invitation to participate in the research project titled_ _p...

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SPEAKERS

Augustine Madumere, Patrick Brantner

Augustine Madumere 00:04
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 using interviews. Do you want to introduce yourself so I can record it?

Patrick Brantner 00:08
Yep. So, as you as you know, my name is Patrick Brantner. I'm professor for data driven Management at the University of Applied Sciences of Austria. I'm in the department for logistics, I'm leading the competence area data analytics and foresight. And basically our project focus on issues like predictive analytics in retail, predicting supplier reliability, predicting the demand in supply chains, analyzing also the reasons for example, for out of stock or overstock situations in value networks. And one part of our areas is also blockchain Analytics, which is mainly driven by Dr Chibuzor saw because he did his PhD in that regard, where we actually want to analyze applicability of blockchain, in contexts like product authenticity, you know, making sure that products are authentic, so that you do not have counterfeited products. And that you actually, for example, make sure that bio products are actually bio and making the origin traceable. So these are some these are some of the areas that we investigate in the context of blockchains. A project that we recently finished is using NFT's and blockchain to ensure that luxury products are not that easy to fake. adding something like NFT, a digital twin to your Rolex, and the Rolex itself can then only be bought and purchased with the digital copy. So the physical copy has to have a digital one, and the digital one cannot be counterfeited.

Augustine Madumere 01:53
That's an interesting project. The supervisor just created a framework from theoritical summaries, you could be able to identify and categorize the tensions that emerge when you are implementing

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blockchain or using it. And those tensions were classically categorized in terms of public and private. So despite that, we know that these are two extremes, there could be a partial private in the middle, right. And then the subcategory also will be what are the controllable tensions? And what what are the ones that we can manage? So in terms of controllable tensions, we are looking at, for instance, a positional alignment, how does the organization aligned within? Do you want to collaborate with everyone in an open and public blockchain? Or do you want to kind of have a private space for yourself or your participants? And what does it mean? If you are in a private space? How far can you grow it? It is a profit driven or if you're in a public space, you know that there's a possibility to have an open collaboration, meaning growth can come might be long term, but so these are the the conflicting objectives that were identified. So my job was to then Try to validate if this thing to exist. That's the just kind of a brief summary of my intentions on this right. And I know that you have worked on multiple solutions. So in this context, I'm looking at a mostly private hyperledger, and using IBM Food Trust. As a case study, the challenge there is that there are limited participants. it's quite difficult to get a lot of participants to participate. So I'm also extending to have experts who have worked on similar projects, so that they can also compare and use it to enhance the research. So let's move to the first the first question in terms of the solution focus on So how easy is this for companies to focus on putting the blockchain on existing solution rather than going into a completely an open new development, right. So, here, the question is what is the blockchain solution focus optimizing existing processes to the technology? So meaning, for instance, the blockchain, the IBM blockchain provides API's and the paticipants just need to once you are approved by the governance board, create an API which you can can use to already be on on the network. So the decision to do this, I mean, we just wanted some what how do they come to this point where they say okay, we want to create something new, I want to something existing. For instance, you mentioned about the diamond providence, right? I think that the company Evergrande is doing something similar, right, with diamond. So it looks like they will be done. And this is a similar project.

Patrick Brantner 07:16
So the question is, how easy it is to do what to

Augustine Madumere 07:20
do to decide on collaborating with others or using an existing solution? Because creating a new blockchain completely?

Patrick Brantner 07:33
So you mean, what is easier building a new solution? Or are are what I didn't understand the question 100 precent

Augustine Madumere 07:43
Building a new solution or using an existing solution, for instance, for companies, right. So what are the advantages of focusing on, for instance, which we use them the luxury solution that you created, I believe, participants will need to be authorized permission. So it's open to everybody. Right? What will be the advantage for corporate participants coming on that on the blockchain instead of creating a completely new one, when they collaborate with others, and they can also have a much better benefit?

