IBM Food Trust will be IBM trade lens, for example. So they're known for many of you have not the efficiency in the existing supply chain processes in the our coming backend of critical digital trade and digital transaction across the across the supply chain stakeholder. And but another angle in the here like suppose now customer or consumer is more interested about to know the end to end traceability aspect of the product, whatever the buying or so, they want to see the traceability like for example, a particular food is manufactured in some kind of farming site and how the goods are transported at a particular retailer. So, that this kind of traceability is a need by the customer and another in terms of like sustainability aspect like whether the particular the food they buying the product they buy in with sustainable or not in terms of the carbon footprint or in terms of the the how the manpower what we're going to labor is involved there. So, this kind of thing that these two things mainly one is of operational efficiency in the existing supply chain technologies and that there is some creating the business model the customer in advance of the traceability of the particular product in particular food thereby

Augustine Madumere 09:52
will this will just count as an advantage of of the solution right in terms of efficiency and visibility. So, in this case Yeah,

kamlesh nagware 10:02
correct. So, efficiency in terms of like for example of the supply chain solution like trade lens. So, generally the existing supply chain trade there are maybe 100 to 150 different endpoints of the transaction buyer to seller to buyer. And then number of the State Library, the customs that there are, there are some regulator there are some kind of banks, financial involved and it will take so much time and lots of efficiencies like for example, number of the Walmart, the IBM Food Trust one so, for example, in the IBM food trust and Walmart, so, what are their supplier onboarding the Walmart

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platform, generally they were able to read the invoice with the supplier enter in the same day earlier it was maybe takes takes a week or two weeks to raise some kind of invoice discounting invoices to the supplier, there's no benefit of the food trust kind of solution. Another is like a consumer or maybe some any retail store want to take the particular lot of the particular product they can easily take in just seconds instead of taking weeks though like there's no official date on the IBM Food trust like when you want to see the traceability of the product you can see in just 2.2 seconds and in the in the earlier it will maybe take weeks to identify a particular lot and for the supplier and that supplier bought from the supplier and all this data long chain

Augustine Madumere 11:35
if I if I may take you to one of the first because you just mentioned it already. One of the first tensions that were in our in our framework, what we call value discipline, it refers to as the tensions related to what business wants to achieve with a blockchain solution and it's emphasizing on aligning the value creation with the needs of the company both internal and external company right. So, in this case, what do think are the needs of the customer or what are the values that are created for them by implementing the blockchain solution

kamlesh nagware 12:16
so, end goal is to to get the benefit to the manufacturer itself. So, consumer is the end customer but it's still the men developing the solution the perspective of the manufacture or buyer supply context. So, so, I think nobody cared about the consumer. But if you are giving flexibility and the advantage of the consumer to see the traceability of the multiple product, then maybe they can see they can create the ROI. So, like there's only in the blockchain Implementation The only people will let the two things whether it's a direct ROI of the particular implementation like suppose, maybe you getting the new additional customer or directly cost cutting another is indirect or likeable when you have the your product using Blockchain and now consumer can trace your product and they are building trust on the particular our products and services then now they can get more consumer around it. So, this kind of thing. So, it really is typically very surprising the key maintenance aspect to like, whether the customer is looking for the direct ROI, what kind of product they need to be implemented in the supply chain or whether they are just kind of improving and efficiencies in bringing to the existing existing supply chain solution.

Augustine Madumere 13:35
But if I take it a bit further right, from an organizational point of view, I mean, the value for you could also be that you focus on external values within the network right. So, manufacturer to the other players that are supporting the ecosystem or towards the customer, which is also an external or creating and capturing internal value, which is also for the company. So, like I said, efficiency and visibility of Farm to Fork, which can also be internal and external. So, they are mutually exclusive extreme positions. Right. So, what would be challenges when integrating blockchain in an existing process? Right, how can one effectively implemented an existing process or if you can share some necessary steps?

kamlesh nagware 14:31
Correct. So implementing the coalition the existing take is take there's no challenge because all the blockchain based solutions are immutable come with a plug and play kind of manner. So you could you

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could create a separate blockchain layer and can interact and create the integration between the your existing technology in the new blockchain there. So there is no kind of I don't think any issue in terms of implementing the blockchain in the existing technology because you need to replace everything, even no need to replace anything. So you can simply add another layer on top of your existing technology. So, like for example, if someone employed like Walmart is implemented so Walmart already have their tech savvy and tech platform for running their Walmart business today, now they are in the blockchain groups and they are not going to replace those particular complete end to end tech, they can simply take one piece and implement the blockchain layer and they can just plug and play their existing tech legacy technology to the new implementation. So, simply you could write your smart contract your blockchain infrastructure blockchain layer until plug and play to your existing technology stack available.

