



The UR+ ecosystem explained

Discover why we built it, and what it can do for you

THOUGHT PAPER / PUBLISHED BY UNIVERSAL ROBOTS

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Introduction

With the UR+ program, Universal Robots (UR) launched the world's first ecosystem of third-party end-effectors (sometimes called end-of-arm tooling or EOAT solutions) and other add-ons for collaborative robot (cobot) arms.

Yet turning to an ecosystem business model was not the only path we could have chosen to complete our robotic arms with end-effector "hands." Other companies make their own end-effectors, for example, instead of opening up to third parties.

So why did we go the ecosystem route? How does the UR+ ecosystem benefit our customers? How does it help companies that produce end-effectors? And what do we think the future of our UR+ ecosystem will look like?

This paper will examine these questions, while also presenting a fuller picture of the UR+ program itself.

Nobody's an expert in everything

Our first reason for choosing the third-party ecosystem route to offering cobot end-effectors was simple: We understood right from the start that we just couldn't do it all.

A great robotic arm is exceedingly difficult to engineer – several of our competitors can vouch for that. So the idea that we could excel at this and *then also* produce end-effectors that live up to our standards simply didn't seem believable.

To really work, robotic arms have to be almost impossibly versatile, and the software used to operate them must be quick to learn and easy to use. UR has mastered these arts. It's what we do – versatile and easy.

As the cobot's "hands," end-effectors are the opposite. They are industry- and application-specific, and the companies that make them possess highly specialized knowledge of exactly how their specific products are used and must function. These companies are experts in the tiny details.

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Not a problem, but an opportunity

At Universal Robots, we've always looked at this difference between robotic arms and "hands" – and the different knowledge and skills it takes to produce them – not as a problem, but as a great opportunity for mutually beneficial collaboration.

What's more, we thought it only natural that we should facilitate this collaboration. At UR, after all, we are experts not just in robotics, but in collaboration.

On an even more basic level, we are optimists by nature. We are optimistic about the future of collaborative robotics, and optimistic that the energy inherent in networks of people working towards a common goal – the energy in the UR+ ecosystem – can bring about exponential growth in value add for the customers we share with our UR+ partners.

What is ecosystem thinking?

In 1993, James F. Moore's seminal article "Predators and Prey: A New Ecology of Competition" was published in the *Harvard Business Review*. Coining the term "business ecosystem," Moore defined it as:

An economic community supported by a foundation of interacting organizations and individuals – the organisms of the business world. The economic community produces goods and services of value to customers, who are themselves members of the ecosystem. The member organisms also include suppliers, lead producers, competitors, and other stakeholders. Over time, they co-evolve their capabilities and roles, and tend to align themselves with the directions set by one or more central companies. Those companies holding leadership roles may change over time, but the function of ecosystem leader is valued by the community because it enables members to move toward shared visions to align their investments, and to find mutually supportive roles.¹

Moore's article and the book that followed were quickly recognized as landmark studies in organizational theory, and the ecosystem thinking he defined continued to flourish, particularly in Silicon Valley and other centers of tech innovation around the world.

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How the UR+ ecosystem benefits customers

At UR, we've found that the ecosystem we've created with our partners benefits customers in four ways: Utility, choice, security and ease.

By *utility*, we mean that – because the size and diversity of the UR+ portfolio compared to other setups – any given customer is more likely to find just the right tool for their application with UR+ than with other suppliers. This means more companies can benefit from robotic automation, and those that do can maximize the productivity, quality and cost-saving benefits that cobots provide.

It goes without saying that an ecosystem approach, with multiple suppliers producing the same types of end-effectors, gives customers more *choice* than if they only had one option available to them.

For the individual customer, choice means a more-exact match to specific needs. In a broader sense, it means a more dynamic ecosystem, with partners jostling to outdo each other or find underserved niches – which keeps pushing quality higher as it broadens the offering as a whole.

When we speak of UR+ and *security*, we mean the security of your investment in automation infrastructure. Smaller offerings might entice today, but they could be gone tomorrow, leaving you stranded with a futureless

technology. In addition to this “staying power” security, a larger ecosystem means more engineers working to solve your challenges today and tomorrow – and a greater chance that they will succeed.

Ease, in the UR+ context, means faster deployment and less-costly training time for your operators. We achieve this through certified seamless hardware integration, and end-effector control that is fully integrated in the UR control interface. A UR cobot can be deployed and put to work in next-to no time, and the UR+ program makes sure that end-effectors don't slow you down or add costly complexity.

