

# Wireless Charging Infrastructure by PohlCon - the interview series

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Interview: Contactless charging infrastructure as a transformation opportunity and efficiency driver. Energy supply embedded in the ground as a sustainable supply concept for robots in logistics and production companies.

## Introduction

Capgemini Engineering is a global leader in helping companies transform and reposition their businesses through the use of technology. As a global leader in engineering and R&D services, Capgemini Engineering helps its clients accelerate their journey to the Industry 4.0 era. Capgemini offers global expertise and capabilities in technology, software, agile development platforms and industrialised delivery models.

Felix Haubold leads multidisciplinary teams in various functions with the goal of implementing new functions and processes in the automotive industry, among others. He strives to improve efficiency and demonstrate new ways of mobility. His extensive international experience gives him a unique insight into processes around the world.

***„Contactless in-process charging is an important building block in the efficient synchronization of robots in processes. The WCPS approach of integrating charging flush with the floor solves many challenges of effective fleet electrification.“***

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## Robots on a strong growth course

**1) Companies are using new disruptive technology platforms as an opportunity for transformation in order to position themselves for the future in multidimensional competition. What are the main trends influencing the speed of transformation?**

For many companies, transformation opportunities with rapid efficiency gains lie mainly in the area of automation. The drivers for the speed of implementation are, on the one hand, demographic change flanked by a lack of skilled workers, who are an important resource. Furthermore, customer requirements and products are becoming more individualized, which has an impact on production and logistics processes. The need for modular "fluid" processes is growing. The latter is also relevant, for example, when companies want to quickly gain a foothold in new sales markets and set up a quickly scalable ecosystem with a suitable production and logistics infrastructure.

**2) What role does automation with mobile autonomous robots play in this context and what influence have the ongoing global conflicts and the corona pandemic had?**

In the sustainable ecosystem just mentioned, autonomous robots play a crucial role and can demonstrate a strong growth trajectory. The tense situation caused by the pandemic of the last 2-3 years and global uncertainties have certainly had a strong influence on operational decisions to quickly secure one's own production and logistics chain.

Those who want to survive in the market in the long term rely on partially or fully automated processes in combination with autonomous robots as a link between warehouse, production and downstream logistics.

**3) What deployment hurdles do production and logistics companies have to overcome in order to be able to use mobile robots quickly and easily in different areas?**

Autonomous robots have long been part of everyday life for corporations in production and logistics environments. The use and expansion of the fleet is routinely driven forward here. For other larger and medium-sized companies, which for various reasons have not yet dealt with the process integration of mobile driverless transport systems, the hurdle to the integration of the vehicles is falling further and further, as the commissioning and operability is becoming easier and easier for the company's employees. The barrier to entry is also falling because robot manufacturers are offering their vehicles together with harmonised hardware and software products from other suppliers as a package thus providing the complete ecosystem for the end customer. The simulative possibilities of automation processes by internal and external planners have also improved significantly.

The time from decision-making to commissioning is significantly reduced. An important planning step, but not a hurdle, before commissioning is the consideration of space utilisation in interaction with the needs of the end customer's robot fleet.

The electrification of the fleet can be especially challenging as building planning and construction at the time naturally did not take into account the process-related charging of robots. Similar to electric cars, the energy supply strategy for robots must also be able to be sensibly followed and efficiently subordinate to the processes.

**4) In this context, what are Capgemini Engineering's approaches to addressing client needs and providing solutions?**

As a multidisciplinary team, we combine many skills to offer our clients a sustainable consulting approach for sustainable growth. The analysis of the use of new disruptive technology platforms, such as autonomous robotic systems is also an important part of the joint considerations. The variety of work tasks to be handed over is enormous and offers a lot of scope for raising as yet unused potential in process flows in the companies. From production and manufacturing logistics to outbound logistics, robots offer a comprehensive portfolio of the most diverse capabilities of AGVs and AMRs across manufacturers. We place these capabilities in the context of our customers' requirements and examine how they can be sensibly integrated into the existing logistics and production organisation.

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## 5) What criteria/objectives should be set for an optimal charging infrastructure for logistics and production areas?

In addition to the fundamental strengthening of the competitive situation through automation with robots, we also consider, for example, the surrounding infrastructure of the autonomous vehicles and whether this fits in with the customer operational processes. In particular, an efficient, scalable energy supply without restrictions for processes, vehicles and personnel is an important component in the decision making process.

Whether a robot matches with the processes depends not least on its energy supply concept. One criterion would be, for example, the avoidance of process-disturbing effects, such as detours, blocking of areas or distant charging zones for robots.

**One solution here, for example, is the "in-ground" type of installation in combination with wireless charging technology.** This means that the charging point should ideally blend discreetly into the direct working environment without being an obstacle for employees or other vehicles.

Furthermore, the charging infrastructure should protect the technology to ensure permanently operational readiness.

## 6) How do you evaluate the concept of flush-to-floor contactless charging points ("wireless charging") in logistics & production environments?

Due to its excellent efficiencies, contactless charging of industrial vehicles has long since arrived in industry as a modern alternative to contact-based systems. The type of integration and installation is ultimately an extremely important factor for the potential lifting of autonomous robots. With the flush-floor integration of contactless charging technology, I see enormous opportunities for a smooth energy supply - especially for a large number of existing buildings to be retrofitted.

### Outlook

## 7) Can you imagine interoperable contactless charging systems becoming a standard in building planning and modernisation in the future?

**We see that PohlCon's innovative WCPS loading concept is already being used by demanding customers such as Toyota or Volvo and is industry-proven.** This means sustainable efficiency gains for end customers, who no longer have to worry about area closures, loading procedures and operational safety.

If contactless charging solutions for in-ground or raised floor areas come into consideration for our consultancy projects, we will refer to the WCPS.

### Product Info:

PohlCon GmbH develops and sells the WCPS system, a contactless charging infrastructure product that is integrated decentrally and flush with the floor in logistics and production real estate to enable contactless charging directly in the working area of battery-powered vehicles such as robots.

WCPS is the technological counter-design to the previous old wired or plug-in contact-based charging systems to charge robots. The advantages of contactless charging points are, in particular, the elimination of restricted areas and the conversion into value-added storage space, occupational safety, operational reliability and installation close to the process, which means optimum utilization of space and the fleet.

