

[Done] The Future of SC, Episode XX: From Barcode to Backbone: The Future of Digital Traceability

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Richard: I am Richard Howells, and this is The Future of Supply Chain, a podcast where we discuss hot topics, best practices, and the latest innovations in today's global business. And I'm joined by my co-host Oyku.

Oyku: Hello everyone. I'm Oyku Ilgar a marketer, blogger podcaster, in the supply chain and ERP area at SAP. In today's episode, we are dive into the world of traceability, what it really means, what is it important, how it can help businesses and more. To do so, we are joined by SAP's Aladdin Mandishah. Hello Aladdin. Glad to have you here today with us.

Let's start with a quick introduction from you.

Aladdin: Richard and Oyku, thank you very much for hosting me today. I'm the Global [00:01:00] Director of Industry Advisory in SAP. I bring almost 15 years of experience in strategy and transformation across diverse industries. And in my current role in SAP focus on advising executives on how to leverage SAP solutions and SAP Business Suite to drive innovation efficiency and compliance.

Oyku: Great Aladdin, what is digital traceability in supply chains and why is it becoming essential for modern businesses?

Aladdin: This is a very good starting question. And from my point of view, digital traceability means getting the complete and real-time picture of every product from its original raw material to the final customer. So it's a kind of, digital finger footprint for each product you have into the supply chain.

And initially over the years, companies [00:02:00] focused on product traceability only, like tracing ingredients or tracing components. And then slowly started to evolve into tracing logistical operations like shipping to ensure, of course delivery quality and manage maybe product recalls. However

in recent years. We saw that sustainability became a critical factor and many regulations started to evolve and requiring companies to also meet sustainability goals, right? So we start to see now that businesses are in just tracking products and logistics, but also they are increasingly tracking social and governance and information including product CO2, footprint and ethical sourcing and labor practices. So to come to your, to the, to answer your question related why it's became very important, I think it, it is, we see that from SAP that is becoming very important for two reasons. Number one, meeting [00:03:00] regulatory requirement and also adding a competitive advantage to these companies. And essentially digital traceability is a huge win for risk management and compliance. So it allow its core, a rapid response to any potential product recalls, protect the brand image, but also. It supports the building of customer trust as well as you know that customers today, they increasingly demand more transparency on origins and environmental impact of the products they are consuming. So in summary here, I would say that digital traceability is in just like something nice to have. It became mandatory in many industries to survive and thrive in our competitive world.

Richard: That's really interesting because the way you describe it, traceability means different things to different people depending on the industry they're in, the role in their business and et cetera. So there are different types of traceability and to support different types of traceability, [00:04:00] often needs different technologies that would be needed in certain situations. So what technologies are the most commonly used when we talk about traceability and how are things like barcoding and RFID blockchain and IOT used in conjunction with each other to solve different problems?

Aladdin: Let's look to that from this perspective. So digital traceability, it's the overarching name for tracing products and information. And of course, in order to do that right, you need the right technology to enable you capturing this information. So you can think about digital traceability like a **NC** investigation, right into the product life cycle.

And the technologies used to capture this information varies from barcodes or RFID tags and blockchain. But we see that each one of these technologies used to capture a certain or a specific, amount of data, right? So for example, barcodes are [00:05:00] very widely adopted into the industry because they are of course from cost are very effective, but also they serve as the fundamental identification markers of each product.

There, let's say twin products are like QR codes that most of us now know. So barcodes and QR codes are widely used to identify products. We see also the

RFID tag. Those are also barcodes, but they doesn't require actually the barcode scanner. So they have the technology, the built in technology to be automatically a read without using a barcode scanner into the supply chain, which makes the flow of products more faster and more efficient, and also reducing costs.

Now, also IOT sensors. They are there to capture critical environmental data. Like we see some kind of products like cold chain products that require cold chain monitoring. They use this IOT sensor as well as [00:06:00] also monitoring the CO2 footprint. Also this kind of sensors are used. At the end, of course, those are the, let's say, the technologies used. But all this raw information, right? It need to be funneled into a central software application. That is considered the brain of the whole operation, that manage this data, storing it, and even analyzing it to create a comprehensive and searchable history of the product.