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Patrick Brantner 08:31
You know, from my experience, at least in Austria, the use of blockchain is extremely limited in practice, and is actually not really existing, to be honest. But when I consider these two, these two elements, the first and main challenge would be the mindset of actually understanding that blockchain is much more than just bitcoins or etherum, you know, all of these cryptocurrencies are known by companies, but they don't understand that the logic behind the blockchain is much more than just cryptocurrencies. So what you would have to do in a first step is to show the company's benefits and advantages of the concept of blockchains. You know, having something that is really manipulation safe having something that is not steered by some other central parties, but it's always governed within the single blocks. And then when you can convince them of these advantages, I think, the two ways of developing something new or using something existing. It depends, in my opinion, very much on the use case and the company, you know, a small sized company. I don't think they would make a separate development project and build their own private blockchain for ensuring for example product authenticity, they would rather use existing software solutions and build on the experiences gained in the curse of this solution that has been applied in many different settings. So for small, medium sized companies, that would, I think be the only possible way to start for large-scale companies which have additional requirements in terms of, you know, like, central IT regulations, for example, big retail chains, I don't think that those big companies would accept using something that is also used or put can potentially be used by competitors or other companies, they will have a closed down maybe private blockchain that has been specifically developed for their requirements. So, I think it is much depending on the company's specific requirements, and this is much based on company sizes and the business that the companies are in, for example, insurance or medical companies, pharma companies, they have high regulations in terms of authenticity. So, if you have to do it to obliged to certain law, then picking pre-existing solutions might be difficult. But if you have something like just ensuring for your customer, that you can show them that this apple is originally really bio and not and not a cheap one, then you do it much more as a demonstration and for this, you could probably use something that is pre-configured. But as I said, in Austria, we do not have many practical use cases, so far.

Augustine Madumere 11:47
You something you mentioned that about if a customer is on a private network, then you have a you have a single centralized provider. So we which in this case also is contradictory to the blockchain, one of core characteristics of decentralization, right. And then you have this small companies give up the right to data to a certain extent, looking at the IBM, the claims are that the company participants choose who to show the data where and what to provide the authority; they provide authorization. However, I believe that the data, they also have access to the data, maybe in a anonymized way for analysis can also be used to create new market in the process of improving the existing architecture and technology; you can identify key trends that can then be used for further product development for the benefit of the of the provider. And that's actually a conflicting objectives , right? You don't want to giveaway your company competitive advantage. So to say, when you lose control hen you're doing that, and then you have these big players who then grow bigger and bigger, and it becomes difficult to to get out of the contract.

Patrick Brantner 13:01

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Yes, exactly. That's one of the things why I said that the big companies with strict IT regulations, they will never give away, a retail company would never give away certain data because it's all about efficiency, and they will never make visible their list of suppliers or the purchasing price is something like this. But if you would use blockchain for transactions, the provider of the blockchain could although anonymized; he could identify trends could identify potential sources for product purchasing. And then in the next step could offer that knowledge to either a broader market or it could benefit from that itself. So it is actually like what Amazon did, you know, Amazon provided a marketplace. But by providing that marketplace, they were able to perfectly understand consumer behavior. And by understanding consumer behavior, they are able actually to sell the right product to the right customer at the right time by themselves. And all of those companies that just used it as a marketplace, are now really struggling to keep up with those tight regulations that they have to follow on Amazon. And that could be maybe, I think that's a big fear also of many companies when they hear about the blockchain, so having public blockchains or private blockchains that are not controlled, or internally governed. This could be something that hinders companies, however, in my opinion, Most companies don't fully understand how it works. And they, you know, at least for Austrian companies that we work with the blockchain is still five to 10 years away in terms of application.

Augustine Madumere 15:17
Thank you for mentioning that, because in my readings, it always comes up in terms of data security, data governance, who has access to the data, which is already part of the if I look at my question was part of accountability, right. As a company, for instance, you want to know, who has access to the data, who is logging on to the data, who is doing what, and you cannot anonymize these logs. Because it from a GDPR point of view, want to know, all you have, you have to stall to be able to provide if needed, right. And also, you want to make sure that the access to data is within the defined governance of the company, you don't want someone who is in sales, to have access to customer details that are only meant for people in finance, or people in the billing to produce customer bill? Right. So this is, thank you that you mentioned that. Let's go a bit further into it. I will, I mean, I can jump differently to questions based on on the feedback. And this is really one of them. So in terms of value, I think we have discussed that. I had to put the definition of each of the of the tensions. So the value discipline here refers to tensions that lead to what business wants to achieve with the solution. So it's more on value creation on the need of the company, internally and also towards the customer. And like you said in Austria, the companies don't see the benefit at the moment, they don't see the need to do that. How do you get the companies to align or to understand that blockchain is the future for the business? Like how can you demonstrate that they can use it to solve a problem?

Patrick Brantner 17:38
You know, the only thing that works is having; they showing quick wins showing actually use cases or identifying use cases that touch some urgent pain point of a company and proving in a I would say in a overseeable amount of time that blockchain can provide or could be one solution for this issue. You know, if you just talk about theoretical benefits and confused them with mathematical crypto terms or whatever, they wouldn't accept it, what you have to do and that's for every data project, show what is the problem and prove that the blockchain in this context could be one solution approach that could lead to increased performance, leads to increased security or also lead to more efficiency in terms of getting new partners ready to exchange data to quit showing quick wins is demeaning is the main thing.

