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Nick

Hello everyone, and welcome to the HCLTech Trends and Insights Weekly podcast where I'm delighted to be joined by Sukant Acharya, Head of IoT Works and Industry Next at HCLTech and today we're going to be discussing the next Industrial Revolution. We're in the fourth Industrial Revolution, and we're moving beyond that to what's being called the fifth Industrial Revolution.

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Nick

So, just to start with. Hello, welcome to the podcast. How are you doing today?

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Sukant Acharya

I'm doing great, Nick. Thanks for having me.

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Nick

No problem. And to get going with the discussion, are we heading towards the end of the fourth Industrial Revolution? And if so, what is coming out? What lies ahead?

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Sukant Acharya

Yeah, in a sense, yes. So, if you, you know, talk about the revolution, which is a step change in what the humanities have been doing over the last several centuries. If you consider industry 4.0 at this stage, teens are the source of competitive are mandates, then yes, we are coming to the end of that revolution which is marked by something which will be proliferating, but not necessarily creating additional competitive advantage from the industry.

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Sukant Acharya

But that doesn't mean that the capabilities of that industry for digital enables the competencies that it brings will be completely obsolete. I mean, classic example, if you see when Industry 2.0, which brought

the flow of manufacturing to being and actually created a step change in the innovation, how goods are produced and how goods are distributed and so on and so forth.

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Sukant Acharya

That still is relevant today. But if you call, if you say that, whether this is a competitive advantage anymore, the answer is no. So, in that sense, we are coming to the end of Industry four zero, the era that was marked by converged infrastructure and hyper connectivity and everything becoming smart IoT led capabilities. That is no more going to build this sustainable competitive advantage for the organization.

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Sukant Acharya

So, it is coming to an end. Now to your second question. So, what is next? What actually is the next wave that will hit us? I think the next era will be the era of resilience, the rise of resilience, as we call it. So, organizations becoming super adaptive and, you know, building competitive R&D. It's within the norms of, you know, becoming more expansive, the expansive play in the ecosystem and being future proof.

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Sukant Acharya

So, those are the three tenets that essentially will shape the resilient enterprise. And it's super adaptive. You know, hyper expansive and future proof. So that's what we call as industry next.

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Nick

Thank you. And also, is a part of it is this role of artificial intelligence and that collaboration with humans. So human and AI or humans and machines working side by side to enhance workplace processes on top of increased resilience and also an improved focus on things like sustainability as well.

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Sukant Acharya

That's correct. So, if you look at the fundamental evolution and the transformation that has happened in the world relies on two founding principles are two. Founding pillars. One is intelligence. Second is

energy. So as the life actually spreads, we are becoming, you know, the focus on life, making it more healthier, the life span becoming more and more.

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Sukant Acharya

But the fundamental thing that drives the transformation in the world and supports the life ecosystem is intelligence on energy. So, you wanted the right thing when you said the artificial intelligence actually coming into being and actually augmenting with the human intelligence and making it super powered? Absolutely, yes. So, in the intelligence dimension, you will see a lot of changes in this industry next coming in.

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Sukant Acharya

So, you know, advanced analytics and power by the intelligence, which we never thought about before. I mean, they just they are in jeopardy, which is not more than a massive language model has actually completely created a disruptive model in the in the society. Now, we are far from the general artificial intelligence, which is basically matching the human intelligence in all spheres of the work.

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Sukant Acharya

But in certain spheres, in the chosen lens, you have actually created a lot of impact and similarly we're talking about part of quantum computing and that could actually create a lot of disruption in the way the business operates today, the way the societal fabric is built today. So absolutely. So, those technologies, whether it's artificial intelligence, intelligence, quantum computing and human centric robot robotic implementations, which is primarily bringing robotics and human intelligence coming together and minting each other to create value.

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Sukant Acharya

So those on the intelligence side, I see that that there will be a lot of new technology and a lot of new things coming in. Similarly, on the energy side, you know, we are talking about a new source of energy and we are talking about massive, an enormous amount of energy being available in a sustainable way, whether it is a renewable source or maybe, you know, we talked about diffusion, the source, you know, hydrogen and fuzzing to helium and creating that energy source, which could be completely powering the world in a completely different way.

