00:09
Speaker 1
Hello and welcome to the Human and Machine podcast. It's been a couple of weeks. My name is Jaco. I'm the co host with Lenny. Lenny's with me. Lenny, how you doing?

00:17
Speaker 2
Good to you. It's been a while. I've missed a few, but I'm glad to be back.

00:21
Speaker 1
Yeah, it's been a couple of weeks. Yeah, it's been a bit of a roller coaster the past couple of weeks.

00:25
Speaker 2
End of the year madness. So, yeah, it's been rough. It's always like that from October, the end of the year. I don't know. People's got money to burn, so it keeps us busy in the project and engineering space.

00:36
Speaker 1
Yeah, for sure. We're on episode 26. If this is your first time listening to the Human and Machine podcast, this is episode 26. Hard to believe that we've already done 25 of these and recording 26. Now, if you missed the previous episode, that was with Vanesh Maharaj from PwC, speaking a little bit about. Not a little bit. We had a great conversation with Maharaj. We're sharing some insights and knowledge about technology, the role of technology as far as smart manufacturing and smart factories go. Really insightful chat with Vanesh. Apart from just being a very good human being and a great person, very knowledgeable on the topics. If you missed that episode with Vanesh, there was episode 25. Have a listen. Definitely insightful and valuable. This past week we've had some people in our office, which was just amazing to have.

01:33
Speaker 1
I think after 18 months of Zoom calls and teams calls and sort of smiling at each other from behind masks, it was really nice to have some people in our office and engage face to face again.

01:47
Speaker 2
Yeah, I think that team, little intro when you get a call, it's almost getting me heart palpitations by now. Yeah, I'm not a big fan, but.

01:57
Speaker 1
For many it was strange to put on pants. Cool. So this episode we are talking a little bit about, firstly the mining industry. Not specifically the mining trends and things like that, but we are touching on the mining industry, but more specifically on the value of data, or not so much data, the value of information in the mining industry. It's a sector that we haven't really spoken about. We've often alluded to mining, but we haven't really touched upon what that data journey looks like in the mining space. And we thought that we should be doing that as mining is, of course, one of South Africa's top industries sectors. At least I think the mining sector in South Africa, it's always been the stronghold. I think it's generally known that it's a stronghold in the south african economy.

02:55
Speaker 1
I think we're ranked fifth internationally in terms of mining contribution and top three for certain types of metals, precious metals and minerals. And in a year, if you followed the news or followed some of the figures around or numbers around mining in the past year or so, give or take a year, has been so devastating. In many ways, the mining sector delivered a very strong performance.

03:17
Speaker 2
Correct. I see Anglo posted results yesterday. Very good results from them as well. It's been big contributions from those guys in the economy.

03:26
Speaker 1
Yeah. And we've observed as to your point, record prices, ran prices, at least for gold, platinum groups, iron ore, and even more recently, coal, which was good to see. And as many attempt to sketch this opportunity that technology provides, because that's the focus of this podcast, we probably should have said that in the beginning. We focus on the role of technology in the industrial and manufacturing landscape in South Africa. And as many attempt to sketch this opportunity that technology provides in, let's call it digitally transforming mining operations. It's really the people aspect. And if you look at the context of digital transformation, people process technology, it's really the people aspect that is attracting the most focus, and especially so in the mining space. I'm going to reference a recent study. We often do that according to research recent study reveals.

04:22
Speaker 1
But I find that the surveys from PwC are usually the most insightful. In the recent PwC survey of digital transformation in the south african mining sector, most respondents believe that there would be a change in the nature of the workforce to more skilled employees over the next two years. And that's obviously a number that's been brought forward quite significantly. And we have to agree with that. I think if you look at the mining space, the role of people is obviously significant, as in other industries, but there is a massive opportunity to enable people to do more and do things easier and better. So we're not the experts, even though we sometimes fluff through some things and we pretend to be. But this podcast is not about us.

05:09
Speaker 1
It is really about the conversations that we have with people that are the experts and people that are really in the cold face. See what I did there, so to speak. So for this episode, we really excited to make you giggle, Lenny. So for episode 26 of the Human Machine podcast, we're really excited to chat with Olmero. We've known Omaru for many years.

05:34
Speaker 2
Sure.

05:35
Speaker 1
I'm trying to think of the number now. I'm not going to guess a number because that'll give away my age and maybe embarrass you. And Omar, that's a bit younger. But we've known Omaro for many years in many different roles. Just a fantastic person, very passionate about technology and data. And when we thought about speaking to somebody that's really close to that environment, in that environment, we couldn't think of anybody better than Omaru. So today we're chatting with Omaru. Omaru is with a business, an integration business called CSI Control Systems integration, where he's currently in his current role. He is the team lead and an architect at a large coal mining business and provider. So, yeah, we're chatting with Omaro today. Ombro, thank you very much for joining us. We're looking forward to chatting with you.