Augustine Madumere 15:46
There are some challenges that you might share in integrating it in an existing process or some challenges that you have encountered or you are aware of via example code review?

kamlesh nagware 15:59
Many challenges about the people relating in some terms of the interoperability perspective, because like, for example, I think there's a bigger concern because maybe suppose the people within the Walmart thing there, maybe hundreds of different supplier and all the supplier having their different tech stack, maybe someone using Java summons SAP some mainframe. So coming and convincing all to the same ecosystem or seeing kind of tech stack, like, whether they want to implement but they need some kind of understand like, even like in the blockchain itself. So there are multiple different frameworks. And we can't convince everyone to be building on the same blockchain like somebody's Etherum there is a hyperledger, arthropoda quorum and mainframe platform. And so bringing all the stakeholders in the same kind of consortium, same kind of blockchain network is challenging stuff. And another is kind of creating the shared revenue across the different distributed programmable actually implementing a blockchain and they can see the clear ROI out of alternatives, but how you can convince the supplier or another manufacturer to come on the same platform without slowing the some kind of ROI of their investment. And second life when implementing who will be the responsible of the particular network or solution? And if is, maybe the orchestrated by all the participants and how secure the governance model around it. So multilevel often failed around the governance structure of the particular network like to on what and what kind of the governance or ROI and all the things, if you're not giving, there's no benefit to all participant in the network, then in challenging stuff, in terms of bringing all the stakeholders in the same network?

Augustine Madumere 18:00
For you, what will be the immediate steps that are necessary to make it happen? Right. You mentioned about incentives. You mentioned that about governance structure, which is also a challenge. And other sort of also the human factor in terms of mindset, if I will, if I'm not wrong, right.

kamlesh nagware 18:28
Yeah, So I think, other than interoperating, and maintaining governance model, another is a mindset like like a small player, or if one supplier, he don't see the reality of blockchain implementation and

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doesn't direct benefit to them, in terms of the mind thing, so maybe they're not seeing direct ROI in terms of implementation. So convincing someone on maybe bringing onboard on the same thing consortium model, the same manufacturer, same banks and supplier by customer authorities on the same platform. And so I think creating the governance model is a very important factor for success with any blockchain network, especially in the enterprise world.

Augustine Madumere 19:12
So for your point of view, the steps that were necessary to make it happen would be for instance, to create innovative mindset in the management of the of the organizations.

kamlesh nagware 19:30
it's an awareness about the what they will get into blockchain implementation, either direct or indirect ROI, maybe there is some operational efficiency improvement. There is somewhere maybe the compliance reporting improvement, there will be some direct ROI to the another stakeholder so how do you balance and whatstakeholder will get what and seeking and creating the governance model around it.

Augustine Madumere 20:02
Even if he's a farmer, let's say a farmer in somewhere in in South India for instance, for instance, I mean, what would you think would be the necessary steps to make it happen? He me as a farmer, he has no technical skills, he has no interest.

kamlesh nagware 20:19
Correct. So, I think for the farmer, for example, generally, maybe Farmers Union in other countries, maybe not they are not educated or maybe they are not tech savvy. So, someone who whether the food manufacturer, who will bring all this farmer on the boards, via incentivizing their organic farming or maybe their sustainability practice or ensuring that they will get the right price of their crop and transparency and trust the farmers crop in the market so this kind of thing, and I think the lead farmer maybe created their own operating copperative society kind of thing. And some, they have their own blockchain implementation. So this kind of like any agriculture supply chain in pharma is not starting the network. So critical point like who is taking the initiative, whether it's some food manufacturer, whether it's some third party company, who will try to bring all the stakeholders on the same network, whether some big pharma whatever tech savvy Farmer is starting initiating. So that way

Augustine Madumere 21:43
I agree with what you said a lot of also, other practioners agree with this incentivizing as an approach to help to make it happen, market visibility of the farmer and his product, which he can use when he is pitching to other new retailers, I want to buy his product, right, you can say for instance, my product is already on a blockchain, your customers can a scan of code, they can see the entire journey and where the food was produced and how the food was grown and how the farm is maintained in terms of sustainability or in terms of, of using manure , for instance, fertilizers, not just the chemical, or synthetic products, thank you for that also the right price, that they will still sell at the right price, they will not have any issues with their data being on a blockchain that they don't have control over. Don't you think that will be a very difficult one? I think I'm jumping one question, but I will still come back to that, because