Richard: Supply chains have grown in visibility and importance over the last few years. Certainly since the pandemic, the supply chain has been front and center and which increases the need for trust in a company's supply chain and trust has become the new currency in supply chain. We hear from many people whether it's to reduce risk, to ensure sustainability, to improve visibility, to enable collaboration across the business network. So how can traceability help [00:07:00] with trust?

Aladdin: I also see that I see it from this perspective as well, that traceability i s the new currency in supply chain and also for consumer. So, trust is something that is extremely important today in how products move through the wallet, right? And to build this trust, you need to provide your consumers with the visibility across the entire product life cycle.

Right, which will help them to prove that it's real and also reduce any problems like fake products. So it providing the consumer with this traceability information it provide them with a clear proof that products are made in good and fair and eco-friendly ways, which also include the ESG goals.

And from customer point of view, this means they can truly rely on what a brand says, right? That this is organic product, or this is meeting [00:08:00] the CO2 worldwide goals and objective. So you have to provide this to the consumer, right? You have to provide this transparency. And this is what digital traceability enabled. So this honesty and clear information builds this strong trust and help consumers make a confident choices about their purchases.

Oyku: We have talked about many gains so far, but what about the challenges in implementing digital traceability and also is it feasible for a company to decide to adopt it suddenly and implement it immediately?

Aladdin: We see also that companies typically adopt digital traceability, as I previously mentioned, either to meet a strict compliance regulations or to gain a significant competitive advantage. However despite this benefits, it's actual implementation presents a notable set of challenges.

So it's not that very easy, right, to jump into implementing an end-to-end digital traceability [00:09:00] across your company and the whole enterprise, including your partner ecosystem. So, and the reasons for that number one, it involve initial capital investment into this new technology, the hardware, the software, the whole infrastructure, the training of the employees and after that, beyond this cost you have to be able to manage the huge amount of data and the complexity of this data that is gathered by this digital traceability solution, which require actually a high quality and standardized system approach across the whole organization. And a second thing is ensuring that you get the right information from your suppliers and partners and in the ecosystem.

So this is not easily is not an easy topic in supply chain to convince your suppliers and everyone involved in the supply chain to share information and get this buy-in. So given this set of [00:10:00] technical, operational, and maybe also collaborative demands a quick unplanned implementation is not like something visible. So it really requires strategic planning a phased approach, implementation and to be able to meet your digital traceability goals.

Richard: So Aladdin, it's clear that with the right investment and implementation approach, digital traceability can support lots of things. Effective decision making. It can improve costs and efficiency. It can ensure regulatory compliance. So maybe you could share some real-life examples that illustrate its impact in real world scenarios.

Aladdin: Absolutely Richard. So as you said, digital traceability, support effective decision making and ensures also RUPA regulatory compliance. One of the most would say common examples that I have in mind now is coming from the pharmaceutical and life science industry. Our [00:11:00] traceability software like SAP advanced Track and Trace for Pharma and SAP Information Collaboration Hub.

They are widely adopted in the pharmaceutical industries to help them meet the tight regulations around drug counterfeit and prevent drug, counterfeit. So these

solutions provide the real time and the granularity needed and required by regulations to allow precise control and target actions throughout the supply chain. So the digital traceability solutions I mentioned here, they actually deliver all the benefits and also safeguarding patient lives to preserve the integrity of the pharmaceutical supply chain.

Oyku: And what about sustainability? Catalyst technology, help users to reach their ESG goals, for example.

Aladdin: As I mentioned earlier sustainability became a hot topic right into the industry and the whole companies over the last years and in order to meet these [00:12:00] sustainability goals, right? It's often said, what you can't measure, you can't control. So this is the principle that is fundamental to achieve sustainability goals.

So the first step is truly meet your ESG goals is to accurately measure your current impact and practices. In order to do that, you absolutely need a digital traceability or a solution to effectively capture this necessary data. So, beyond this foundational measurement, the digital traceability is a powerful enabler for companies aiming to achieve their broader sustainability objectives. For example, can provide the verifiable data needed for every sustainability claim. Environmentally, for example, it allows also a precise tracking of product CO2 footprint and can support waste reduction and circular economy efforts. So in essence digital traceability transforms abstract ESG commitment into concrete measurable [00:13:00] and also verifiable actions allowing companies to truly prove their sustainability commitment.