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Sukant Acharya

For the last 50 years, this just has been happening. We are not close to making it in a manageable way to create the energy. But yes, the days are not far and a lot of renewable sources, a lot of renewable models which will be coming up. So, when you talk about technology, I think these are the two basic pillars.

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Sukant Acharya

One is in place inside and one on the energy side, which would be actually fueling the next wave of transformation. And the world has seen it. I mean, if you look at if you even map from our industrial one industry, one revolution, doing this before it started with coal and steam body engine to electricity to, you know, to a little bit of nuclear and now we are talking about renewable.

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Sukant Acharya

So, the chance continuously happens, and I believe, you know, these two fundamental pillars will actually come together. These are not separate to each other, and they will be bound by one integrated technology, which is digital twin anywhere, anytime type of digital twin enablement in a metaverse world. So artificial intelligence, quantum computing, you know, renewable energy and energy transition, digital twin and metaverse, I think these are the six things which the next wave of transformation will see.

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Nick

Thank you, sir. And just before we go into detail and discuss those technologies and the convergence of physical and digital, this new industrial revolution industry, next industry, 5.8, whatever you want to call it, is going to fundamentally reshape the future of work, just like it's done in previous revolutions. But it's not something that's to be feared, correct? It will disrupt traditional, you know, jobs, but ultimately it will create new jobs.

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Nick

So, is there anything you want to speak on that before we move on?

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Sukant Acharya

Yes, absolutely. I think it will actually bring the disruption which the world has never seen before. And again, you know, yes, world has seen similar incidents in the past when electricity became something, you know, the invention of electricity. And fundamentally things changed. Similarly, when the Internet actually came into being fundamentally a lot of things changed. The business models and the interaction model changed.

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Sukant Acharya

You know, the societal fabric actually went for a big transformation. So similarly, this next wave that I see is going to create a disruption which the world has never seen before. So fundamentally, a lot of things will change. And the difference between the past interventions and the current intervention is that it is coming at a very high scale and high speed.

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Sukant Acharya

So, it means embracing that change, embracing that transformation to actually create value is going to be difficult if the organization is not ready because it is coming at a very high speed. So, yes, fundamentally, the nature of the work force has to change the operation, will change the business models routines. There'll be new products and services which we have not talked before.

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Sukant Acharya

The intelligence will create that. And you talked about physical and digital coming together. So today it is in somewhere other working together, but in a limited capability. So, we talk about digital to support the physical world, to support and rip our model or simulate or monitor the physical world. And that's how the digital is being used. But fundamentally, the next wave will see a dramatic change which will be flipping the coin completely where digital will determine what should be the physical world.

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Sukant Acharya

And then the classic example if you see right. So, the payment systems, we have seen a lot of changes in the payment systems, right? And probably everybody is very familiar with the card swiping and stuff and so on and so forth. And now with the contactless digital payment, the things have completely dramatically changed. And you don't need a reader, you know, probably in the physical world, the traditional swiping machine, and the chips and so on and so forth.

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Sukant Acharya

So, a lot of physical stuff actually got changed. And similarly, if you think about, let's say in an industrial environment, the supervisory function with the enablement of augmented reality, somebody wearing a HoloLens AR, that is not smart because they'll actually walk into the facility, the machine, you know, talks of the of the alert and anything that is going red, it automatically pops up on your on your glass screen.

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Sukant Acharya

So, you don't really need to go and pass the machine and you don't keen if you input parameter to see what is going on. So, it is pretty much contactless. You are just walking in the subfloor. So, so pretty much the physical interaction is going to change. So similarly, digital will drive how the physical world should look like.

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Sukant Acharya

And that's the part of intelligence, that's the part of the AI which will actually bring that perspective as to what should be the ideal way to do what things will change. So physical will be driven by digital. That's a completely different paradigm, you know, paradigm shift that we will see in the upcoming wave.

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Nick

Thank you, sir. It will be a swift and dramatic change. So how can organizations ensure they prepare effectively for this future?

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Sukant Acharya

I think that's a great question, right? So, everybody knows that the disruption is coming. Obviously not everybody's adequate speed. What skill? And often times it is not recognized that the changes are also accelerating. It's coming, I would say pretty much changing very fast. The classic point where we started investing for zero was granted in 2011 and probably around 2015, it became a little bit.