06:22
Speaker 3
Good morning, guys. Same year.

06:25
Speaker 1
That was a long intro. Sorry, we tend to do that. Omaro, before we get into chatting about the stuff that we most passionate about, maybe give us a little bit of background about you and your journey. As much as your role and what you do has grown and evolved, so have you and what you've been doing and where you started off. Can you maybe give us a little bit of your background and experience?

06:55
Speaker 3
Hey, thanks, Jaco. Yes, I started off my career, so I studied electronical engineering at technical Pretoria, and then I started off as a technician at the coal company. For many years, we worked on the stuff that make things happen in real time. So as a maintenance technician on site, you are responsible for keeping the things running.

So we got the exposure to all of the systems, from the instrument to the PLC, right through to the ScaDa. At that stage, the historian was just something that information goes to. So after that, after a few years in that environment, I moved into the industrial it space in the information management division of that same company, where the information portion, so everything that gets generated by all the systems and instruments and so forth, where that gets picked up and handled and looked at.

08:11
Speaker 3
So in that environment, I worked for a few years, then I moved to the head office of the same company as a solution architect, worked there for a few years. And in the recent years, I've been working for the system integrator that you mentioned. I worked at a few companies, little bit food and beverage exposure, but primarily in the mining industry. I'd say 95% of my background is in the mining industry. And ever since, we've been trying to make sense of thousands and thousands of pieces of data scattered all over the place.

08:59
Speaker 1
I love what you said about the historian. Nobody says, we want a historian, we need an historian. I mean, the historian is the capability that you have to capture large amounts of data and extract value from it. So the need is not actually for any story, and the need is for information and value. That's a very good point. And Omar, just on the binding, is this where you sort of pictured yourself? Did you fall into it or. We often speak about our journeys. You picture yourself in a specific industry or environment, and naturally some sectors are a little bit sexier than others, but you end where you are and you're there for a reason.

09:44
Speaker 3
Yeah, I think very few people end up where they originally think they will end up. So it's the same year, but that's the journey that gets laid out for a person, and we are thankful for that.

10:00
Speaker 1
For sure. If you're a regular listener to the podcast, you'll know that through the conversation that we've had on the 25 episodes, we always attempt to understand the relationship that people have with technology providers and the outcomes. And for some it's deeply personal and it's positive experiences, and for others, not so much. And there's always a couple of reasons why it's not always a good experience when it comes to technology. And in many variables in technology, a lot of that stems from the ability to actually measure what's been done. And also on the back of that, you can only manage what you can measure. And that's where we see a lot of conversation sort of steering towards over the last couple of weeks is towards that you can only manage what you can measure.

10:56
Speaker 1
And I think for your journey specifically and your team's journey, Amuro, that's been absolutely a journey of data, to information, to value, hasn't it?

11:11
Speaker 3
Yes, Jaku. So over many years we have had a few attempts to make sense out of all of that real time. So many philosophies has been built on, especially batch processing and so on, where in the environment that I'm used to, it's real time processing. So real time processing we always find a bit more difficult because there's no real start and end time to things happening. And to put the context and a sense to that is always a challenge over the years.

11:52
Speaker 2
Fact you bring up, like you said when you were instrument technician or even working at a system integrated company, the historian is normally where our hands stop.

12:03
Speaker 3
Correct.

12:04

Speaker 2

We just tick the tag to say hey, utterized, and then that's it. Because we worried about that real time. What's the value now? Is it scaling?

12:12

Speaker 3

Correct.

12:13

Speaker 2

Is it showing that the motor is running or not on the scalar page. And that's it. And we see it a lot. How often?

12:19

Speaker 1

We spoke about it yesterday. Do you see an RFP or a request for information or understanding where there's one line that says reporting, that's it. That's usually the last line as well, reporting.

12:33

Speaker 2

And I don't know, and to your point we see it quite difficult and I don't understand exactly why, but we do see it difficult for that type of person to move into a space where it's not real time anymore, as you said, now it's a start time and an end time. And there's some cleaning of that information. You need to do some little bit of aggregation.

12:55

Speaker 1

You look at the weekly report and you'd make a few decisions, correct?

12:59

Speaker 2

And it is quite a mindset change going from this real time instrument processing world. And technically it's still our space, it's still our pyramid. The historian is part of a scada, it's the data acquisition part. But yeah, I think we find it a lot that historians have tons and tons of information and sometimes it just sits there unmind, sorry, see my pun that I've done there, but it's unmind. But yeah, we see it a lot for people. And I'm glad that you, because I do feel it's very important that you understand where the information is coming from. So know the instrument, know exactly what the scaling and the unit of measure and all of the metadata that goes with that instrument.

13:46

Speaker 2

And how do you transform all of that data now to meaningful information to somebody that's got no clue what the pressure transmitter waitometer is because that's not his job.

