

AI in manufacturing

Transcript

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JIM CAROLL:

Is AI a transformative opportunity or an existential threat? Look, it's probably both. You know, as a futurist for over 30 years, I've spent a lot of time with a lot of organizations, walking them through the big, disruptive transformative trends of our time and the innovation strategies they need to pursue to align to a reality in which the future belongs to those who are fast.

I've seen a lot of transformative shifts. My advice and guidance has cautioned organizations that they need to align themselves to a world in which the future belongs to those who are fast. And now, this new era of artificial intelligence is unlike anything I have witnessed ever before because we are truly living through a transformative period of time that has seen the acceleration of new technologies, new ideas, new concepts, new companies and new disruptors.

It's important to go beyond what is happening with ChatGPT and understand what I call the AI megatrend. The transformative, disruptive concepts which are redefining all kinds of industries and providing both promise and peril going forward.

In the world of manufacturing, I always like to suggest this is the reality for our future: Companies that do not yet exist will build products not yet conceived, using materials not yet invented with methodologies not yet an existence. And artificial intelligence is going to play a huge role in that last bit, having to do with methodologies.

It is said that spending on AI and manufacturing is going to go from \$6.2 billion currently to \$181 billion in eight years. This is a staggering change. It's going to involve technologies such as co-bots and robots embedding AI in industrial process, accelerated digital twin technology where we can conceive and build an entire replica of a manufacturing process using virtualized AI technology and embedding it into the industrial Internet of Things, the opportunities are endless.

There's also predictive maintenance using AI to anticipate and identify a downtime in our manufacturing process. Beyond that, there's massive opportunities emerging in supply chain optimization. Everything we are doing in the world of manufacturing is going to involve significant embedded AI in what we do. How we do it and how we build things. And little of this has to do with ChatGPT and other emerging AI technologies.

What's the downside risk in the world of manufacturing? It's pretty obvious: It has to do with skills and knowledge. Look, I've explained on stage for years that the world of manufacturing has become so complex that it's almost as if the typical machinist today has to be able to do trigonometry in their heads to deal with the complexity of the manufacturing process around them.

And that trend is only going to accelerate with the acceleration of AI. We are going to see a shortage of manufacturing engineers with AI expertise. We are going to see a shortage of AI experts who can design and conceive new manufacturing processes. We are going to see a shortage of people with expertise in robots and co-bots in all these new technologies coming into the manufacturing workplace.

And if we do not solve the skills challenge, we will never be able to fully take advantage of the massive opportunities that it's presenting for us.

So, what do you do with all these fast-moving trends going forward? My advice and guidance have always been simple. You need to think big, start small and scale fast. You need to think big about the scope of the transformative trends which are unfolding here and the promise and peril, the opportunity, and the challenge that they provide for your organization and for your industry going forward.

You need to start small. You need to start a whole bunch of small-scale projects to work with to understand and to comprehend the scope of what is unfolding with these AI

technologies. And you need to be prepared to scale fast, because one of my favorite observations is this — the future belongs to those who are fast.

What is happening with AI today involves what I call the era of acceleration. It is evolving at a blinding speed unlike anything I've ever seen before. And you need to be ready for a new world of disruption and transformation. I'm Futurist Jim Carroll.



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