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we have mentioned that is more on trust, right? We have this trust model, which is kind of a tension related to do we trust in blockchain code or we trust in the institution or participants of the blockchain solution and trust in code require companies to agree to a universally accepted rules, you know, maybe tied to a smart contract. And then institution, it is mostly elicited from for instance, IBM, right, believing that IBM will maintain network that adhere to all the rules or compliance requirements that is, How can trust be established from farmers my point of view, right? And what do you think is required from the participants to have that trust?

kamlesh nagware 23:50
So, I think trust can we be bring via governance, so for example, suppose if you know who are the network initiator, who started the blockchain network, then what are the different stakeholders joining then if they that network, new participant is getting the rights to governance rights on the network, they can see and they can manage the network, then, because like, it's always about the decentralization of the governance. And if you're not giving the decentralized rights and governance to the stakeholder in the network, then it's very hard to sustain this kind of solution. So, whatever the solution, I see where the blockchain success is the right governance model the set and bringing as per the even like, bad governance model and then incentivization of the stakeholder and the users in the blockchain. So I think that is the right I went about I think that is theoretically looks very simple, but what come to the implementation or I think technical reason is not a challenge. The challenge is the kind of creating the right governance and incentive model.

Augustine Madumere 25:11
Okay, I will come back to this, again, when we will look at the accountability model, I would like to because it will be it might be tied to the kind of solution you have, if it's inclusive, or exclusive, I mean, inclusive means that it is it's open network. So, we have this, in our framework, we have all the integration tensions, which are related to the openness of the blockchain application to other participants, whether it is inclusive or exclusive approach there are tensions, also that ties that to the profitability of the company, right? if it's exclusive for you, you want get value out of it, you want to have kind of a profitability incentives, because it's exclusive to you and have an economic advantage, right in the market. But if it's more of an open, then you need to find partners that have or share the same view or interest, to be able to grow the network to benefit from it in the long term. Right. So do you think restricted access to infrastructure makes sense? And what would be the benefits in any of the options that you support?

kamlesh nagware 26:41
Correct? So I think people definitely, I think, depend on the typical business scenario. So maybe, there are some exclusive network where the stakeholder can see the direct ROI. And they can come up with exclusive networks, like for example, some trade lens, for example, is going to network to the who will come on board and share the kind of governance model and other inclusiveness where we have the different scenario and where we can make the solution is a clue to the specific stakeholder specific because in the exclusive, usually dominating the network, whether you start with the network, or when you ask everyone to be on the same network, and I think that's why all that in trade finance network, you can see some kind of failure. So like, for example, there is a Vidor trade where as a trade finance network, which recently shut down the network, because they didn't consider the inclusiveness as well

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as the right governance model. Because because they were some kind of blockchain network and asking all the banks and the external come to their platform and share the data. So because there is no right governance model to come to the this kind of network, so it's kind of exclusive to them only. And they thought like, it will survive and we work but I think I think maybe because if there is a another inclusive kind of solution available platform available where participants to see the ride, then they can go there or I think inclusion is is a success criteria in the specially in the governance or blockchain is decentralized kind of environment and and that's the reason it in the blockchain.

Augustine Madumere 28:26
When you say it's a success, what do you mean?

kamlesh nagware 28:35
I mean, like, if you have inclusiveness in your even blockchain network and consortium, then you could accommodate the new participant and new consumer and you will get a win win situation for all and if in the blockchain is a no win win situation for all then there is a hard to convince someone to join your network.

Augustine Madumere 28:54
Yeah, I remember when is inclusive, right when it's open, right. Yeah. Yeah, but But when it's exclusive, then it's it's for for instance, I believe? Will you classify the IBM Food Trust as being exclusive OR inclusive?

kamlesh nagware 29:11
I think IBM sutra says I'm going to exclude the solution because I think they are running infrastructure and there are no right governance model. But for example, if you go to the trust your supplier, there is a supply chain solution trust was applied, it is a kind of inclusive model. So you could see there are a number of different stakeholders is a governance more governance in this security will separate company out of it and will separate network and all the participants playing some kind of role is going to cause some kind of incentivization This is not like only one person who started the blockchain network and the initial stakeholder getting the revenue out of the business only but not the other participants to the differentiation of the Food Trust or the this particular trust to your supplier network. So I think This was about having the right good governance model around it.