13:57

Speaker 3

So Lenny, many times we see that projects gets executed in buckets, so there's guys responsible for the electrical portion of it, there's guys responsible for the control of it. And then like you said, the one liner that says reporting. So we find it in this industry many times to be a challenge because if you look at the way that the data that gets generated by all of these systems, if you handle that in buckets, there should always be a translation between every step. And I personally think if we can get that right, to do that in a collaboration where you design everything with information in mind, I think lots of these steps can be quite easier than it is currently.

14:53

Speaker 3

How we normally approach these type of projects where the engineering team has got a portion, your information management, you get so many versions of PLC blocks and especially your control systems and your SCADA systems in between because of these things. Just to give you an example. If your control system, expect your bucket, your electrical bucket to look a certain way, every version of that bucket is going to behave

differently. So that's a challenge. But we try and standardize in that environment as far as we can call it standardization, but it's definitely a drive to do that. And then I think we mentioned the historian layer. I think over the years it's become kind of the cutting point or the battery limit between these worlds.

15:51
Speaker 3
And we found we need something that do the translation between that real time in data world and making that information. And it was quite a journey. We tried a few things. You must think back now, ten or what years ago, we didn't have all the technologies and stuff that we currently have, but it's very important to get a philosophy and go with that. So we've tried out a few things, and the philosophy that works for us is the fact that especially on a business unit of size, it's very difficult to hire in resources to come and do something for you. So what we found to be the best approach for us is where you use technology in this space that you provide the people that know the stuff, the people on the unit, on the business unit, you enable them to help themselves.

17:07
Speaker 1
Okay, sorry, Amarisa, when you say difficult to get resources, you're referring to that deep knowledge and understanding needed to deploy that. Is that what you're referring to, the.

17:20
Speaker 3
Local knowledge of the business itself, not of the technology?

17:24
Speaker 1
Yes.

17:25
Speaker 3
Technology partners. They are technology partners. Guys that can really code very well. Yes, but normally those guys, they do know the spaces where they are in. But every business has got a flavor of its own, a way of operations. And what we found these days is the way that the business function is so agile. Markets are changing, drives are weekly different, so every week there's something new. That's the bottleneck. Things that need to be managed. And if you need to buy in resources every time you want to measure something, you mentioned a while ago, you cannot manage what you cannot measure. So if you want to measure something, you need to show it to somebody. If you want to show it to somebody, there's a lot of back end stuff that needs to happen before you can show it to somebody.

18:22
Speaker 3
Because the most important thing in my mind is to have a single version of the truth context. Absolutely. If you have multiple versions of the same thing with different answers, who do you trust? So to get that right, what we found is use our own people, empower them with the right tools so that they can help themselves. Obviously, in that space, you need to put in some governance and you need to put in some measures to still keep things in the right direction, because everybody can run in their own direction very easily. So by putting some governance, at least in that space, but using people that know the business, that can adapt agile with the business, that is where we found the best success so far.

19:16
Speaker 1
Yeah, I love that. Enabling people, that's the key thing. Enabling people not having to rely on the complexity of coding and the skills required, but enabling them to almost have, what do we call it? A self service buffet. I think in many ways, I would love to hear what you've done with the data mart. I think that's phenomenal. In many ways, that's what you've created. You've created a self service buffet.

19:43
Speaker 2
I think coming back to the RFI, RFQ scenario, one line reporting, this is where this whole notion around, I'm going to code something, it's going to serve that need for what I've quoted on, and I'm going to deliver it right. So I've delivered this report. That's what you've got now, as Almara said, because of the agility of businesses

and the need for information. If you solve problem a today, why do you need to look at the same report for problem a tomorrow? You need to focus on problem b now. You need a new set of reports. So this is where now you need to get the guy out again. He needs to because he's the only guy, right? He's the euro. He's the only guy that knows what's happening in that code. And goodness gracious, you don't know.

20:35
Speaker 2
If you open up those SQL queries and stuff, it looks greek. And you need to phone this guy, right? And he comes out and he changes it. And yes, you're the man, right? You did this for me.

20:46
Speaker 1
Now I've got a week later, the requirement changes week later.

20:50
Speaker 2
And I think this is very important in this space that if your requirement does not change week on week, I don't think you're using your information the way you intended to use it should change because each and every piece of information that you see, you need to have a decision on what to do if that information is not in spec and what is the action that you're going to take on that information to get it into spec? If it's done, move over to the next port of information. But as you said, if your information buffet is not set up in a way that I can just go and look at all of these things without having to get a guy in, then, yeah. I think you're going to have an integrator sitting in your office pretty much as a full time resource.

21:36
Speaker 2
And that's what we see in this reporting space.

21:38
Speaker 1
Omar, I love what you mentioned about the trust.

21:42
Speaker 3
Right?