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Sukant Acharya

You can say that, you know, some companies, the early adopters jumping in and trying to harness the capabilities brought in by Industry four zero industrial revolution. But if you look at the history, you know, the first to second industrial revolution took almost 150 years. And right now, from 2011 to 2013, in just 12 years, we are seeing that in just before or zero is probably coming to the end of its life.

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Sukant Acharya

So, it means the transformation is actually accelerating. So, you know, the life cycle, lifetime lifespan is actually sinking. So, to deal with that situation, I think organizations first need to think about scale. When they think about digital, they need to think scale, when they need to think about digital and digital transformation in the new era, in the industrial next era, they need to think about speed and four pillars that they need to be cognizant about to create value.

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Sukant Acharya

Number one, data Intelligence. It is way beyond data science, data engineering, detailing all the concepts that we talk about data analytics. We say that, you know, this will focus on data intelligence. Not all the world in the world is really necessary to create the business, which is more agile, more resilient, super adaptive, and can create value in a sustainable way.

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Sukant Acharya

So, data intelligence is the core pillar. Similarly, the second one is compute smart. There's a lot of hype around cloud and now its computing is coming, coming in, being and we are talking about now in-memory computing and the ground rules is what whatever has to be computed, whatever has to be processed, the data has to be processed at the source as much as possible.

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Sukant Acharya

And we are talking about, you know, microchips, you know, converging with the human brain, with the power of neuralink and so on and so forth. So that is the type of convergence that is happening. And therefore, what has to be processed in memory, what has to be processed in here is what has to be processed in forests and what needs to go to cloud is a conscious strategy that organizations need to think about.

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Sukant Acharya

And today is the convergence embracing the convergence, the engineering disciplines, I.T disciplines and or disciplines are converging very, very fast, so the value is no more created at any particular discipline policy. The value is value will more and more be created at the convergence of these three pillars, which means to build a competitive advantage. Organizations and organizations need to embrace these three disciplines in a seamless way and integrated to create value.

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Sukant Acharya

The last but not the least is focusing on micro capability so many times and I think many analysts have pointed this out and many research people have pointed it out, led traditionally more than two third of digital investments do not create value. And there has to be a reason for this because by the time organizations actually create or adapt to that digital intervention, things in the world might have changed.

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Sukant Acharya

And that's where the business actually lags behind. So, the approach to creating monolithic competencies is that or should be it from an organization standpoint, and they should focus on creating micro capabilities, which is fungibility extendable, which can actually build on each other. And therefore, when the new intervention actually comes in, new innovation in the world comes in. It is easy and it is very in a seamless way.

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Sukant Acharya

The organizations can adapt to it and build a competition around it.

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Nick

That's great. Thank you. And I know we've talked about the impact of this change a little bit, but in terms of impacts, can you explain how this next era of transformation will reshape business in society? What relatable changes can you provide that the average person might understand?

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Sukant Acharya

Yeah, I think if you see this, the new wave of industrial revolution, which we call as industry next door, a few things will fundamentally change. It is no more about, or it is not going to be about how much innovation, the primary innovation that the organization can actually create within the four walls of its operation will be more determined by how rapidly and how seamlessly the organization can consume innovation that is happening in the world.

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Sukant Acharya

As the hyper convergence is happening, the disciplines between physical, digital and human being is actually getting pretty, I would say, pretty blurred. So, it is the interface is becoming very blurred and the convergence is happening so fast, so therefore consuming the innovation will be equal or more important than actually creating innovation within the four walls of the organization.

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Sukant Acharya

So that is a fundamental change that is going to happen. And when you talk about the cognitive supply chain, the example for the manufacturing industry will not be from the manufacturing industry. It will actually be from, say, a retail industry which has perfected the supply chain, which is actually leading the wave of new innovation in the supply chain in the world.

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Sukant Acharya

Similarly, when it comes to precision manufacturing, maybe, you know, medical devices world or maybe Semicolon World will actually feed it back to the industrial world. So, a lot of this convergence and permeability innovation, what we call as an organization, putting a permeable wall to embrace innovation and to continue innovation. The second fundamental change and the impact that is going to happen is there is no more going to be a concept of value chain.

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Sukant Acharya

We are very familiar with this concept, and we know, thanks to Professor Michael Porter, I think the concept of value chain still it is very, very relevant and that's how the value has been created in the industry for so many years. But gradually the elements of the value chain will converge, and it will be almost like it converts to value engine in an ecosystem.

