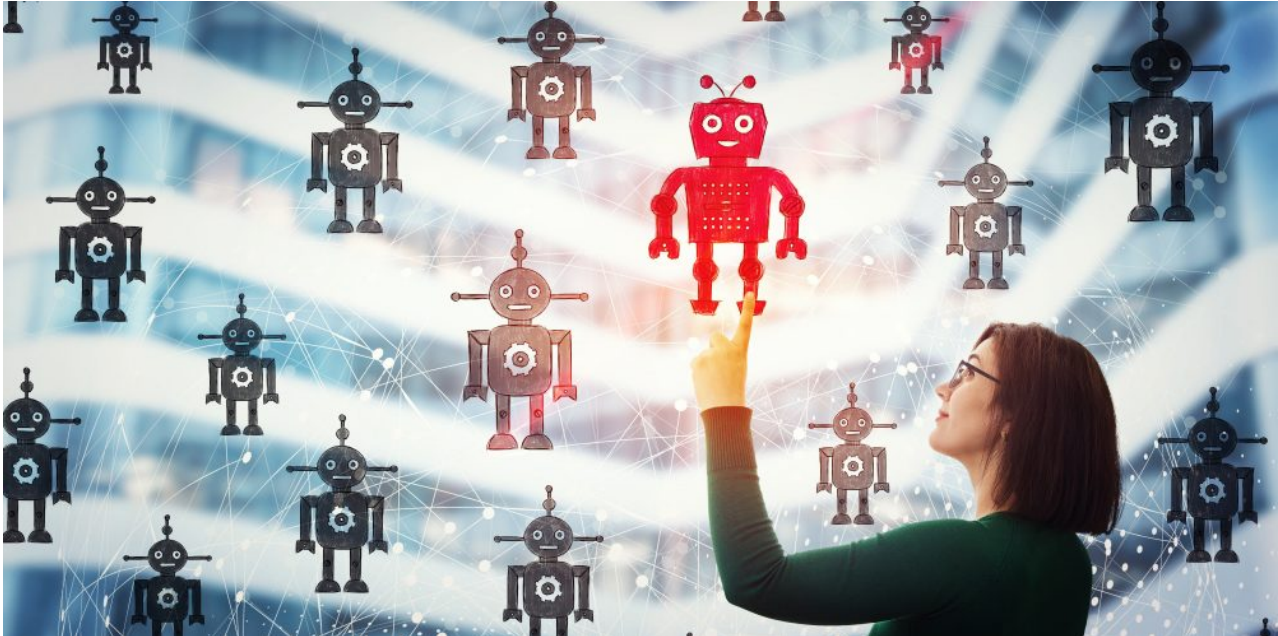


Why Humans Will Remain at Center of an Automated Workforce

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As companies continue to explore automating their processes through hardware and software approaches, whether using artificial intelligence or robotics, human workers may feel that their jobs will be eliminated or replaced.

In reality, most experts are saying that humans will still need to be involved in the workforce of the future. While some tasks may be replaced, human workers will be at the center of this new workforce, with new skills that focus on communication rather than repetitive tasks or operations.

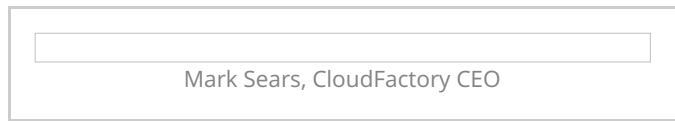
Robotics Business Review recently spoke with Mark Sears, founder and CEO of CloudFactory, about the changes that companies will need to make to prepare their workforce for the new world of robotics and AI. The company has used a cloud-based workforce for more than a decade, utilizing them in document transcription or human-trained algorithms in AI and self-driving cars. The company has raised about \$13 million in funding, most recently raising \$7.3 million in a Series B round.

Creating an augmented workforce

Q: How are robotics and AI changing the nature of work today? How do you define the term of an “augmented workforce?”

Sears: As the cost and speed to develop AI continues to improve, we'll begin to see wider adoption of AI across business functions and across industries. Some business processes will be human-centric, and some will be AI-centric. Both require an augmented workforce, which blends the work of employees and AI.

In a typical AI-centric example, organizations may replace call center agents with a chatbot to automate and speed service requests. This scales



well but can lead to less-than-ideal customer experiences. In a human-centric example, AI techniques are used to augment the call center agent to expedite finding accurate answers. This approach doesn't scale as well, but usually results in better customer experiences. Both approaches are valid and require a scalable workforce solution that integrates people and technology to improve business processes, validate the training data model, and manage AI operations work.