21:42
Speaker 1
Because it comes down to trust. We spoke yesterday. We spoke a little bit about here in the office. We spoke about meetings and the purpose of meetings. Very often you'll find in meetings that the meeting exists to drive something forward, but very often, you'll find in these meetings, you spend 80% of the time of the meeting, you'll spend arguing about the quality or the validity of the data that you're looking at. And you spend the other 20% of the meeting actually getting to the decision making and the action where it should be the other way around. You should spend zero time, not even the other way, you should spend zero time arguing over the quality or the validity of the data. You should just take it as is and then basing your decisions, follow up actions on that data.

22:31
Speaker 1
So that's a very good point that you mentioned about the trust in the data.

22:35
Speaker 3
Yes. When we formally started on this data journey, we estimated that we're going to spend run about 75% of our effort defining what we're going to do and then another 25% in actually doing it.

22:58
Speaker 2
Sorry to bug you, but just tell us, when did that journey start?

23:03
Speaker 3
Yeah, you're putting me on the spot here. Now you will know my age. For me, that journey started in 2006.

23:14
Speaker 2
Because the only reason I want to bring that in. Sorry, I don't want to tell how old is my age away because I'm pretty much as old as Almora. But the point is that we want to make is also. You talked about buzwords. We spoke about buzwords a lot. There's now vendors that comes out. And what is the best one this week was our software is industry 4.0 ready?

23:38
Speaker 1
Yeah, our software is industry 40 ready. And before we recorded the call, I said to Omar, you're an expert. Just explain to me what does that mean? Because I don't know what it means.

23:49
Speaker 2
So the point that I want to make is that even the PwC result says it's going to be a journey.

23:55
Speaker 1
Of two years, at least five years.

24:00
Speaker 2
All I want to do is, it's a journey. It is. Absolutely. And it's going to take time to get it right. And as per Almara said, they're on this journey now for better part of ten years. They're learning things. They're figuring out how to do it. And I think you guys are in a position now where I think you guys got it sorted.

24:19
Speaker 1
You say you're 75% on defining and 25% on actually the doing.

24:25
Speaker 3
Then I actually found out that I was wrong. It's more 85%.

24:31
Speaker 1
Okay.

24:33
Speaker 3
And that is to get to the single value of the truth that you can trust. So that means you really need to define something. You need to put your business rules on paper, and you need to document it, and somebody needs to sign it off to own it. So that's something we didn't touch on yet. Ownership.

24:52
Speaker 1
Yes.

24:53
Speaker 3
One of the key components to success in my mind is that you need to find yourself somebody in business that's got the drive and the willingness to take it forward. Because if you apply the wheelbarrow effect, you push a wheelbarrow and you leave it there tomorrow, it's still standing there. They found, I think, 75% of all projects in this space fail within the first six months of the completion. If you don't have somebody that really takes ownership of it, to take it further because of the agileness of the environment six months later, what you

implemented is not relevant anymore, or large portions of it is not relevant anymore because your business drivers has changed or your bottlenecks has changed, that's not what you are actively managing.

25:46
Speaker 3
Because what is preventing you from doing what you're setting out in your business, being able to make that changes and to keep up is key to success.

25:59
Speaker 2
And Omar, probably coupled with that is to understand the role players. Yes, you might have one driver, and most of the times we think that driver that has got the drive in the business should be the CIO or the CDO. The chief digital officer, as they call him now, he must be on board. But also the different role players that's going to interact with the information, and those role players will have different needs and different requirements for this information, but they as well need to take ownership of that. And I think it's very important when you go on this journey to understand who those role players are and what their needs and initiatives are that they need to focus on, because it's going to change for everybody in the organization.

26:47
Speaker 3
Absolutely. That's very important. Lenia, interesting thing to mention. You said the one liner of reporting way back then, our one liner was just replace all our excel reporting. You can just imagine.

27:05
Speaker 2
Yeah, so I use the analogy, and I'm guilty of doing this as well. So when people come to me and say, listen, we want to digitize our excel or our handwritten reports, I fall in the trap of taking those excel and handwritten reports and just digitizing it. That's not the goal, right. I use the analogy of an airplane cockpit. There's a gauge. So what is the objective of flying an airplane.

27:37
Speaker 1
Is to get people safely from one point to the other point, correct.

27:41
Speaker 2
So my point that I want to make is if you're going to not have an objective of what the information is going to solve, you're already 1ft behind, right? So business objectives and sometimes, well, we in here to make money, right. So it must be a tangible business benefit of why you're doing this, right? So as an airplane pilot, you need to deliver people safely from point a to point b.

28:04
Speaker 3
Right.

28:04
Speaker 2
Now I give you a gauge, I give you a KPI, I give you a gauge on your instrument cluster. So the first thing sometimes that happens is either the cluster is broken or the gauge is not working. So there's an information problem, right. Your data is not cleaned, your data is giving you, and you don't trust the data. So that's the first thing that you then have to solve is cleaning or getting correct accurate data. The second thing is if you don't do this roles process of understanding the needs of the different people in the organization, then you give them the gauge. It's working. The data is 100% correct. But he doesn't look at the gauge. Why doesn't it look at the gauge? Well that gauge or information is not relevant for me to achieve my objective, right. So that's a decision problem.

