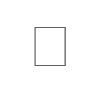
**Transcript**

19 April 2024, 01:12pm

 **CHAUDHURI, ATANU** 0:03  
Yes, it's it's recording now.

 **CHAUDHURI, ATANU** started transcription

 **Xx** 0:05  
Yeah. OK. Well, let let me tell you about bit about me before we start, but it might help.  
So Xx, head of innovation here at John Samanthy, been here 9 1/2 years now.  
My background is always been it, but I've come up. I've worked big companies, small companies, but I've come up for the last 20 odd years, actually more from the FMCG perspective. So work for companies like Diageo, Burberry, Cadbury's in the past, leading big sort of data analytics type teams to head of Head of analytics of GI Joe.

 **CHAUDHURI, ATANU** 0:33  
Mm hmm.

 **Xx** 0:39  
Bi, Burberry and cabinets before that so and I came here as a BI leader then moved more towards probably about five or six years ago now. I was sort of kicked off a whole area of looking at what we could do with really analytics to start with. Then at sort of more very quickly into digital.  
Across the piece and what it did was, and I went around a lot of the senior senior manager, senior directors across company.  
And interestingly, I asked. I only asked them four questions.  
And they were, you know, simply what's your, you know, what's your business unit sector strategy?  
What are the so for instance, your manufacturing director? What's your? What's your functional strategy and how is it tied into the sector strategy? What are the issues you're running which support your functional strategy, support your sector strategy?  
And then how do you think you know data analytics at that point obviously been more towards digital, might be able to help?  
And you know, end up being almost like 2 hour therapy sessions with these guys where we're going. Well, if only I could see this KPI. And if only I could see this metric and if only I could pull these data sets together, blah blah blah. So it was quite an interesting exercise to go through.

 **CHAUDHURI, ATANU** 1:43  
OK.  
Mm hmm.

 **Xx** 1:53  
Because John's Matthew, do you know much about us as a company?

 **CHAUDHURI, ATANU** 1:55  
Yes, yes, I know a little bit.

 **Xx** 1:57  
OK. So we're we're obviously over 200 years old. We've very much grown by acquisition, so we've got.  
You know, when I joined 50, when I joined 9 1/2 years ago, we had 57 systems of record.

 **CHAUDHURI, ATANU** 2:09  
M.

 **Xx** 2:09  
Across the place, I think we're down to about under 30 now. So we've made some progress, but we still have a lot. We'll have an SAP system is about 10 or 12, JD Edwards at systems as old.  
**[ Digital Experimentation to start with ]**

**So I I've been sort of starting to say, well, what can we do more from a data perspective and obviously ultimately led to digital and you know started, you know I managed to get some seed funding to do some digital experimentation, set up an innovation process, innovation funnel works right across the business.**To set up the process by which anybody can come up with an idea of saying actually we want to have a look at this.  
And we are, you know, put some teeth funding behind it, you know, not huge 25 to 50K type stuff to do a small scale experiment.  
And then you know, if you come back and if that was successful, we've then obviously then look to get the business funding to then Productionise app and scale it.  
**That was very successful. We ran 100 and 2000 and 30 experiments over the course about four years.  
So you know, and we had, we had quite a good hit rate actually we had more success than we expected to. We're expecting to get one in nine, one in 10, you know really landing we've probably got.**I think when we finally look to about numbers, we kind of finally stopped. We've, we've stopped, we've paused the process for a moment. I think we had about 45 or 50% of the projects we ran experience. We ran delivered some form of value. However, you want to describe describe value. Obviously we had a lot of ones which didn't work. Obviously that's fine. That's part of the process and you you learn by you know things not working as much as you do by things working.  
But what it's done is led to us adopting digital as a as a mechanism and as a principle, and Benny right across JM. So we actually steps formed initially of separate digital digital team.  
More really from a sort of a front end digital applications, I would say rather than manufacturing pure scale, pure manufacturing digital.  
But that's now been sort of imbued across right across the sort of whole it organisation. So digital forms are sort of a heart, if you like, a background of everything we do.

