

# How AI, IoT and Blockchain Will Shake Up Procurement and Supply Chains

*Transcript of a discussion on how artificial intelligence, the Internet of things and machine learning will shake up procurement and supply chain optimization.*

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[Gardner](#)

**Dana Gardner:** Hello, and welcome to a special BriefingsDirect podcast, coming to you from the 2017 SAP Ariba LIVE conference in Las Vegas. I'm [Dana Gardner](#), Principal Analyst at [Interarbor Solutions](#), your host the week of March 20 as we explore the latest in collaborative commerce and learn how innovative companies are leveraging the networked economy.

Our next digital business thought leadership panel discussion focuses on how artificial intelligence (AI), the Internet of things (IoT) machine learning (ML) and [blockchain](#) will shake up procurement and supply chain optimization. Stay with us now as we develop a new vision for how today's cutting-edge technologies will usher in tomorrow's most powerful business tools and processes.

To learn more about the data-driven, predictive analytics, and augmented intelligence approach to supply chain management and procurement, please join me in welcoming our guests, [Dinesh Shahane](#), Chief Technology Officer at [SAP Ariba](#). Welcome, Dinesh.



[Shahane](#)

**Dinesh Shahane:** Thank you, Dana.

**Gardner:** We are also here with [Sudhir Bhojwani](#), Senior Vice President of the Product Suite at SAP Ariba. Welcome, Sudhir.

**Sudhir Bhojwani:** Thanks, Dana. It's nice talking to you.

**Gardner:** And we are here also with [Sanjay Almeida](#), Senior Vice President and Chief Product Officer of Network Solutions at SAP Ariba. Welcome, Sanjay.

**Sanjay Almeida:** Thank you, Dana. I'm very excited about being here.

**Gardner:** Dinesh, it seems like only yesterday we were confident to have a single view of a customer, or clean data, maybe a single business process end-to-end value. But

now, we are poised to leapfrog the status quo by using words like predictive and proactive for many business functions.

Why are AI and ML such disrupters to how we've been doing business processes?

**Shahane:** If you look back, some of the technological impact in our private lives, is impacting our public life. Think about the amount of data and signals that we are gathering; we call it big data.

We not only do transactions in our personal life, we also have a lot of content that gets pushed at us. Our phone records, our location as we move, so we are wired and we are hyperconnected.

Similar things are happening to businesses. Since we are so connected, a lot of data is created. Having all that big data – and it could be a problem from the privacy perspective -- gives you an opportunity to harness that data, to optimize it and make your processes much more efficient, much more engaged.

If you think about dealing with big data, you try and find patterns in that data, instead of looking at just the raw data. Finding those patterns collectively as a discipline is called machine learning (ML). There are various techniques, and you can find a regression pattern, or you can find a recommendation pattern -- you can find all kinds of patterns that will optimize things, and make your experience a lot more engaging.

If you combine all these machine learning techniques with tools such as natural language processing (NLP), higher-level tools such as inference engines, and text-to-speech processing -- you get things like [Siri](#) and [Alexa](#). It was created for the consumer space, but the same thing could be available for your businesses, and you can train that for your business processes. Overall, these improve efficiency, give delight, and provide a very engaging user experience.

**Gardner:** Sanjay, from the network perspective it seems like we are able to take advantage of really advanced cloud services, put that into a user experience that could be conversational, like we do with our personal consumer devices.

What is it about the cloud services in the network, however, that are game-changers when it comes to applying AI and ML to just good old business processes?

## ***Multiple intelligence recommended***



**Almeida:** Building on Dinesh's comment, we have a lot of intelligent devices in our homes. When we watch Netflix, there are a lot of recommendations that happen. We control devices through voice. When we get home the lights are on. There is a lot of intelligence built into our personal lives.

And when we go to work, especially in an enterprise, the experience is far different. How do we make sure that your experience at home carries forward to when you are at work?

From the enterprise and business networks perspective, we have a lot of data; a lot of business data about the purchases, the behaviors, the commodities. We can use that data to make the business processes a lot more efficient, using some of the models that Dinesh talked about.

How do we actually do a recommendation so that we move away from traditional search, and take action on rows and columns, and drive that through a voice interface? How do we bring that intelligence together, and recommend the next actions or the next business process? How do we use the data that we have and make it a more recommended-based interaction versus the traditional forms-based interaction?

**Gardner:** Sudhir, when we go out to the marketplace with these technologies, and people begin to use them for making better decisions, what will that bring to procurement and supply chain activities? Are we really talking about letting the machines make the decisions? Where does the best of what machines do and the best of what people do meet?



**Bhojwani:** Quite often I get this question, What will be the role of procurement in 2025? Are the machines going to be able to make all the decisions and we will have no role to play? You can say the same thing about all aspects of life, so why only procurement?

I think human intelligence is still here to stay.

[Bhojwani](#)

I believe, personally, it can be augmented. Let's take a concrete example to see what it means. At SAP Ariba, we are working on a product called Product Sourcing. Essentially this product takes a bill of material (BOM), and it tells you the impact. So what is so cool about it?