28:50
Speaker 2
You gave him the wrong thing to make his decision on. And the last thing is the gauge is correct. I look at the gauge. So it is for me. But I don't change my airplane's controls to enforce how to drive this into action. That's

an action problem and I feel 100% if you're just going to have a one line item that says change our excel reporting, how is it going to enforce a change in the business to use this information now to actually drive actionable change to meet your objectives? And I think portion we miss sometimes when we talk about this information journey, we're all about connecting to the story and query the data and make it nice and clean. And then what is the decision and the action portion that we need to also apply to this?

29:36
Speaker 2
And unfortunately that's a little bit of a culture and a business thing. But Almary, you said it a lot, is that you spend so much time understanding the business rules and the business actions before you even go into that process of getting the information.

29:50
Speaker 3
Yeah. All that you mentioned just now is actually what ended up being one of our biggest challenges. And that is once you have this pool of information that you can trust, the culture still exists of people just wanting to put a report there that looks exactly like the Excel one that we used to have. And it doesn't enable us to start thinking information rather than crunching numbers in tables. So everything used to be tabular, where these days we are moving towards dashboarding and indicators and stuff, talking to you rather than you looking at the table and in your head defining what you're actually seeing. So, yeah, that is an ongoing thing, and it is right through the whole spectrum of business, but it's evolving with business. The more these things become available, people tend to adopt to it, but like everything, it takes time.

31:03
Speaker 2
I think there's a thing that says if you look at a report or a dashboard, it doesn't have to be a dashboard, even a report. But if you look at that dashboard or the report and you can't make a decision in 30 seconds on what you need to act on, then it's the wrong dashboard of report. So 100% correct, yeah.

31:23
Speaker 1
You mentioned about starting the journey and spending the majority of the effort and time in defining the needs, the process, the expected outcomes. You spoke about trust. So I would imagine your operations, or the specific operations we started were probably similar to most others. Lot of disparate data sources, lot of varying, different information required from different role players, depending on where they are within business. So your journey would start naturally to first of all encapsulate and capture all of the disparate data into one place, applying some kind of cleaning and then aggregation, and then contextualizing to that data, and then providing the different levels of information to different people depending on what they need to action an outcome. Is that pretty much the approach?

32:26
Speaker 3
Yes, that's pretty much the approach. So, like you mentioned, we've got all these data sources. I'm of the opinion you need to let that systems do what they do, because they are designed for that. They do it best. You will never, in my opinion, find a silver bullet that works for everything. So our approach is to let that systems do their stuff, but you need to interact with them, so get the answers from them. But in that space, we found quite an emptiness of. It was very difficult to bring everything together. And that brings us at a further point, and that is, we've spoken about the people, but you also need the technology, so you need to partner with the right people.

33:19
Speaker 3
The right providers of technology that you can adopt, and you can train your people and use that technology to work for you. And that is what we did. I don't know if it's partnered, but we started on a journey with certain software vendors. And at this journey, everybody has grown. And that space, according to me, I think, has been filled quite well over the last few years due to maturity of the systems in that space where you can apply your business rules using your people, like I mentioned. So that's where your people and your processes and your technologies all come together, because if one of them falls short, the other portion either need to do it manual or it's not happening. And if that comes together nicely, that's when you start getting your success.

34:25

Speaker 3

So in our space, we have that we using the tools in that space, and what we've decided on is, so that is all those function in a data like kind of environment, and then we've put a data mart on top of that. So all of the value chain of the business each have their systems doing what they're doing well, but putting the results that's been signed off and agreed upon, the results of that, putting that in a data mart with a structure that looks very similar. So in the end of the day, the consumer, which we have a term for, and we call it citizen developer, I love that.

35:13
Speaker 1
That's very insightful.

35:15
Speaker 3
Where we empower the broader majority of employees out there, because everybody these days are in need of information. Where they have like a shopping mart, where they can go shop for information. Asking questions. Yes, they're asking the context questions, and it's typically locations. And KPIs is kind of the definitions that we use. So that's what you ask. Where in your business do I want to look and what do I want to look at? If you ask that questions and your march structure is in such a way that it supports that he doesn't need to know what the instrument is called, and he doesn't need to know how it looks on the ScadA. But talking to a uniformed way that we define information, how we host it, and how we present it is in a uniformed way.

36:19
Speaker 3
Then we can train our people how to interact with the information. And the etio, in the end of the day, will be when everybody can go and help themselves to information and build whatever they need for today, because tomorrow it might be different.

36:38
Speaker 2
I love the fact of segregation between the data lake and the data mod. So two things that I like that the fact that the data mod encapsulates all aspects of business, so safety, quality information, probably even finance. Omar. So all of that data is in a data mod accessible for everybody. I think that we should stop segregating data not to be available to everyone.