**Xx** 4:23  
Very much from a manufacturing perspective.  
**We are looking modernise all of our manufacturing processes.**  
You know, we've got we've got some very bespoke niche manufacturing processes we have to adopt to make the products we make. And again, if you know Jonathan, Matthew, then you know as a company.  
But you know what we do is we don't tend to make a final finish good.  
Product to sell to a customer. We're always in effect the forward description, making intermediate, which then goes on into some other sort of manufacturing process, which then goes on down the line. So if you look at for instance catalytic converter.

**Xx** 5:04  
You know Volkswagen say, well, actually it's going to be Corning. So we're going to make the provide the, you know, the actual we call tend to call brick or substrate, **which is a ceramic element with lots of tiny holes about millimetre across channels. They provide that to ours**. **We do the sort of clever chemistry to get the chemicals what we could wash** out to a deer to the surfaces at ideally atomic level.  
Channels. **That's a hard, complex bit of manufacturing process, but once we've done that, then calcined it and baked it and sent it off. We've then sent it off to somebody else then actually make that into a an exhaust component and ultimately that component will go back to Volkswagen and get bolts under under a car.**It's the same for us with the **hydrogen industry, where we're making the fuel cell.  
We make we're we're involved in both electrolysis and fuel cells, and the hydrogen fuel hydrogen economy chain. But all the bit we make is basically the actual fuel cell and electrolyzer membranes.**

 **CHAUDHURI, ATANU** 5:57  
Hmm.

 **Xx** 6:02  
You know the PEM electoral system membranes, which ultimately will go to like a Bosch or a pug. Power will then make those stacks up into a fuel cell, which will then go to a forklift or an electrolyzer unit or whatever.

 **CHAUDHURI, ATANU** 6:15  
Hmm.

 **Xx** 6:15  
And and the same on the catheters technology side where we when we do two things there, one is for the licencing side of the business which is where we've got some very smart process engineers who you can come to us and say I need to build a new methanol plant in India.  
OK. And what what? What's the output of methodology? What do you want, blah, blah blah, what's your metrics you want to work towards? We will help design that plan for you and build over, give you the process modelling and all the chemical chemical engineering behind it. Oh, **by the way, we can supply you with the catalysts you need in your plant to now allow your chemical process to happen ultimately make methanol and we can do all the technical engineering and process engineering** and the refills et cetera, et cetera, et cetera. So that's how that business works.  
The last part of this is what we call Pgms.  
Which surrounds refining, recycling, the precious metals back out to spent catalysts, and that's where we're looking at platform group metals, platin.  
Rhodium Ruth, ruthenium. And we're we're one of the best at doing that with the biggest secondary refiner platinum group metals in the world and we're refined it's 99.999%.  
I can see, you know, refining metals back out of spent catalysts and obviously it's about 9899% more efficient from from an energy perspective to refine spent metals than it used to dig it out the ground in South Africa.

 **CHAUDHURI, ATANU** 7:32  
I don't.  
Mm hmm.

 **Xx** 7:46  
The fun factor, which always still blows my mind is you know, you dig a tonne of tonne of ore out of South Africa, tonne of rock out of the mine in South Africa. And you, you're looking for four grammes of platinum in about a tonne of rock. So you really are looking for atoms, you know, it's still still staggered my mind. So, you know, you think about that from an environmental perspective and obviously we're all around your whole businesses around.  
Catalysing the transition to net zero. You know, us being able to take platinum group metals back out of spec catalyst is also a very good thing to do.  
So again, we are very much at middle process piece, so digitalisation.  
Not really. In the in the game of.  
You know, front end applications, we've got a few. **We've got one of our biggest successor is actually which came out the digital innovation process I talked about earlier actually is a front end application.  
Which we use. Initially we were using initially in our formaldehyde business and what we were doing is actually.**They were. We had again very smart process engineers.  
Who would go out to customer site? And they'd say the customer would say, oh, [ **Commercialising an analytics product**