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Augustine Madumere 18:46
So quick wins using use case studies and demonstrating how how they can get it

Patrick Brantner 18:51
proof of concept Exactly. Yeah.

Augustine Madumere 18:54
So, what are the challenges when implementing blockchain in existing business processes in this context?

Patrick Brantner 19:06
In my understanding is actually what you have to be aware is that you understand the business process underlying the specific use case, what data is generated were and exchanged with parties, and actually also how to make sure that the interfaces to existing systems work. You know, it shouldn't be necessary that you have additional work effort to use the blockchain. It should be automatized it should be integrated into existing systems. And the biggest benefit is to ensure that you focus on the right process parts and that you have IT systems that are open in terms of interfaces that have appropriate APIs ready to enable a blockchain-based solution. it and others are still that, again, still, the biggest challenge not from a technical perspective, is the mindset of the companies.

Augustine Madumere 20:11
I read a story about a farmer who provides potatoes in France. And it was questioning what is the need for him to be on a blockchain is, he has no technical capabilities, he has no resources to implement this, this, this solution. And in that use case, I understood IBM or the retailer supported the company to pay for the implementation the company. And then they can demonstrate product authenticity, origin and enable also the farmer to use it to get new customers. And so you guys are potatoes are on the blockchain. And customers can see where it's coming from, and how it's grown, you know, so even if that is an added value for the customer, and also for the big retailer, and then he ended up he can benefit from a kind of, let's say, the marginal effect of it, you know, by using the den as, as one of his USP to say, Okay, this one was also producing, I would like to lower price or different quality, but this is what we provide, and we can prove it, you can show you, and your customers can be shown where it's coming from.

Patrick Brantner 21:33
Exactly. However, you know, different customer groups and different product types are much more suited or less suited to use that kind of solutions, you know, not not for all products, this would be desirable for the customer. So you would have to find out first what are product type and customer segments, and specific requirements, and then you can develop an appropriate solution.

Augustine Madumere 22:07
So, let's say for instance, that we are implementing, choosing between being open or exclusive. How do we restrict access to the infrastructure? Right? I know that, let's say there's a governance structure. How do you do that?

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Patrick Brantner 22:44
I think you have to have some parties, some institutions that are responsible for certain certification procedures. You know, this is the only way how you can grant access or deny access, I think you have to have some institutions, reliable institutions, that ensure that this party is allowed actually to use and be part of a certain blockchain solution.

Augustine Madumere 23:16
Okay. But, I mean, what would be the benefit for logistic companies that are in this solution, right. Do they have other benefits from being in a private blockchain?

Patrick Brantner 23:35
Well, it depends on what type of private blockchain it is. One benefit could be if you're part of a certain blockchain, you suddenly have access to, in theory, much more partners and customers than you would have before. You know if this is a blockchain regarding something like a physical distribution of goods, and now you are suddenly part of that and you can go into a business relationship with many, with much more partners than you had before. It broadens your customer network, your partner network, because you already justified or made sure that you are connected over the blockchain, for example, for sharing transportation needs and also for exchanging financial values, good values, and documenting it via the blockchain.

Augustine Madumere 24:25
Thank you for answering that it was a little bit difficult for me to formulate that because it might be contradicting to be similar to the previous question in terms of why you're choosing what we were to be on a private network. In terms of accountability, I mentioned that before in the beginning when we talked about companies understanding who had access to it and who is using it and how important is transparency and traceability. How does the forster internal processes exist? For instance, you have for the solutions that you have deployed or the people are using, you know, how do how does it work?

Patrick Brantner 25:21
transparency and traceability is in a blockchain context, in my opinion, it's really important. It's one of the main arguments to use it in terms of maybe not so much 100% transparency, but in terms of ensuring manipulation, safety, that no, actually no third party or no central party, did manipulations to some datasets to ensure that what you see there is authentic is true. And has not been hacked or has not been modified. So transparency, authenticity, or traceability, I would say, is, in my opinion, one of the core of blockchain solutions

Augustine Madumere 26:09
for internal processes, is it also important for the company

Patrick Brantner 26:15
For internal processes inside the company? Now, this is hard to answer, because I would have to look at the specific solutions that you talked about I usually internal transparency, internal processes, it has certainly some benefits, because we all know that in classical operational systems, people often make

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some correction bookings, you know, they have a mistake, they have the wrong amount of goods in the warehouse, and then they correct it, adding something reducing it saying, it has been, you know, like, it's not there, and they can somehow manipulate the data set, that it doesn't look too bad for them. With a blockchain-based system, it could get more, I would say, more authentic, more real life in terms of ensuring that people are not so easily pushed to changing or making something like a correction booking. So it also has benefits in that regards. But again, it depends so much on the specific use case. I cannot give you a general generalizable answer in that regard.