37:07
Speaker 1
Yeah, democratize the data.

37:08
Speaker 2
I love the fact that you took the concept of keeping data where it belongs. And what I'm talking about there is to say the historian is built for industrial process data. Leave the raw values in the historian, and getting a data lake in between that then becomes the bridge between it and OT. Because if we think of the traditional pyramid of operational technology, automation layer, was it the new stuff around where it plays and almary? You can correct me if I'm wrong, but your data mart is probably either in your own private cloud at Xaro, but that's probably an it function to maintain and keep that data mart intact.

37:55
Speaker 3
Correct.

37:56
Speaker 2
Where the data lake is potentially something a little bit more on the OT side, but it already provides that context to the data to easily go into the data. And sorry, I'm going to pick on the IoT ready thing again, but I think it's very important to understand that. And I think a lot of people fall in this trap where they take the raw data and they just move it into the data lake.

38:27
Speaker 3

Well, that was one of the challenges that we need to overcome, because like I mentioned, different versions of buckets, different versions of PLC code, different versions of SCADA environment, things are called differently the way that they, the ERP system that they use ten years ago called things on an asset naming very much differently, like they do it today. But it's a brown fields environment. You cannot go and change everything. So you need that layer that brings things together, even from different versions, from different systems, from different areas in your operation, that sometimes don't even closely look the same. So now you've got this environment where you can, with knowledgeable people from both sides, you can bring it together and make the expert type of data into information that's accessible to every guy and his dog.

39:35
Speaker 2
Yeah, I think it's something that happens in the south african mining context quite a lot. Mines gets consumed by other companies, mines get sold off to other companies. So you potentially inherit a system, and that's completely different. As you mentioned, it's brownfields, it's got its own structure, but you don't have the luxury, nor the time, nor the flexibility. And you definitely don't want to introduce the risk of going to mess inside the PLC to now change tag naming standards to address the asset that you just bought or purchased. So the concept of having a model that transpose all of this information doesn't matter what the tag is. But if you look through the lens of the model, it comes produced for section a. And if everybody looks at that thing, everybody knows that it was.

40:32
Speaker 2
It doesn't matter if it's a different vendor's historian technology, different PLC that actually generated the thing. But the point is to create that abstraction layer to give that unified view to your information model. I always take the example, people probably laugh at me, but I always take the example of a unit of measure. If you have two values coming from two different places and you do not integrate into your model the metadata of that property. Simple thing, unit of measure. One might say kilograms per second. The other waitometer might be tons per hour. If you don't use that metadata in your model to clean it, then it's going to be two different sets of things. And you can't compare apples with apples.

41:21
Speaker 2
So when we talk about contextualizing of data, it's not just getting the value from the historian into the mart, it's understanding the scaling and the context of that data to understand, hey, now I need to compare tons with tons. Although my unit of measure and scaling was completely different, and I'm sorry, a data mart is not a place to apply scaling and unit of measure to data.

41:46
Speaker 1
Omar, you probably had a lot of examples that you had to work through in terms of trying to attempting to apply context between two different sources, measures for one unified view. You've probably had many cases like that on your side.

42:02
Speaker 3
Yes, that's very true. Like I said, on the business unit that we function currently, some of the code was written in the early to mid 80s. That was the beginning of the PLC era. In the beginning of my career, were part of those projects, converting relay logic to PLC stuff. And if we can, in a greenfield environment, have the opportunity to redo that, we will do it completely different. But at that stage, it was the right thing to do because were leading the technology at that stage. But ever since, we've learned a few more things. And one of the important thing is, like I said, lookalistic to your whole operation, from the instrument to the manager in his office getting the information. So that brings us to something else.

43:05
Speaker 3
And that is the measures that you need to put in place to assure when things does change. Because things do change. You sometimes do change instruments, or you make changes in your PLC environment, and tomorrow everything in the boss's office is wrong because there's empty spaces in his information. So that's also something that we needed to cater for. And it still is a challenge that you need to continue. It's not something you put in place. It's something that, it's a way of work. You need to put things and measures in place and you need to keep

on doing it because you need to keep on trusting your information. It's not a signed off at day one, and then you step away from it.

43:58
Speaker 1
Yeah, for sure. I want to quickly chat about. I don't want to specifically speak about Covid-19 and the pandemic and the impact that we've seen, but I do want to get your views on what the value of that information was during a pandemic like Covid-19 like we've seen last year. I would imagine your business, like many others, had to very quickly pivot towards not only remote working, but effectively working remotely. And then the value of information is even more important than what it typically would be, and the trust in that information is even more important. Call it a period of last year through Covid. What was that like and what did that look like? What did you and your team have to do and enable to quickly provide that where so many more people were potentially working from home?