One of our customers has a BOM, which is an eight-level deep tree with 10 million nodes in it. In this 10 million-node commodity tree, or BOM, a person is responsible for managing all the items. But how does he or she know what is the impact of a delay on the entire tree? How do you visualize that?

I think humans are very poor at visualizing a 10-million node tree; machines are really good at it. Well, where the human is still going to be required is that eventually you have to make a decision. Are we comfortable that the machine alone makes a decision? Only time will tell. I continue to think that this kind of augmented intelligence is what we are looking for, not some machine making complete decisions on our behalf.

**Gardner:** Dinesh, in order to make this more than what we get in our personal consumer space, which in some cases is nice to have, it doesn't really change the game. But we are looking for a higher productivity in business. The [C-Suite](#) is looking for increased margins; they are looking for big efficiencies. What is it from a business point of view that these technologies can bring? Is this going to be just a lipstick on a pig, so to speak, or do we really get to change how business productivity comes about?

## ***Humans and machines working together***

**Shahane:** I truly believe it will change the productivity. The whole intelligence advantage -- if you look at it from a highest perspective like enhanced user experience -- provides an ability to help you make your decisions.

When you make decisions having this augmented assistant helping you along the way -- and at the same time dealing with large amount of data combined in a business benefit -- I think it will make a huge impact.

Let me give you an example. Think about supplier risk. Today, at first you look at risk as the people on the network, and how you are directly doing business with them. You want to know everything about them, their profile, and you care about them being a good business partner to you.

But think about the second, third and fourth years, and some things become not so interesting for your business. All that information for those next years is not directly available on the network; that is distant. But if those signals can be captured and somehow surface in your decision-making, it can really reduce risk.

Reducing risk means more productivity, more benefits to your businesses. So that is one advantage I could see, but there will be a number of advantages. I think we'll run out of time if we start talking about all of those.

**Gardner:** Sanjay, help us better understand. When we take these technologies and apply them to procurement, what does that mean for the procurement people themselves?

**Almeida:** There are two inputs that you need to make strategic decisions, and one is the data. You look at that data and you try to make sense out of it. As Sudhir mentioned, there is a limit to human beings in terms of how much data processing that they can do -- and that's where some of these technologies will help quite a bit to make better decisions.

The other part is personal biases, and eliminating personal biases by using the data. It will improve the accuracy of your strategic decisions. A combination of those two will help make better decisions, faster decisions, and procurement groups can focus on the right stuff, versus being busy with the day-to-day tasks.

Using these technologies, the data, and the power of the data from computational excellence -- that's taking the personal biases out of making decisions. That combination will really help them make better strategic decisions.

**Bhojwani:** Let me add something to what Sanjay said. One of the biggest things we're seeing now in procurement, especially in enterprise software in general, is people's expectations have clearly gone up based on their personal experience outside. I mean, 10 years back I could not have imagined that I would never go to a store to buy shoes. I thought, who buys shoes online? Now, I never go to stores. I don't know when was the last time I bought shoes anywhere but online? It's been few years, in fact. Now, think about that expectation on procurement software.

Currently procurement has been looked upon as a gatekeeper; they ensure that nobody does anything wrong. The problem with that approach is it is a "stick" model, there is no "carrot" behind it. What users want is, "Hey, show me the benefit and I will follow the rules." We can't punish the entire company because of a couple of bad apples.

By and large, most people want to follow the rules. They just don't know what the rules are; they don't have a platform that makes that decision-making easy, that enables them to get the job done sooner, faster, better. And that happens when the user experience is acceptable and where procurement is no longer looked down upon as a gatekeeper. That is the fundamental shift that has to happen, procurement has to start thinking about themselves as an enabler, not a gatekeeper. That's the fundamental shift.

**Gardner:** Here at SAP Ariba LIVE 2017, we're hearing about new products and services. Are there any of the new products and services that we could point to that say, aha, this is a harbinger of things to come?

## ***In blockchain we trust***

**Shahane:** The conversational interfaces and bots, they are a fairly easy technology for anyone to adopt nowadays, especially because some of these algorithms are available so easily. But -- from my perspective -- I think one of the technologies that will have a huge impact on our life will be advent of IoT devices, 3D printing, and blockchain.

To me, blockchain is the most exciting one. That will have huge impact on the way people look at the business network. Some people think about blockchain as a complementary idea to the network. Other people think that it is contradictory to the network. We believe it is complementary to the network.

Blockchain reaches out to the boundary of your network, to faraway places that we are not even connected to, and brings that into a governance model where all of your processes and all your transactions are captured in the central network.

I believe that a trusted transactional model combined with other innovations like IoT, where a machine could order by itself ... My favorite example is when a washing machine starts working when the energy is cheaper ... it's a pretty exciting use-case.

This is a combination of open platforms and IoT combining with blockchain-based energy-rate brokering. These are the kind of use cases that will become possible in the future. I see a platform sitting in the center of all these innovations.

**Gardner:** Sanjay, let's look at blockchain from your perspective. How do you see that ability of a distributed network authority fitting into business processes? Maybe people hadn't quite put those two together.