Augustine Madumere 30:07
I think from to the last, one of the last questions that I normally ask here, this is about accountability, right, this tension is tied to compliance within the company. For instance, you want to as a company to know is using the data? Are they complying with the rules, both within and outside so that you don't have legal issues. And we also know that for inclusive ecosystem or open public open blockchain there could be also anonymous user who is accessing and using the date. But in this, how can privacy and traceability, you know, foster internal processes and data in organization, but for private blockchain, it's different you want to know who is using it right. And tying that to your organization might create tensions.

kamlesh nagware 31:17

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So, I think we are talking about accountability right. So, accountability is also related to the governance and the consortium thing. So like,

kamlesh nagware 31:30
if the only the one entity one or one particular organization is accountable for the particular network or particular consortium, then I think there is no kind of decentralization. so it's become similar to Elastic network, right? There's a one shift entities managing all the other payment infrastructure of main networks. So you if there's no decentralization, and there's no governance in the kind of consortium or the network that is similar to the only some centralized infrastructure running on the blockchain Tech Tech, so, I think so, accountability should be also shared across the across the stakeholder in terms of the managing running operational cost, or incentivization, or the taking the decision in terms of onboarding a new vendor or new stakeholder in the ecosystem. So that accountability should be shared in term as a Decentralized Governance. And I think that's why these are digital autonomous organizations and this kind of thing, DAO organization kind of things are coming where the decision making itself is taken care of by some kind of smart contract, instead of the accountabilities given to the one particular stakeholder, but that accountability and decision making also also automated also decentralized using the automation a smart contract called DAO implementation.

Augustine Madumere 33:00
For instance, in the Food Trust applications, if you have a governance board, then this accountability from there is also is also controlled, right. So in this case, one will say when you move from a public to a private or hyper ledger solution, permission, then we are now going back to centralized control

kamlesh nagware 33:28
Its not only seeming like implementing a blockchain using the hyper ledger or something else centralized, you're creating some kind of permission network like instead of running and loading all your transactions of public blockchain, you are creating that network in the permission way, so you could or mode or be maybe add to the consortium member using some kind of governance rule. So and is not is not a private is the kind of consortium we can say like, it's not a randomized one company, but all the stakeholders who are in the part of the network is already approved and edited by some kind of decision making governance rule. So I think he is not a private is a is it going a permission network? Is it not all open network like Etherum and Bitcoin, is a permission network defined and governed by the stakeholder in the network.

Augustine Madumere 34:21
In this case, its permissioned. There is a governance model and a board that approves who is joining the network.

kamlesh nagware 34:35
Yeah, that is a is a private but it's not a kind of private employers with a private technology. So like, in Ethereum, there is maybe 7000 or 8000 nodes in the running business for the business transaction. You can't use this kind of system where you are writing the same data to the public blockchain the another company X in the US. Why in China is writing the same ledger.

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Augustine Madumere 35:01
Isn't this contradictory to the core characetrisitics of blockchain then?

kamlesh nagware 35:11
Yeah. So I think most people who believe there should be only one blockchain like Bitcoin and all the transitions would be there but then I think that is not feasible, that's not gonna happen.

Augustine Madumere 35:32
Okay. Is there anything that I might have missed in the conversation that you might want to add based on your experience because I know that you are very experienced in this field and I follow some of the things that I saw on LinkedIn and I know that this is a domain where you are an expert. For my research, maybe there's something that you think I might have missed and you want to add.

kamlesh nagware 36:00
So, I think maybe another kind of thing you can read about the sustainable supply chain thing they always have similarities playing a role in a supply chain, because normally whatever the solution I see in the supply chain, they are adding the sustainability as the criteria to success like for example, in your supply chain, how you are accounting the carbon or some kind of ESG goals and then then determining the product pricing and product featuring like suppose for example, to the product is a ESG compliant or maybe co2 neutral then then it add the layer to the blockchain itself to see the like. country so like currently consumer don't share well don't know whether what are the data they are shown by the manufacturer or the supplier is a genuine not because they don't see the data currently, and not see that notice the trusted like for example, recently I was in Dublin and I I see the interesting all the products and some kind of barcodes and QR code to see the co2 measure or some sustainability details, but how I can show whether this data is rightly producer some authenticity of the data because maybe the who are manufacturing the goods can write whatever they want to write in the particular database. So how the blockchain could add the sustainability angle to the sustainable supply chain or whatever the sustainability aspect whether ESG with the carbon accounting or climate related goals kind of thing that you could also consider your your research

Augustine Madumere 37:43
Thank you It was a pleasure having you

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