44:56
Speaker 3
Yes, Jaku. So obviously your infrastructure needed to beefed up a little bit. So that was the first thing. Quickly they had to look at Internet lines and breakouts. Being able to handle these, I don't want to say double, I want to say 10, 20, 50 times more traffic all of a sudden that everybody that used to sit inside of the organization at some way now needed to enter the organization from outside, but still in a way that you don't expose your business to it threats. So yeah, that's the first thing. And I really think this company did it quite well. Obviously in South Africa, the service providers are there. We are at quite a remote location where the business unit is.

45:54
Speaker 1
You like remote locations, right?

45:56
Speaker 3
I like remote locations. Internet ground here is sometimes a challenge. That's why most of our stuff is still hosted. I know everybody is on this cloud drive. For the enterprise applications, cloud is working well, but your core stuff in our operation year is still on Prem. So having that on Prem now, you have your people being able to reach that. And then, yes, we had to put a lot of extra effort and we had to speed up a few things to make certain that the information happened more automated, because many times we unfortunately had the circumstances where some of the people were off with COVID sick in hospitals and so on. And that just highlighted the point for us so much more, that you shouldn't be reliant on person.

47:04
Speaker 3
A sitting in his office, crunching the stuff into excel, to be able to physically print it on a printer and handed it in somebody's hand.

47:13
Speaker 2
Absolutely.

47:13
Speaker 3
Because tomorrow that guy can be off and he is allowed to take leave. And previously leave was handled by relief and so on. But if all of a sudden somebody gets sick, your things need to be in place. So it makes you think differently of how your business should be run. And I think a lot of businesses in South Africa has adopted and changed quite a lot. So our teams, were working almost completely remotely for quite a while now with the easement of the restrictions and the better stats that we see on Covid, the team that function with me, we are in a 50 type off in the office, off remotely, and then we swap around. So it also gives you opportunities to get things done, because in my mind, working from home, I actually worked much harder from home. Business have changed.

48:31
Speaker 3
I think also the clients.

48:34
Speaker 1
If.

48:34
Speaker 3
I think two years ago that you would schedule an online meeting with a boss and he will be willing to take it, we couldn't imagine it. And these days it's a reality. Many times you can now get five minutes or ten minutes from the boss, even if it's the five minutes that he would have walked to the boardroom that you had with him previously. Now you can actually talk the five minutes and get stuff done. So there's pros and cons to everything. But I do think that the agileness and the way that South Africans has adopted to the new way of work, it actually amazed me. I know we are adaptive, but I think it even overdone what I imagined would happen.

49:26
Speaker 1
Yeah, we are definitely resilient and adaptive as people in South Africa, for sure.

49:32
Speaker 3
Absolutely, you're right.

49:33
Speaker 1
I think there is definitely a lot of benefit that's come out of the forced remote work and the way that we approach the ability in terms of where we can work and where we can be effective. There's a lot of good things that came out of the COVID experience.

49:48
Speaker 2
I love the fact that you mentioned agile. I think when people, I mean, what a bigger kick of the butts on digital transformation than Covid, to be honest.

49:58
Speaker 1
The pandemic for sure.

50:00
Speaker 2
But I think people has got this notion that a digital transformation objective is a very costly and you need to large, and it's a very expert field. We always say it, we throw it a little bit on our head. If you take a very agile approach with small business objectives with a very good return on investment or ROI. Digital transformation can be as simple as delivering a number for a guy on his cell phone versus a whole massive software investment.

50:36
Speaker 1
And you build on that incrementally.

50:39
Speaker 2
So I love the fact that put an agile approach on it and I think, sorry, last thing. I think that one liner just to end up that one liner that says reporting, I think because of the nature of us as it or automation engineers doing stuff on a waterfall project kind of methodology, as we've always done at the end of the project, there's your ten reports. I sign off and I walk away. I think it's very important to understand that potentially I might be completely wrong, but I think information driven projects should be more on an agile approach. Show benefit immediately on a KPI on a piece of information rather than at the end of six months delivering ten reports that nobody even seen before.

51:24

Speaker 3
It's very important to negotiate that with your client from the beginning so that they are expecting it in that way. You don't need to take a big bang approach. If you deliver the first two or three things that will automatically be the gateway to the rest. And once they get that one value on a cell phone or something and the luxury of having that will then drive also there. You always have to have the bosses that roll away rocks in the road for you on your journey and as they had a taste of what they can have they just drive it much harder.

52:09
Speaker 1
That's what you get for your sins.

52:10
Speaker 2
Olboro.

52:14
Speaker 1
That'S what you get for doing something really well. I wanted to quickly get your opinion on what you mentioned about the. On prem versus cloud and I mean there's a lot of protagonists for both. There's a lot of people that still perceive the on Prem to be the only way. There's obviously a lot of protagonists for cloud. It feels like there's, especially after Covid, it feels like there is a much more widely acceptance of wider acceptance of hybrid, a hybrid kind of an architecture approach. Do you also find that?