**here's all my performance parameters, my form works. Plant rather high plant over the last three months, six months when our engineers will take all that data normally in Excel, take it back, load it into an access database, spend a couple of weeks cleaning it and changing it and amalgamating and writing reports on it and going back, going well in order to increase your formaldehyde out. But you need to change your water pressure by 1 bar. Whatever, you know, whatever recommendation was about was taking two 2 1/2 weeks and we went to the.  
Theory of synopsis and all of those experiments I talked about starting this idea of a synopsis, you know.  
Was can we use ML machine learning to actually speed up that process? So we took about they had 20 odd years of this data from golly so many customers. So we took all that data, took it in when actually you know what we probably can we can apply some ML process to it and we can actually process the data much more quickly.  
And so now that's turned into a full paid for product which our customers buy off us, which is a digital offering which they can log into**.  
Ultimately, we're looking to actually hook into.  
Directly, we're not there yet. What we do tend to do is upload their own data into our platform platform. We do a validation verification and then we're getting recommendations back, which obviously all get always get checked by an engineer at our end. But in minutes as opposed to three weeks.  
And we've got proven stats that show, you know, by using that process.  
**[ Outcome for customers]**

**Customers can get between. It doesn't sound like much, but between half and 1% efficiency improvements across their plants, that's a lot of formaldehyde. If you can get that sort of level of improvement. So we're looking rather sort of digital offering and process out across.**So we've done some maldehyde first we're doing methanol next and then we're going to look potentially to do ammonia. The whole sort of this idea of this sort of cut around this is plant based analytics if you like.  
So that's one of the biggest we've got in that area of sort of manufacturing process.  
Internally, obviously, we're looking to get again, we've got disparate systems from not even manufacturing execution side, but obviously from a limb side from the from the back office side of process orders process etcetera, side material side.  
So we're looking to do is and obviously the what we call recipe side and things like. So bring all that stuff together into a into a days late date where database date where.  
**[ Analytics for root cause analysis and problem solving]**

**Right model to actually allow our engineers to do faster process and problem solving and root cause analysis. Because what we will find what we used to find was you know if there's a problem or line and a batch failed for whatever reason it would take the engineers you know two weeks just to get more data together before we even start doing any analysis. And meanwhile you've got a customer, you've got Mercedes at the game. Well, where are my parts? You know it's not a good place to be in.  
So again, we're looking at using sort of digital technologies to.  
Start work days together. Clean it, bring it to one place to allow the engineers to actually put, you know, examine out a data on a much more grounded level much more quickly.**What else are we doing?  
We're doing a lot of a lot of R&D. One of the things I'm involved in right now.  
For instance, is **an autonomous robotics platform**, you know, really interesting piece of work looking at you doing, you know, using robots or toddlers, robots, mobile robot bases to actually run chemical experiments in the lab. Really fascinating. Cutting edge stuff.  
Other things we looked at from a digital side is you know rig data. So we've got our D rigs.  
You know all over the place and through university pulling work data together. Harmonise it, cleansing it. You know, getting it out from a proprietary format into a standard format which we can then do something with.  
Much more sensibly from a you know, either just from a basic visualisation and comparison perspective, or ultimately to then be, you know, loaded into some form of data platform.  
For for us to then do proper analytics on top of.  
So I don't know if that helps in terms of where we are.

 **CHAUDHURI, ATANU** 13:17  
No, that that helps. Yes, that that gives a lot of context and I I can understand it maybe just for the curiosity the 1st.  
Thing which you mentioned that you're getting a lot of data from the customers operations and planned and previously just to take two to three weeks. So when you look at the past data, is it essentially some kind of design of experiments, you know what is the right opera? What is the optimal operating range for different kinds of process and you already know and once the real data comes in you you know the range where it is operating and then you can very quickly.  
Sort of recommend any kind of operating range because we know the actual conditions in a plant might vary, temperature, humidity, et cetera. And when things are changing, you can quickly suggest the the kind of operating range is is it, is it a similar kind of thing previously maybe your engineers will run actually some experiments and come out with that range. But now with now with in many years of data, you can already figure out what is the right operating range of pressure as you said increase the pressure by 1 bar and so on.