It all adds up to empowerment

Ultimately, the UR+ ecosystem was created to empower customers – just like UR cobots. UR+ taps into that entrepreneurial do-it-yourself spirit that drives companies to take the first steps toward automation. It's more of a movement than a business model, and involvement usually means positive transformation.

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What's in it for end-effector producers?

The UR+ ecosystem empowers manufacturers of end-effectors just as it empowers companies that take the automation plunge with Universal Robots.

UR+ partners gain sales *access* to a larger worldwide installed base than they'll find with any other collaborative robot manufacturer. They ensure maximum *performance* by making sure their products are used with the best cobots available. They maximize customer *satisfaction* by delivering the compatibility and ease of use that the UR+ certification process ensures. And they can count on business growth, as the installed base of UR cobots just keeps expanding.

An energy that's infectious

A less-tangible benefit that many UR+ partners describe is the energy they're able to tap into when they join the program. The energy that resides in a fast-growing ecosystem is infectious and has an inspiring, invigorating effect on anyone who joins the community. It is truly a situation where the whole is greater than the sum of its parts, and that benefits everyone involved.



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UR+



End-Effectors



Vision



Accessories



Software

- + Polishing
- + Sanding
- + Assembly
- + Pick and Place
- + CNC
- + Lab Analysis and Testing
- + Machine Tending
- + Packaging and Palletizing
- + Injection Molding
- + Gluing, Dispensing, and Welding
- + Quality Inspection
- + Screw Driving
- + Your Industrial Robot Application?

CASE

Clearpack leverages UR+ to design an innovative palletizing solution

The challenge

When planning their factory-floor layout, many companies don't consider reserving space for auto palletizing – and run into trouble when they eventually choose to implement the process. Committed to developing smart, innovative solutions, Singapore-based packaging machinery supplier Clearpack set its sights on designing a safe, versatile, and easy-to-use palletizing system that would be compact enough to fit even without dedicated space on the factory floor.

The solution

Already working with Universal Robots on other systems, Clearpack turned to UR and the company's UR+ ecosystem partner SKF Motions Technologies for help with the innovative new solution. The Clearpack team discovered SKF by browsing through the UR+ Virtual Showroom online.

The solution itself consisted of a UR10 cobot with its base attached to SKF's LIFTKIT accessory, which is able to lift a cobot by up to 900 mm with compact retracted height.

"Since the LIFTKIT was designed based on UR requirements, it was pretty easy for us to integrate and put the whole system together, taking not more than a day," says Clearpack general manager Vishnu Puranik, adding: "We looked at different options, but with the LIFTKIT, we were able to get the required stack heights with the linear speed that we wanted. So, it was an easy decision for us."

The outcome

The UR+ solution that Clearpack chose has been a great success, resulting in a notable increase in orders for the company's palletizing solutions.

SKF Motions Technologies was also pleased to see its technology deployed in Clearpack's new palletizer. "The UR+ platform offers a fantastic opportunity to showcase our products for this booming market of cobots," says Thomas Lotz, business support manager at SKF Motion Technologies, adding: "The response has been overwhelming since joining UR+. We have never had such an immediate impact and market response with a new product launch."

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– Thomas Lotz, Business Support Manager,
SKF Motion Technologies

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The quality question

Companies that choose to develop their add-ons and accessories themselves often argue that doing so is the best way to guarantee the quality of the solutions they provide.

At Universal Robots, we freely admit that there are risks involved in opening up. But we've found that they are manageable – and the risks involved in pretending you can do everything yourself are far greater.

To ensure the quality of the third-party end effectors and other products available through the UR+ program, we operate with a tried-and-tested certification system. The challenge is to give developers the creative freedom to invent their dream solutions, while also insisting 100% on the compatibility, performance and ease of use.

The sky's the limit

At UR, we not only believe that a third-party ecosystem approach is the best way to get complete cobot solutions in the hands of customers. We've got proof that it is – in the booming UR+ marketplace and virtual explosion in the number of companies lining up to join the UR+ family.

For us, there is no limit to the new solutions and opportunities that UR+ will open up for customers and partners going forward. As cobot automation continues to grow and move into new application areas, new end-effector and accessory developers with useful new solutions will just keep coming.

Learn more

If you have any questions about Universal Robots' thoughts on this topic, please contact

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www.universal-robots.com/plus