Richard: It's clear also that when we talk traceability, we're talking a lot of data from different sources, from different areas of the supply chain, from your suppliers, from your contract manufacturers, and from within your organization. And when we talk data, the next topic is usually on this podcast, AI and how to leverage that data.

So how do you see AI, Gen AI, agentic AI shape the future of supply chain traceability, both today and moving forward?

Aladdin: AI and agentic AI are technologies that exist into the software industry. And they are evolving very fast, and AI will only be very good if you have, or you feed the AI with the right and let's say high [00:14:00] quality data. And as you said there is a. A huge amount of data captured by all these technologies that are used to trace a certain piece of the supply chain or a certain product, or a certain aspect of the supply chain as we already illustrated. Either

could be a cold chain or could be material traceability. Could be also ESG traceability. I strongly believe that the future of digital traceability will be shaped by Agentic AI It'll be moved beyond just tracking something, right? And capturing the information and toward making egen ai transforming this digital traceability into something proactive. I can think about it like in a real world scenario, like we have an Agentic traceability AI that constantly monitor internal product data maybe global news, social media, while simultaneously scanning online e-commerce sites, for example, for fake products. [00:15:00] And if it detects even the smallest hint of an issue or a potential that there is a product defect or suspicious counterfeit listing, it acts autonomously and triggers a product recall, starting from drafting immediate communications, maybe to the involved partners in the supply chain. Proactively informs consumers about counterfeits while initiating take down requests, for example, from this online platform.

So, as you can imagine that this transformative capability dramatically cuts the response times and directly. Protect both brand integrity and consumer safety.

Oyku: Thank you Aladdin, you have already touched earlier, but I'm going to ask you in case you want to add, make any additional comments, but how can SAP help.

Aladdin: SAP actually offers a [00:16:00] comprehensive portfolio for digital traceability solutions that enable companies to track products and information from raw materials to shipment and even for sustainability. This includes, of course, multiple products. For example, SAP Material Traceability, that focusing on raw material, origin and usage.

Then SAP Global Batch Traceability, which is crucial for quality control and precise product recalls. We have also SAP Corporates Realization or SAP Advanced Track and Trace for pharmaceutical, which are there and help companies to uniquely I uniquely identify products using serial number for anti counterfeit efforts, especially also as I said in pharma.

And we have for example, also SAP Global Track and Trace for real time shipment visibility and tracking. And finally we have SAP Sustainability Control Tower, which aggregates vital ESG data, including the CO2 footprints. So together these solutions empower [00:17:00] businesses, of course, to achieve compliance, enhance their efficiency, and ensure verifiable sustainability across their entire supply chain.

Richard: It's clear that we're only just touching. On the discussion, discuss around traceability and there's so many more other areas that we could delve into. So I'm sure we'll be inviting you back to talk in more detail about some of those areas. But we are coming to the end of the podcast and I know you listen to the podcast Aladdin. So, you know what the last question is going to be, but in a sentence or two, from your perspective, what is the future of supply chain?

Aladdin: I strongly think that the future of supply chain will be orchestrated by Agentic AI. So, Agentic AI will help supply chain to achieve unparalleled resilience, transparency, and sustainability.

Richard: And traceability, I would [00:18:00] imagine,

Aladdin: And traceability, of course. Yeah.

Richard: Aladdin, thanks for a great conversation that was really interesting, and as I said, I'm sure you'll be invited back to, to delve into more detail on one or more of these topics. And anyone listening, if you're specifically interested in learning more about any of the areas that Aladdin has talked about, please let us know and we can schedule another podcast. But thanks again.

Aladdin: Thank you very much, Richard and all you for hosting me today. Thank you.

Richard: And thanks everyone for listening. Please mark us as a favorite, you can get regular update and information about future episodes, but until next time, from Aladdin and Oyku and I, thanks for discussing the future of supply chain.