 **Xx** 14:01  
Yeah. Yeah, it's.  
Yeah.  
Yeah, I wouldn't say that one's that we do use DOEA lot. We've got we use jump software, we've got jump enterprise licences to jump.

 **CHAUDHURI, ATANU** 14:24  
M.

 **Xx** 14:31  
And we use that very extensively across company. We've got six 700 people scientists trained in how to use jump and they use all the time and it saves us hours, days and days, months and months of time and effort, which is obviously you know fantastic.

**Xx** 14:50  
To ask about that, that that has proved to be valuable for us, that the customer was just is pure ml, they're pretty. I guess it pre is, I don't know actually to be honest. I guess pre is an element of what you might call the DOE approach to it. I'm not enough of a you know I'm afraid of male hyd engineer to be able to give you a straight answer to that one. I've seen Patani.

 **CHAUDHURI, ATANU** 15:10  
No, no, that's fine. That's fine. Thank you. So maybe then I move on to the next question.  
Obviously.  
You you said to your innovation. Finally you had some ideas and you have a process to go through this and and then you select some of the ideas, some work, some do not work. But can you talk about some of the challenges which you have faced in in any in any of these digital technology adoption obviously some of these are will have potential challenges either on the technical side but also on the human side of things.

**CHAUDHURI, ATANU** 15:45  
You are keen to do this or are they resisting to some of these?

 **Xx** 15:46  
Yeah.  
Yeah, yeah, I I I can. A lot of it is down down to.  
You know, I mean, I'm sure you, you know as well as I do, you know, people talk about the value of death where great ideas go to die.

**Xx** 16:03  
**Challenge: Lack of widespread adoption of innovative solutions**

**You know, you know, so you have a fantastic idea and you can prove this works, but then you don't get that that sponsorship and that take up and that, you know, widespread adoption of that crossing that Valley is very hard. And we've seen it a number of times in work. I've been involved and we're going to go, why the hell is this not being adopted more widely?**

**Xx** 16:23  
And the trouble is, a lot of time is you can do something in small scale and you can prove you know what appears to be great value. **But unless you can get very senior members buy in because a lot of time you're changing and altering work, practise and work processes and how people operate.** And we had a really good example where.

We worked with a company, a fascinating company. It really was a little startup. I think it was about eight or ten of them. We first started working with them. They've just listed on NASDAQ. So they've gone. They've done all right.  
We've found this company called Intensi.  
I I TINTENSEYE.  
Fascinating company. It was that we, you know, it was a really interesting sort of problem we're trying to solve, which is basically.  
JM Employee Health and safety is.  
At half of everything we do in here at JM, you know, safety is always on a priority and we we work very nasty, very nasty chemicals.  
And very, you know, you know some cases, you know, pretty intensive production processes, you know furnaces and kilns and you know goal as well. So we worked a company intense on what they've got is some some video analytic video analytics capability which we actually help them develop.  
And and and take forward and it was all around workplace safety. So you basically hooking this software into your your standard cameras on the factory floor and it was basically and it was brilliant because it was very good. You could basically train it to pick out not only instances, but more importantly near misses and actually near miss because we've all got safety processes and safety systems and safety recording software. So if somebody, you know, forced that, you know, safe argument, if somebody falls down and said the stairs.  
You know.  
Because they've tripped over a mop. But somebody's left the top of the stairs and simple example.  
You know that would get recorded and it would get written up. And you know all that sort of stuff.  
What doesn't get recorded just because of by human nature is a fact that somebody left a mop across the top of the stairs and somebody else has just stepped over it and then carried down the stairs and not tripped. But that is an EMS and actually that is that's more interesting to then analyse as to what actually happened. Those are things that don't get captured. But obviously if you start using video analytics.

You can start to pick these things up. Yeah. And you can make your workplace much safer because there's a whole I'm sure you're familiar with. Safety triangle of number of number of near misses to number of accidents. Number of incidents. Number ultimately number of deaths. You know, the more you can you know.