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Sukant Acharya

So, you don't need the step-by-step process or the rapid enablement of production of the goods or delivery of services is going to Vietnam, and therefore it will not follow a step by step process. But many steps coming together and converging to create value and in that direction, the additive manufacturing or 3D printing, all those things are becoming the enablers.

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Sukant Acharya

Artificial intelligence is going to play a huge role in this and really shaping the future of the products and future of services. So, what we will be seeing is a fundamental impact in the traditional operations and at a macro level in the business environment and therefore in this society overall, you know, connecting with the business, I think that the impact will be more on, you know, changing the societal fabric where the expectation will skyrocket and the change is going to be another.

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Sukant Acharya

And that's why we suggest that there not be a transformation in steps that will be transformational in continuum. So, organizations will need to embrace the culture of transformation in Continuum to adapt those change, to consume the innovation in the world, and to create new value, new products, new services, and revising that entire offering as well as the ADAPT business operations.

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Nick

Yes, it's going to be very interesting to see, as you said, these new services, these new business models that are going to arise. So just finally, sir, what role will companies like HCLTech play in this radical changing of the tide?

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Sukant Acharya

Yeah, so it's CRL, as we focus on our business, is primarily to help our clients succeed and as we do that, we invest in our own t-shirts development and we look at the innovation happening in the world and we try to be at the cutting edge of where the innovation is coming and how that can be continued to create value for our clients.

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Sukant Acharya

So, we focus on the pillars that will enable our clients to, to create value. And we do by bringing in a number of products solutions and offering to the table under the industry next offering suite. And we have proprietary models, proprietary methodologies, what we call as strategy and model and innovation by design. That gives you start to organize Since embracing or trying to embrace the next wave of industrial revolution and building on the foundation of industry.

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Sukant Acharya

I just said that not everything is not going to be obsolete, but primarily becoming the foundation on which the next edge of next stage of competitive advantage will be built. And so when we talk about strategies to modern, it is basically bringing the strategy and execution together because one has seen that when you put a strategy and you create a business case, you create a value lever or set of value levers which would actually take you to realize that benefit that you promise, and then you do the aggregation.

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Sukant Acharya

And finally, you find that the value promised in the strategy phase is very, very different from the actual value realized. That is a huge gap and that's where the digital interventions fail. So, it sells unique

strategy. You should model actually brings this together. It actually presents between, you know, what the value is promised, and the value delivered through the execution.

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Sukant Acharya

That should be a seamless matching and being in the in the industry and being a leader in enduring operations, understanding the physical world and the idea and technology through our infrastructure and application services, we bring this together to actually bring it execution perspective to strategy and bringing strategy and model to life. Similarly, the innovation by design essentially enables the client ecosystem to reimagine the products and services of the business operations without incurring a lot of costly experiments.

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Sukant Acharya

So, it's a blend of design thinking with creating a minimal viable product audit, proof of value and demonstrating the value delivery of the value promise to a pilot run. So, all these things combined together, it is not a get it design thinking too. I did, but I did. And if boundary defined, you know, implementation to create that value, so that actually accelerates clients, you know, innovation adoption cycle and which I mentioned that you know acceleration is the key, speed is the key because you don't want to actually benchmark something.

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Sukant Acharya

By the time you lose that, you become obsolete. So, similarly, we have a number of solutions in the sustainability space, in the digital manufacturing and the cognitive supply chain and the idea of the convergence in the metaverse and immersive experience. So, we are running the Connector product on a product platform also in different disciplines, which actually balancing it in a comprehensive way covers the entire span of our client’s operation.

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Sukant Acharya

We bring those capabilities, those honed models that has worked in different planning scenarios, and we bring those assets as accelerators to kick start the client journey and walk them through the value delivery cycle to build competitive advantages and create a sustainable competitive world.

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Nick

Thank you very much and obviously emphasizing the importance of speed to market that is crucial and a partner is important in helping enterprises achieve that. Thank you so much for your fabulous insights today. We really appreciate it.

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Sukant Acharya

Thank you so much, Nick. This is a pleasure.

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Nick

Great. And thank you to the audience for tuning in. And we'll see you next time. Goodbye.

00:26:49:24 - 00:26:50:11

Sukant Acharya

Thank you.