52:53
Speaker 3
Yes, I'm still an old school believer. I like to have the stuff close to me. Maybe it's because we are on a remote location. Like I said, Internet, our Internet is not where Europe is. So that's a reality we have to take care of. But there's horses for courses. Definitely your tools that you have in the cloud, especially if you, and we haven't even touched on what you can do with that information. On an automated way where you have your ais and all those type of discoveries and those type of things.

53:41
Speaker 1
Machine learning as a upset of artificial intelligence. I mean, there's incredible things you can do now.

53:50
Speaker 3
So in that space, definitely. But in your tacky on the task stuff, I think we will still be for quite a few years that on Prem will have its place. My opinion is still that you need to be able to pull out the wires and shut down all the comms into your place and it still need to function. Because reality is that sometimes you cannot 100% rely on the stuff that you cannot see.

54:23
Speaker 2
Yeah, just for international listeners, tacky on the task. Tacky in South Africa is a sneaker or a running. Yeah, so what Almara is referring to is the actual things that run your explain.

54:37
Speaker 1
We have to explain what a bucky is. Omar, I love what you're doing in terms of the data transformation, the defining stage, the contextualizing of the information, making that data available as information to different role players in the organization, depending on their needs, and recognizing that it's agile, flexible and continuous. I think that's probably the most important elements that you've mentioned that many people don't realize when undertaking the journey. And to your point, you've learned and you're still learning. We're all learning every day. And I think having the technology with the people, with the right mindset that accepts that and recognizes that's a winning combination. So yeah, thank you so much for sharing with that. I think it's a very positive message that you've shared this morning and it's also recognizing the realities of what a journey like this looks like.

55:44

Speaker 1
So thank you very much for sharing. It was really insightful.

55:47
Speaker 2
Yeah.

55:48
Speaker 1
And honest. I found your conversation really authentic and honest, which is great.

55:53
Speaker 2
I think one thing that stood out for me is also the notion that it and OT can work together.

55:58
Speaker 1
Absolutely.

55:59
Speaker 2
I think you guys did it very well with the segregation clover franchise from Clover.

56:03
Speaker 1
They went through the same methodology. It's a necessity.

56:07
Speaker 2
And I think if the parties understand where they play well and what they can offer for the difference. But very importantly, having that bridge that assists between OT and it data, I think that's a very good strategy that you guys put in place.

56:26
Speaker 3
Lenny, if I can just say one more thing. It's not a project. It's not something with an end date. It's a way of life. If you don't treat it as a way of life, it will create its own end date very soon.

56:43
Speaker 1
Yes, it will. Yeah. As we've seen. Omar, thank you so much. Do you want to give us any big, bold projections, forecasts, predictions, indications of what you feel this data to value space will look like over the next couple of months or years? Any strong personal opinions?

57:05
Speaker 3
I definitely think that the AI space is very unexplored. I think for us, the journey up until contextualized data, we've come a long way. We've made a lot of progress. We learned a lot of lessons. We made a lot of mistakes. But you learn from your mistakes. I think in that space we kind of move towards the point where we're getting things under control. Moving into the AI space, I think we haven't seen the tip of it. I think there's a lot of things to come and I think there's an amazing amount of opportunities that's going to arise from that. But it needs to be built on solid foundations. So that was our approach. Get your bottom layers solid because if you have garbage in, you're going to have garbage out. That's my prediction.

58:04
Speaker 1
Such a good point. I love that you've mentioned that. It's crucial. Really, really good. Ombre, thank you so much. Really enjoyed the chat with you. I feel like we can chat for a little bit longer still, but thank you for sharing. Thank you for the insights and thank you for the prediction. And I agree with you.

58:22
Speaker 2
I speak to Omar almost every week.

58:23
Speaker 1
So I'm not going to say goodbye.

58:26
Speaker 2
I'll speak to you again soon.

58:33
Speaker 3
Thank you very much.

58:34
Speaker 1
Have a good weekend and we'll chat soon. So that was episode 26. I think I said episode 26. I'm not entirely sure what we're going to hold next. I know we continuing the chatting in the mining space. I think we're lining up some PwC again, maybe somebody from Minerals council from South Africa to get a little bit of know. We speak about data and technology. That's what we're passionate about. I think we're lining up somebody from the Minerals Council of South Africa to give us a little bit of a broader view of the overall mining position in relation to technology and people in. So I think we'll cover that for the next episode of Cool. Maybe we can speak to somebody, maybe in the mineral processing side. Yeah. So we'll continue with the mining thread.

59:20
Speaker 1
If you enjoyed this episode, please share it and please give us some feedback. What is that? Email address. If you've got any other topics you'd.

59:28
Speaker 2
Like us to cover, just send us a mail at podcast at Elementate Co za cool.

59:35
Speaker 1
Thank you very much for listening. And thanks again to Omar.

59:37
Speaker 2
Thank you. Cheers. Bye.