But down here, ultimately less people die. You know, at the end of the day, which?  
So we implemented this software and it was we had all sorts of, you know, stuff with. Yeah, I'm going to work with in Poland and I2 sides, part one in Poland, one in India.  
On on a trial basis and we had all sorts of funny games we had to do with working with local work councils and unions and all that sort of stuff. We got through all that, implemented the software and actually it was picking up some really interesting.  
You know, examples of where people were not working safely.  
Most is fantastic. This is great. And then they stopped using it.  
Why and? And it was just.

 **CHAUDHURI, ATANU** 19:53  
M.

 **Xx** 19:55  
They just didn't want to be prepared. It was because.

**[ Digital technology adoption perceived as leading to additional work]****Xx** 20:09  
**Which was critical employee safety. We're talking about. It was an extra thing they had to do on a daily basis and they just basically went look, they haven't got time to even look at this stuff even though it was giving summarised reports of there were five near Misses, 2 incidences and an accident like yesterday.  
And the whole thing died**. And we're just like, I never understood why that didn't take off. But it's just the thing from.  
**You know the thing we do find is unless you can do the, you've gotta be have a very strong change management function behind you.  
To enable these things to get embedded and and really sort of then take off flourish. I think that thing always gets missed when it comes to digital technology can be it's great, but actually if you're changing some way, somebody works, they're trying to change habits and try and trying working practises.**At hard, you know. And that's really, really difficult. Last thing we probably had the hardest thing about trying to drive digital change into the business.

 **CHAUDHURI, ATANU** 21:09  
Yes.  
Sure. Yep. No, that that's very helpful. And coming back to the the first point. So there are one of these things is about change management and and making sure that it actually is is continues and not just not one off project but other one that you mentioned about the top management buy in and that has to do with the the business case and how the robust the business case is. Did you see the currently the process what you follow to create such a business case, do you think that is robust enough there are opportunities for improvement or?

 **Xx** 21:16  
In in.  
Yeah.  
**[ Enabler – middle managers have to take the decision]**

Yeah, well, **there's always there's opportunity for improvement**. There seems to Tony, yes. Yeah. And it it, it also is trying to sign up sort of tie these into a layer of the organisation which which is, you know, appropriate is actually going to get the attention because, you know, **people say, oh, we need, we need senior management to buy this into this sort of stuff. But actually, yeah, a lot of things we're talking about here, senior management don't know, don't understand and quite frankly don't know, you know.  
They'd much rather push that down to sort of middle management and below.  
This is your decision and you see you do end up with dichotomy of who, whose accountability is to make a decision on these things**.  
Because yeah, senior management will sign off on a budget, but they don't want their details, you know.  
You know it's it's, it's more back down, middle management who are too busy.  
So yeah.

 **CHAUDHURI, ATANU** 22:43  
That's fine.  
Now, coming back to the skill question, So what kind of digital skills do you think currently you need in your organisation? Have you done some kind of a skill map and seen where the gaps and obviously always we find people that are sort of coming out of the college or relatively younger were more digital and tech savvy and then there are the senior people who have a lot of experience about the process, but they're sort of not digital and tech savvy. So how do you ensure that both of them remain engaged?

 **Xx** 22:56  
Yeah.

 **CHAUDHURI, ATANU** 23:13  
And motivated.

 **Xx** 23:15  
Yeah, **we do actually do quite a bit of what we call reverse mentoring to use the sort of graduates to basically, you know, skill up the more senior managers** which are is is a really interesting idea and actually helps if you're a young graduate to actually get you some exposure across the organisation.

