



RoboScan'12 was conducted by the BIBA in cooperation with ISEIC Pfeffermann Consulting. The study was sponsored by the Kieserling Stiftung. Since 2007, the respective media-partner remains the Springer-VDI journal "Logistik für Unternehmen".

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The Kieserling foundation is a legal and charitable foundation which aims at the promotion of science, research as well as development and education with a focus on transport and logistics.

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LOGISTIK
FÜR UNTERNEHMEN
Das Fachmagazin der internen und externen Logistik

LOGISTIK FÜR UNTERNEHMEN (logistics for business) is published by the Verein Deutscher Ingenieure e.V. (Society of German Engineers) at Springer-VDI-Press. The professional journal for internal and external logistics focusses on logistic solutions from an economics perspective.

 **RoboScan'12**
www.studie.robotik-logistik.de

Study Results with Regards to the Online Questionnaire Concerning Robotics-Logistics

Brief report

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“Robotics in logistics” the status quo

Intuitive robotic programming represents a possible precursor to increasing applications of robotic solutions within the field of logistics. This is an insight from **RoboScan'12**, a market analysis conducted by the BIBA - Bremer Institut für Produktion und Logistik GmbH in co-operation with ISEIC Pfeffermann Consulting. The study has been sponsored by the Kieserling Foundation and the journal “Logistik für Unternehmen” (Logistics for Business) published by Springer-VDI-Verlag is the media-partner.

This brief report offers insights into “intuitive robot programming” resulting from the study. A more extensive study report “**RoboScan'12 – Studiergebnisse der Onlinebefragung zum Markt der Robotik-Logistik**” contains all facts and figures pertaining to the market situation from the perspective of the market participants, logisticians, consultants, research institutions, and technology-providers. This report was published by the Springer-VDI-Verlag and is available from BIBA.

We would be delighted to welcome you on our knowledge platform for exchange concerning the study: www.robotik-logistik.de.

The market for robotic logistics

Robotic logistics is a market defined through supply and demand of industrial robotic technologies with applications in the control and management of goods.

Participants in this market are logistics companies as potential customers for robotic solutions, consulting firms offering services for planning the implementation of robotic systems, technology suppliers involved in the development, building, integration as well as maintenance and servicing of robotic technology, and research institutes offering research insights on the development and adaption of robotic technologies.

The aim of the **RoboScan** studies, first initiated in 2007, is to explore the development and potential applications of robotic logistics. Representatives of all of the above mentioned participants in the market are included in the surveys. This year's focus topic is “intuitive robot programming”. From April until mid-August the online questionnaire was directed towards logistics professionals.

Suitable solutions are yet to be found

The fifth-year reflection showed that robotic logistics is developing only slowly. Almost half, 47 per cent, of all logistics companies surveyed are using robotic solutions by now, whereas in 2007 only 41 per cent used robotic solutions. The named outcomes of the implementation of robotic solutions are the optimisation of robotic solutions which, for logisticians, means the optimisation of business processes, security of processes and process speed. Logistics companies who do not use robotic solutions are still missing a suitable solution.

Simple adaption of a robotic system to altered conditions: generating of necessary information through an untrained employee who can specify new motions via an intuitive programming technique. The machine code is automatically generated by the system.

High investment needs in the area of robotics-logistics

Potential of robotic solutions is mainly seen in efficiency enhancement for the design of a flow of goods. More than 75 per cent of logisticians plan to implement one or more robotic solutions within the next five years. More than half of the logisticians claimed a high investment need for robotic logistics (Fig. 1). Important criteria for the implementation of robotic solutions are (1) adaptability to changing parameters, (2) ease of integration with existing technology and (3) ease of use.

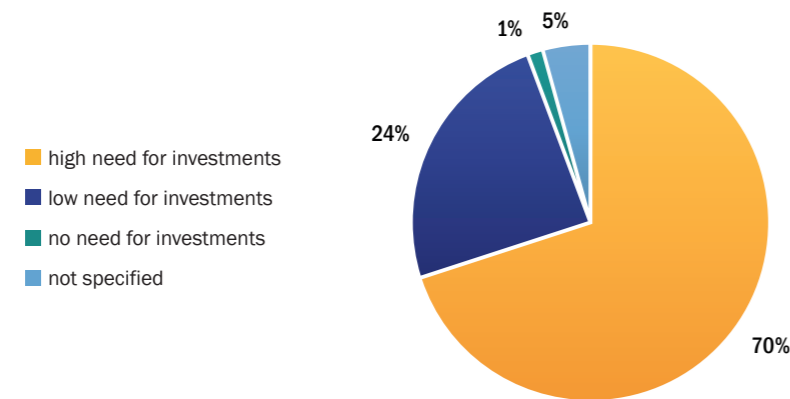
Intuitive robot programming as a possible companion

Intuitive robot programming represents a precursor to robotic solutions in logistics. 81 per cent of the study participants, for whom intuitive robotic programming is relevant, rated the influence of intuitive robot programming on their willingness to deploy robotic solutions with high to extremely high. Furthermore it can be seen that the group of “logistic companies” rated this issue with 100 per cent. Therefore logistic companies consider intuitive robot programming as an influential factor for the usage of robotic solutions. This is also apparent in the demand for ease of use of robotic solutions: 71 per cent of the logistic companies could imagine upgrading their current robotic solutions with intuitive robot programming (Fig. 2).

innovation communication will be a central task for adopting new technologies, the demonstration of reference projects, and the exchange of experiences in the application of robotic logistics.

Communication needed!

An inter-group comparison shows that in some points very different perceptions exist, and the customer-supplier view is not always consistent. Logistic companies, for instance, seek the “successive development towards a fully automated process within logistics”, whereas technology suppliers prefer to “partially automate single processes”. For logisticians, ease of use is the most important criteria for robotic solutions whereas technology suppliers cite adaptability (adjustability to changing parameters) as the most important criteria.



Working against barriers

Innovation and, along with it, the acceptance and diffusion of change, is pointed to as highly important in the section of qualitative statements. Of the logicians who use robotic solutions, 24 per cent have heard of intuitive robotic solutions; though no one is actively considering it and the topic is relevant for 41 per cent. The following barriers for the implementation of robotic solutions with intuitive robot programming were mentioned: being unknown to the market, necessity of clarification and references to overcome barriers. In addition it was stated that, if the number of implementations and therefore discussion of experiences increases, imitation would increase; early adopters are momentarily lacking. The topic of innovation and diffusion of new technology is crucial and therefore

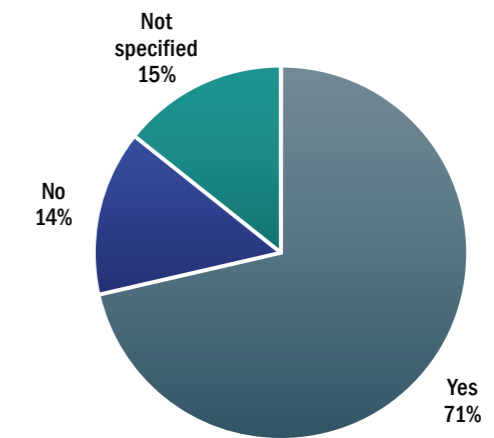


Figure 1

How do you assess the need for investments in robotic solutions within the next five years? (overall)

Figure 2

Could you imagine upgrading your existing robotic solution with intuitive robot programming? (Group logistic companies)