For human-centric processes, using a cloud workforce assisted by AI makes a lot of sense. For AI-centric processes, using a "human in the loop" approach, or augmenting the workforce with AI to handle exceptions and edge cases is helpful. The resolution of those cases is fed back in to train the AI. Either way, businesses that adopt AI techniques will need a scalable, human workforce.

Q: How are the technologies around business process automation or robotic process automation changing?

Sears: AI is changing everything – and fast. Virtually every industry can apply AI to some aspect of business to solve a problem or simplify a process. We're seeing the most significant progress in autonomous systems, where AI and robotics are used to transport people, goods, and information.

As AI techniques become more advanced, we'll see more automation in the workplace. Robots won't completely replace people; workers always will be needed to create, maintain, and improve robotic systems – even those with robust AI capabilities. Workers who learn to work closely with robotics and other AI-powered systems will be most marketable.

Q: Talk about your customers – what are their most common problems that automation is helping to solve?

Sears: CloudFactory works with more than 115 clients who are applying technology to solve problems across many industries, such as finance, e-commerce and robotics. We work with 11 of the world's top autonomous vehicle companies.

Our clients' most common problem is with their training data operations. This is the process to clean and structure data for machine learning. They may have problems with throughput, quality or tooling. Here's where automation can help – we combine people and technology to transform a company's training data operations into a virtual

production line. With the right tools and processes, workers have what they need to optimize productivity and quality.

Q: What are the market prospects for automation, and how do you view the rising number of competitors in this space?

Sears: From what we are seeing, market prospects for automation look excellent. Some industries have been at this for a while – specifically, the autonomous vehicle space. It's challenging to compete in that space because there are so many traditional providers (for example, GM or Chrysler) and newer entrants (Tesla, Pilot.ai, etc.) working on that technology.



In our business, we're seeing more competitors arise across the globe. That's not surprising, because more companies are applying AI in their businesses and they need people to process the data those systems consume. CloudFactory's mission is to create meaningful work for talented people in places where work opportunities don't exist. We use our technology to create flexibility and ease for workers, which we find contributes to high productivity and data quality.

Business strategy for automation

Q: How should businesses incorporate automation into their overall workforce strategies?

Sears: First, take stock of the operational processes that are critical to serving customers and driving revenue. This includes how a workforce interfaces across teams, how workers do the work, how they assess quality and how workers communicate with customers.

Identify routine, low-complexity, and high-volume tasks that require human expertise at some point in the process. Work with the teams who complete those tasks to get their views on the work, learn which operational tasks are difficult to scale, and identify where quality can break down.

Whatever you decide to automate, you will rely heavily on the people in your operation to manage the process. Automation isn't about replacing people with machines, it's about augmenting your workforce with technology that makes it easier for your teams to operationalize scale and quality.

Q: What challenges could companies face during deployment, and how should they handle complexity should it arise?

Sears: Developers of robotic systems are finding it difficult to plan for every scenario a robot might encounter. It won't take long before you find your AI operating in uncharted territory. As they encounter these exceptions, they train for them.

To handle this complexity, try limiting the variables in the robot's environment. By controlling or limiting some of the environmental variables, you can establish specialization in some areas, then expand.

Future workforce challenges

Q: What roles will human workers play in the workforce of the future? Do you have some specific examples?

Sears: People will always play important roles in the workplace of the future. Even in highly automated environments, people must continue to develop, train, and iterate machine learning models to facilitate robotic automation. The feedback provided by the humans in the loop – even in highly automated environments – is critical to the success of automation.

This comes more into focus when we look at the sectors embracing and implementing automation today – manufacturing, retail, healthcare, and energy, among others. From those industries, we've learned that workers need a variety of skills to prepare for the workplace of the future: technical skills such as data analysis and programming, social skills such as communication and leadership, and cognitive skills such as creativity and critical thinking.

Q: Looking ahead, do you see automation doing things that it can't do yet?

Sears: It's exciting when automation successfully replaces routine, critical tasks without negatively affecting quality. We've seen interesting applications of technology, including the use of drones to assess physical damage for insurance claims and robotics that inspect underwater equipment for safety.

We hope to see improvements in the tools that make automation possible – from scripting to coding to hardware. We also hope to advance how we measure productivity, quality, and worker engagement. Today, much of this work is manual, and it makes it possible for us to identify and come alongside workers who are struggling or frustrated to support their success.