**Xx** 23:31  
We did do quite a big piece about this, so we did, do you know actually during lockdown?

**Xx** 23:39  
And just beyond.  
Where we spent a long time actually with a with a, with one, because until I won't say which one.  
With one of the consultancies you're looking at, you know this area. What? What are the digital skills we have? What do we want we need?  
What do we want to in source? Outsource by build, you know, buy versus build, build, that sort of stuff.  
You know, and what you know, because ultimately it's like any of these things, you know, commodity skills, you know.  
You can to a great real estate extent outsource, you know. So yeah, it's a data engineering as an example. You know you can be a doesn't you need to be really understand the process in depth to be a strong data engineer and actually be able to produce a data pipeline yeah with end to end encryption and checking and validation and you know you know full of delta and all that sort of stuff and you know error and rollback all that sort of thing and.  
Following.  
So we've we've looked at that and we're also looking to try and move a lot of these sort of skills.  
Away, because again, also it depends where you place your skill base. You know at the end of the day UK, where I'm sat, you said you're sat is an expensive place to be us is more expensive but you know we're not cheap and we can get similar similar and probably better quality skills. You know we're openly shared service centre in Lithuania right now for instance.

**Xx** 25:11  
But more aimed at back office processes.  
Yes, we're outsourcing finance, HR, procurement, those sorts of things, bit of it. But ultimately we'll use those sort of base. We've got a base in KL, Ku ulipa as well and we'll use a sort of lower cost environments to do a lot of sort of more sort of mundane sort of turnkey type.

**Xx** 25:33  
Development skills and then here in the UK.  
We'll, we'll have you know, people like you know, biz analysts who can talk to business and understand what we need to do.  
Ux designers.  
Some you know some app devs you know, perhaps and this sort of stuff. Developers.

**Xx** 25:53  
But yeah, we're we're looking to sort of, you know, find a balance of where we put those skills and how we put those skills together.

 **CHAUDHURI, ATANU** 25:59  
Sure, the the 4th question is related and so have you taken efforts to upgrade the digital skills of your existing employees and do you face any challenges with that?

 **Xx** 26:15  
Sorry.  
Yes and no. I mean we, we have for instance, you know we've put, we've put a training platform in an online training platform. We've been developing. You know what we call pathways, training pathways. So you know take the data engineering example, if you want to be a data engineer visible recommended courses, we think you should look at.  
And these ones we we because you know the trouble is online training platforms, there's thousands and thousands of these courses. You can look at.  
Some are good, some are, some are not so. So we're trying to build these sort of training pathways to say to people, right, you know, these are ones we as Jay may recommend you take a lot of. This is self-guided. A lot of this is sort of self learning.

**Xx** 27:05  
Well, we get quite good, good adoption from that as as a mechanism having that single point of delivery, if you like for training content.  
And skills based training more than anything else, so that's been quite useful actually.

 **CHAUDHURI, ATANU** 27:20  
OK, good.  
Anything on the recruitment side? So do you, do you face challenges in in recruiting, you said obviously given that you are in UK, you're also setting up?  
Different shared service organisations, depending on where you can recruit talent and the kind of work you want to do within your care outside. But let's say within UK and you want this kind of digital skills, digital engineering or business analyst or so on, how are you able to recruit?

 **Xx** 27:36  
Yeah.

 **CHAUDHURI, ATANU** 27:50  
Do you do you get the right set of skills that you need or you you face challenges with this? Or do you really need to get connected with the university?

 **Xx** 27:55  
Yeah. Would like, like any organisation we've like any organisation we face challenges, you know, at the end of the day, you know, we're over 200 year old ultimately engineering company for want of a bad description. You know based just South of Cambridge. So you know you're a graduate you can come work for over 200 year old engineering company who's saying oh come work as a digital or you can got 15 miles up road to Cambridge and go work for Google or Amazon or Microsoft you know so.

**Xx** 28:23  
Yes, we do face challenges recruiting.  
Yeah, and also.

 **CHAUDHURI, ATANU** 28:29  
And what do what do you do to sort of overcome some of these challenges? Sort of perception, as you rightly mentioned, 200 year old engineering company, how do you attract the younger digital workforce?

 **Xx** 28:42  
Well, actually we tend to on the graduate side, it's quite interesting. I've done quite a lot of work on this myself.

**Xx** 28:48  
Because our graduates tend to come in with chemistry, chemical engineering, chemical manufacturing degrees, or, you know, Ms Es or doctorate.

