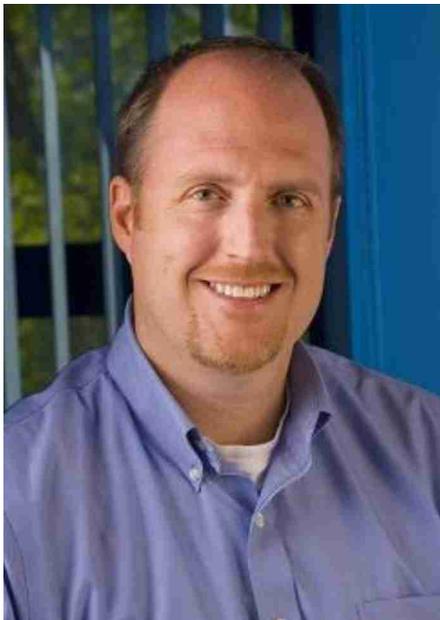


## Using Robotics, Harvest Automation Inc. is bringing Innovative Solution to the Agricultural Market Place in areas where finding Sustainable Labor is Difficult



**John Kawola**  
 CEO

**BIO:**  
 Prior to Harvest, John was the CEO of Z Corporation, one of the early pioneers of the 3D printing industry. Z Corporation was acquired in 2012. Prior to Z Corporation, John held technical and marketing positions at Albany International and General Electric. John holds a BS in Mechanical Engineering from Cornell University, an MS in Mechanical Engineering from Rensselaer and an MBA from Union College.

### About Harvest Automation Inc.:

Robots are powering the next innovation surge in agriculture. Backed by a team of world-class robotics innovators, Harvest Automation has engineered the first practical, scalable robots for a range of Agricultural applications. Addressing labor scarcity issues, Harvest enables growers to

create a sustainable workforce of robots working safely alongside people to increase efficiency, reliability and plant quality. Backed by Entrée Capital, Founder Collective, Life Sciences Partners, Cultivian Ventures, and Massachusetts Technology Development Corporation, Harvest Automation is headquartered outside of Boston, Mass. For more information, visit [www.HarvestAI.com](http://www.HarvestAI.com).



**Interview conducted by:**  
 Lynn Fosse, Senior Editor  
 CEOCFO Magazine

**CEOCFO:** Mr. Kawola, would you tell us about your overall vision for Harvest?

**Mr. Kawola:** Harvest Automation is about bringing autonomous automation into the agriculture space. For years, there have been certain segments of agriculture that have been automated. No one is picking wheat anymore in the United States. There is large equipment that automates the harvesting on a large field, on an acre-by-acre level. The Harvest vision is to look at the next range of manual labor tasks, where finding sustainable labor is difficult. We bring automation into the market to address these manual labor operations.

**CEOCFO:** Would you give us an example?

**Mr. Kawola:** As a first market, we are choosing a very specific application in the nursery and greenhouse market. People often think about farming and crops being grown in the ground; but there are also very large farms in this country where there are crops being grown in pots. As a normal part of the growing process, these pots are often spaced and moved multiple times during the course of their growing cycle. These are heavy pots and they need to be moved on a regular basis. The labor that is typically used for those operations is seasonal and irregular. Increasingly growers are having a hard time finding the labor to do that work. Our technology will bring a solution, which is a regular, safe, and will help yield a higher quality product.

**CEOCFO:** How did you decide to start there?

**Mr. Kawola:** The company was very thoughtful in trying to find very specific pain points within the agriculture

industry. Instead of developing a product and then finding a problem to go fix, the team here looked at the pain points that are difficult for business owners where automation can bring a great deal of value. That was the first part of the equation, trying to find very specific problems out there. The second part was developing a robotic solution that in the big scheme of things would not be too difficult or take too long to engineer. Developing these robots has not been easy to do but at the same time, developing technology to go find, pick up and place a pot in a specific place is easier than picking fruit. We may do that someday, but chose not to pursue that first.

**CEOCFO:** Do you program the robot to choose certain ones; how does it work?

**Mr. Kawola:** The robots are designed to work autonomously either alone or in teams. The system is developed to allow the grower to pre-program the robots to perform a specific task. For example, it is a common operation on a large nursery to take a population of pots that have been stored very close to together and spread them out over a larger field. They are close together initially to protect against the cold and to minimize water and fertilizer wastage. However, as the season progresses, the pots need more space to grow. The robots can perform this task. In larger operations, the grower is typically moving hundreds of thousands of pots of one variety.

**CEOCFO:** You have recently come into the company as CEO, what attracted you and what skill sets did the company need that you provide?

**Mr. Kawola:** What was attractive to me as an opportunity was that Harvest Automation is one of an emerging set of companies that is starting to look at the next level of applying robotics to practical manual applications. Industrial robotics have been around for thirty years and there are many success stories in manufactur-

ing where robots can perform repetitive tasks more precisely and at a lower cost than what people could do manually. For example, in the automobile market, there are a range of assembly and finishing steps where automation has been critical.

When markets are surveyed further, you start to see robotics being used more and more to address manual labor issues. A good example is warehousing. Online retailers have very large warehouses. They are starting to bring robotics and automation into those operations to improve efficiency and shrink order fill time. Harvest chose to address the agriculture market and started to look at manual labor tasks, which are inefficient and which are physically demanding. That was interesting to me

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in terms of finding a technology product that could address real problems.

My skill set is that I have experience with hardware companies, so I am very used to technologies where there is complex design, manufacture and service needs. This is also a new market, so we will need to develop strategies to help growers implement these solutions. I have some experience from my previous company, Z Corporation. Z Corp is a 3-D printing company. Ten years ago, 3-D printing was very new to many companies and we had to develop ways to introduce this new approach into product design organizations.

Harvest is transforming from being a product development company to a commercial company. We have shipped first products to customers. We have started to validate our business model. We are now more fo-

cused on hiring sales people, support personnel, thinking about marketing and how we ramp up to be much more of a commercial enterprise.

**CEOCFO:** As far as ROI and the cost of the equipment, is it easy to understand or is there an 'aha' moment?

**Mr. Kawola:** We offer a pretty clear ROI. The robot itself sells for \$30,000. Typically, early customers will buy in lots of four, so it is \$120,000 investment. We expect many customers to need much more than that. We are targeting an 18-month payback. Aside from ROI, there are a many customers who are experiencing real constraints in their ability to find and retain the labor needed to perform these tasks. For those customers, the ROI is secondary. They need a predictable and lower risk solution.

**CEOCFO:** Does Harvest Automation have the funding needed to get through the next steps?

**Mr. Kawola:** We have raised \$13 million and we will be looking for additional funding later in 2013 as we move to the final stage of commercial ramp-up.

**CEOCFO:** Why should the business and investment community pay attention to Harvest Automation?

**Mr. Kawola:** The reason to pay attention to Harvest is that we are bringing technology into places in the workplace that have yet to be automated and where there are very clear pain points. We are bringing new and scalable technologies to address specific and acute manual labor problems. Why now, instead of twenty years ago? Many of the core pieces of the technology like artificial intelligence and vision systems were previously unaffordable. Those technology components are now robust, proven, and cost effective. We can now bundle technology into a solution that is scalable. Agriculture is a very large market with multiple opportunities to introduce automation to solve real business problems.