Augustine Madumere 27:28
Okay, can you make a reference to one of the solutions that you have deployed?

Patrick Brantner 27:35
You know, actually, we didn't deploy a solution. we should focus more on blockchain based projects. And now we have one project. But this is these are actually use cases that just show the potential towards customers, you know, for the luxury product we do it is just analysis of requirements of customers, and providing a basis of requirements for blockchain based as technical solutions in the next step. For this buyer's product stuff. Also, what we are analyzing are requirements from Austrian customers, would it be useful? Would they accept it? Would they use it for internal processes? I can only think of what I would imagine, you

Augustine Madumere 28:45
Based on your experience. how can we establish trust between these users between the provider and other companies participating in a way that the objectives are very clear? You know, that that I know, it's always companies and leads to smooth smoke from us and companies are not on the same level with IBM. Right? For instance, I that's a big company. How can we establish trust and what might be required?

Patrick Brantner 30:58
You know, it's actually a very difficult question. And it's, it's a question that is not not only for blockchain stuff, but generally, for all platform-related or data solution provider related stuff. You know, as soon as you have relationships with some party that has access to your data, you have to ensure that the data that you provide, and that they maybe analyze or maybe forward or manipulate is only used in the regard that you need it to be used. And I think there's actually, it's really hard. I mean, you also, of course, you have all of these legal documents, legal regulations, that ensure how data is used in which specific context and for which purposes, it is analyzed. Also, the general data protection law that we have now is one of the public frameworks around that. I don't think this is something that is that should or has to be answered only for blockchain solutions, it has to be answered for all data solutions. You know, if a provider sells goods over Amazon, in most cases, he has to do it, because otherwise he wouldn't have any market. So he just accepts that Amazon is using his transaction data to learn and predict something that can also be interesting for Amazon or for other for other parts of Amazon. And I think the blockchain, it will only work when the use case, the benefit that is understood by the customers, is bigger than a potential fear of giving away data. And at some point, this use case or this benefit becomes so big, that the fear of giving away data does not beat any more the decision to join the blockchain or not. So the general stuff that we already do in terms of legal agreements, to ensure

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data usage, that has to be the same in the blockchain context. But I think in my opinion, the use case, the benefit is not big enough yet to pull companies into the blockchain, at least in my understanding, it's like, you know, like, it's like a social network, you do not want to use it. But suddenly, all of your friends use it, and then you don't have any contact to your friends. And in order to stay in touch, you also decide to use it, although you are afraid that people might have some data of yours. But the expected benefit is much, much higher than your fear, you know, either use it or don't use it. And don't, you can never make 100% sure that the data is not is not abuse is not full to other use system you want it to have.

Augustine Madumere 33:59
Thank you. Thank you, Patrick. For that, I will explain that. Because I know it's really difficult to know how to how to implement that. And here again, you mentioned the tension of in terms of what is the benefit for me, what am I afraid of losing? We don't how can I make a decision to say, Okay, I will live with it, because this is coming from there. And even if it's my company, so for the profitability of my company, this is interesting. Right? Thank you for stressing that a lot. I think almost the last question, maybe something that you think that I might have missed you want to add to this, something like maybe might have left out in the course of this conversation, looking at the tensions that do exist.

Patrick Brantner 34:52
You know, maybe one thing it's not about tensions, but it is about increasing trust. You know, it is always good as a provider of such solutions to have well known big reference customers, if you show for example, you know, the marsk, blokchain use case. This is something that people remember, you know, you can, you can show a use case that you implemented successfully. Everybody talks about it, nobody understands it, but everybody talks about it, too, you can at least draw some attention to your solutions and provide some trust in terms of, well, if this big company uses it, it might also be trustable and usable for us. So reference customers is one big things, white papers, you know, providing publicly available white papers. I think that's also helps to understand for potential customers. Tensions in terms of tensions, let me think. Think most tensions are due to people not seeing the benefit not seeing the use case not being able to translate blockchain functions features to business requirements. So linking business requirements and business pain points with Blockchain based solutions. This this is maybe maybe one field that generates lots of tension.

Augustine Madumere 36:26
Thank you, Patrick, for your time. I'm glad you were able to support and help me.

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