**Xx** 28:59  
And they come into a into.  
You know, a two year graduate programme and they do various rotations, typically rounds the science, manufacturing or commercial work streams. They're coming on that route. I've I've done a lot of work myself to basically kind of tap into that graduate pool.  
And so we've got, we have 16 old graduates chos half every year, and then there's a whole bunch of, you know, rotational roles get posted up typically.  
75 so you've kind of got a one in five chance of actually getting a direct graduate in the first place.  
But I I about three or four years ago, you know, we our graduate programme was running five 5 1/2 years ago years now.  
Start to tap into it and and put up some roles more from a digital and data perspective and what I've started, what I what I was, you know, more successful I imagined. So the rotations I started.  
Within two years became the most popular rotations on the whole rotation programme, so I had, you know, I was supposed to. You know, you've got a one in five chance of getting graduate come through his programme over three years. I had 10 graduates, you know. So I did pretty well out of it and what I was doing was teaching his kids. I see these words kids because my kid, my mind about sort of age. He's teaching young adults he's graduates. I should say. I know I know you're from university so.

**Xx** 30:22  
Yeah, I was teaching day skills and these digital skills and what it's done is actually got what it's been very good at. It's starting to create a baseline of skill based in the organisation. So I've been saying to these guys, but come and work with me for eight months. I'll train you in how to, you know, work on data engineering, you know, digital analytics, BI, visual data visualisation. All these skills you're going to need in your job because my my biggest bugbear.

**Xx** 30:51  
And I'm not a chemist, but it seems like that chemists and chemical engineers, you know, their currency ultimately is data, you know. And yet the one thing I don't seem to spend any time on at university is thinking about how to handle work with, manipulate and understand and interpret data. And I don't understand. It's like, surely the chemistry graduates, chemistry professionals from going to these graduates. Look, we know you want to know the potentials of burea.  
Know how to interpret the data once you've got it. So let's put some courses in place to help you do that.

**Xx** 31:30  
It doesn't seem to have landed, but I don't understand it. It's it's really interesting, says Imperial College. Obviously, you know one of your one of your compatriots, they've just a year ago launched a digital chemistry MSC.

**Xx** 31:45  
I was like, Hallelujah. If somebody's finally listened, you know, and we need more of that in our industry. So. So that's what I've personally done is I've basically been steaming graduates, putting on rotation, given the skills and then sending back out to the workplace. And actually the, you know, you know, point of pride.

**Xx** 32:02  
The graduates who come from me and and now back in the workplace, you know, 2-3 years down the line, they're absolutely thriving, you know, because they've got, they've got that edge above their competitive graduates because they've done that work. We've got that baseline understanding. So that's been really successful actually.

 **CHAUDHURI, ATANU** 32:12  
Yeah.  
Brilliant. Yeah, that that's that's very interesting and good to know. I'm gonna. I will possibly also pass on this day. I don't know whether you know our chemistry programme. We offer such thing. But in Durham we have a separate business analytics. There is a separate master in data science programme for scientists and for the science graduates and engineers. But I don't think we offer something like this within the chemistry. But I will check let you know.

 **Xx** 32:43  
No.

 **CHAUDHURI, ATANU** 32:49  
The other question which is sort of related to the last three, are across the broader supply chain. It's not just JM, But you work with multiple organisations, small and large, some of some of your suppliers, some of some customers and unless all of them have certain level of digital maturity, many of these things will not work right. So do you think that there is a potential that either you can get involved in, in training some of your business partners?  
Or workings together with them to develop as you're doing within the company, is that a merit in doing this or at a more social level? How do you attract the younger people to work with you and maybe you you organise some, some training or not just on chemistry, but on the data to attract more younger people because many people, at least in the North East, I'm not sure what happens in Cambridge. Is everybody aware of JM? But even in North East, many of the large companies even complain that.  
Not of the younger kids do not know what we are, what we do and the exciting job opportunities for them. So we possibly need to have some kind of an outreach to the local community go and visit not just the universities, but maybe even the FEC colleges. There are now this T level programmes and etcetera, whatever multiple things and even getting apprentices and so on. So have you thought of doing this kind of approach?