**Almeida:** The core concept of blockchain is distributed trust and transparency. When we look at business networks, we obviously have the largest network in the world. We have more than 2.5 million buyers and suppliers transacting on the SAP Ariba network -- but there are hundreds of millions of others who are not on the network. Obviously we would like to get them.

If you use the blockchain technology to bring that trust together, it's a federated trust model. Then our supply chain would be lot more efficient, a lot more trustworthy. It will improve the efficiency, and all the risk that's associated with managing suppliers will be managed better by using that technology.

**Gardner:** So this isn't a "maybe," or an "if." It's "definitely," blockchain will be a significant technology for advancing productivity in business processes and business platforms?

**Almeida:** Absolutely. And you have to have the scale of an SAP Ariba, have the scale from the number of suppliers, the amount of business that happens on the network. So you have to have a scale and technology together to make that happen. We want to be a center of a blockchain, we want to be a blockchain provider, and so that other third-party ecosystem partners can be part of this trusted network and make this process a lot more efficient.

**Gardner:** Sudhir, for those who are listening and reading this information and are interested in taking advantage of ML and better data, of what the IoT will bring, and AI where it makes sense -- what in your estimation should they be doing now in order to prepare themselves as an organization to best take advantage of these? What would you advise them to be doing now in order to better take advantage of these technologies and the services that folks like SAP Ariba can provide so that they can stand out in their industry?

**Bhojwani:** That's a very good question, and that's one of our central themes. At the core of it, I fundamentally believe the tool cannot solve the problem completely on its own, you have to change as well. If the companies continue to want to stick to the old processes -- but try to apply the new technology -- it doesn't solve the problem. We have seen that movie played before. People get our tool, they say, hey, we were sold

very good visions, so we bought the SAP Ariba tool. We tried to implement it and it didn't work for us.

When you question that, generally the answer is, we just tried to use the tool -- tried to change the tool to fit our model, to fit our process. We didn't try to change the processes. As for blockchain, enterprises are not used to being for [track and trace](#), they are not really exposing that kind of information in any shape or form -- or they are very secretive about it.

So for them to suddenly participate in this requires a change on their side. It requires seeing what is the benefit for me, what is the value that it offers me? Slowly but surely that value is starting to become very, very clear. You hear more companies -- especially on the payment side -- starting to participate in blockchain. A general ledger will be available on blockchain some day. This is one of the big ideas for SAP.

If you think about SAP, they run more general ledgers in the world than any other company. They are probably the biggest general ledger company that connects all of that. Those things are possible, but it's still a technology only until the companies want to say, "Hey, this is the value ... but I have to change myself as well."

This changing yourself part, even though it sounds so simple, is what we are seeing in the consumer world. There, change happens a little bit faster than in the enterprise world. But, even that is actually changing, because of the demands that the end-user, the [Millennials](#), when they come into the workforce; the force that they have and the expectations that they have. Enterprises, if they continue to resist, won't be sustainable.

They will be forced to change. So I personally believe in next three to five years when there are more-and-more Millennials in the workforce, you will see people adopting blockchain and new ledgers at a much faster pace.

**Shahane:** I think Sudhir put it very nicely. I think enterprises need to be open to change. You can achieve transformation if the value is clearly articulated. One of the big changes for procurement is you need to transition yourself from being a spend controller into a value creator. There is a lot of technology that will benefit you, and some of the technology vendors like us, we cannot just throw a major change at our users. We have to do it gradually. For example, with AI it will start as augmented first, before it starts making algorithmic decisions.

So it is a change on both sides, and once that happens -- and once we trust each other on the system -- nice things will happen.

**Almeida:** One thing I would add to that is organizations need to think about what they want to achieve in the future and adopt the tool and technology and business processes for their future business goals. It's not about living in the past because the past is going to be gone. So how do you differentiate yourself, your business with the rest of the competition that you have?

The past business processes and people and technology many not necessarily get you over there. So how do you leverage the technology that companies like SAP and Ariba provide? Think about what should be your future business processes. The people that you will have, as Sudhir mentioned, the Millennials, they have different expectations and they won't accept the status quo.

**Gardner:** I am afraid we will have to leave it there. We have been talking about how AI, IoT, ML, and blockchain are poised to shake up procurement and supply chain optimization.

And we've learned how today's cutting edge technologies will soon be ushering in tomorrow's most powerful business tools and processes.

So a big thank you to our guests, Dinesh Shahane, Chief Technology Officer at SAP Ariba; Sudhir Bhojwani, Senior Vice President of Product Suite at SAP Ariba, and Sanjay Almeida, Senior Vice President and Chief Product Officer of Network Solutions at SAP Ariba.

And a big thank you as well to our audience for joining this special podcast coming to you from the 2017 SAP Ariba LIVE conference in Las Vegas. I'm Dana Gardner, Principal Analyst at Interarbor Solutions, your host throughout this series of SAP Ariba-sponsored BriefingsDirect Digital Business Insights Discussions. Thanks again for listening, and do come back next time.

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