 **Xx** 34:07  
Yeah.  
I I I've I've said, actually funny enough, I've set up an apprentice programme here in, in, in it already. You'd be pleased to know I'm a big fan of apprentices. I think they're they're. They're brilliant and we've got apprentices across the business and we've got we do quite a lot with apprentices already.

 **CHAUDHURI, ATANU** 34:16  
Hmm.

 **Xx** 34:27  
This is less of my area of accountability, I've, said Itani. But I know we do quite a lot of outreach. I know we do a lot of STEM programmes and you know, school visits and outreach programmes into local schools and trying to hit kids when we are kids.

**Xx** 34:43  
You know 101112 and trying to inspire me to stand, particularly females.

**Xx** 34:50  
Yeah.  
The same subjects, but that's not my not my area. That's all. That's our graduate team.

 **CHAUDHURI, ATANU** 34:54  
No, no, no, that's fine.  
That's one that's one we can we can talk about that. But regarding the digital technology service providers, do you do you see?  
American in getting connected? Are you aware of all the kinds of service providers who can essentially provide digital service to you or?

 **Xx** 35:13  
Well, we've.

 **CHAUDHURI, ATANU** 35:14  
Or do you think there is a potential to to get connected?

 **Xx** 35:21  
I I would say honestly no.  
And I'll be honest about that. The reason I say that is because you know, if anything, we're trying to reduce the number of.  
People we work with right now rather than increase it, you know, we've got, I don't know, 10,000 odd suppliers, not supplier database right now already. It's way too many for a size of organisation.

**Xx** 35:44  
We've got we're we're heavily hooked into Microsoft.

**Xx** 35:48  
So I talked about Microsoft.  
Certainly daily, if not weekly, if not daily, but that's going on.

 **CHAUDHURI, ATANU** 35:54  
Right.

 **Xx** 35:57  
So yeah, no, I think I'm afraid I'd have to say now.

 **CHAUDHURI, ATANU** 36:00  
No, no, that's fine. That's perfectly fine. So this is this is very helpful. So we are talking to different kinds of organisation. Many of them are smaller, a few large like yours. So your perspective is also important. So everything so the original idea was to connect all of these different stakeholders who as many companies say we don't know where to go, where to start, digitalisation, who are the service providers, where which are the universities or which colleges we go for talent. And that's, that's where the idea came in. But if some of the larger companies, obviously you are doing things on your own and.  
Then you might not exactly need the kind of thing which we are talking about, but you can potentially help others. Maybe your journey can actually motivate and help some of the other smaller companies, and maybe in your extended supply chain to actually follow the path that you are taking.

 **Xx** 36:35  
Yeah, no.

 **CHAUDHURI, ATANU** 36:48  
This is very helpful, but as we are talking I I realised there is something else I have in mind for you. So we have in our MBA programme a technology pathway and I leave that pathway where we have of course on business analytics and they have a course on on forecasting and then so on.

 **Xx** 36:59  
Mm hmm.

 **CHAUDHURI, ATANU** 37:06  
And on May 30th.  
Outside this course I'm organising kind of a half a day event where we are pulling in speakers if that day either May 30th or 31st works for you, will you be happy to come and?

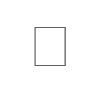
 **Xx** 37:13  
OK.

 **CHAUDHURI, ATANU** 37:21  
Talk to whatever you just talked about. Maybe give a few examples of digital efforts and analytics programmes. What you do more from MBA perspective, how MBS students, these are all MBA students with 1015 years of experience working in different industries. I think this story will be quite fascinating for them and then we can have a more open discussion or a panel discussion with all that panellists and so on. So will you be happy to come to the?

 **Xx** 37:34  
Yeah.  
Oh well, I won't. I won't say yes or no. Stay off the top of my head, aren't you? But feel free to send me some details across and I'll. I'll certainly have a look at it for you.

 **CHAUDHURI, ATANU** 37:52  
Sure. OK. Thank you so much. Appreciate your time. Bye. Thank you. Bye.

 **Xx** 37:54  
Alright, no problem. Thanks a lot.

 **CHAUDHURI, ATANU** stopped transcription