

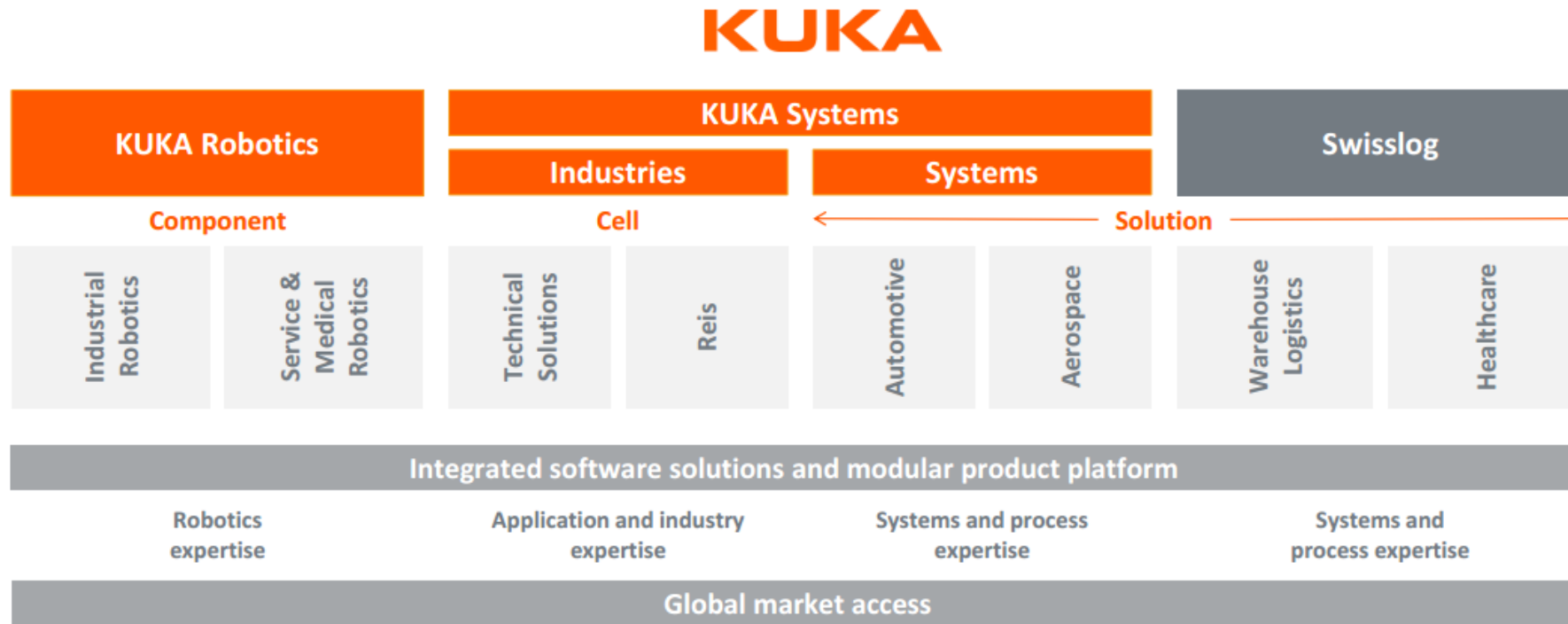


KUKA e Industrie 4.0

Alberto Pelleri
Strategy & Marketing Manager
KUKA Roboter Italia spa

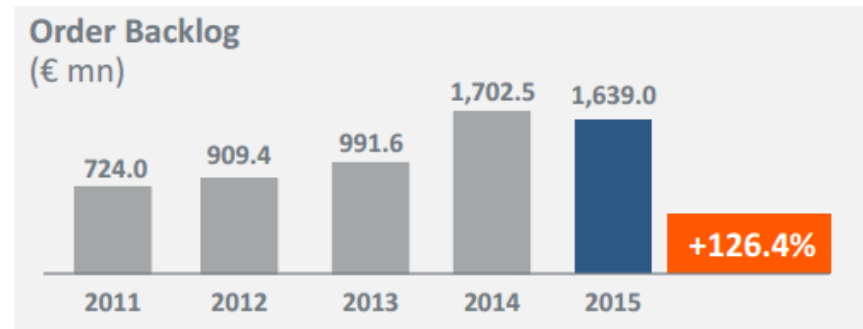
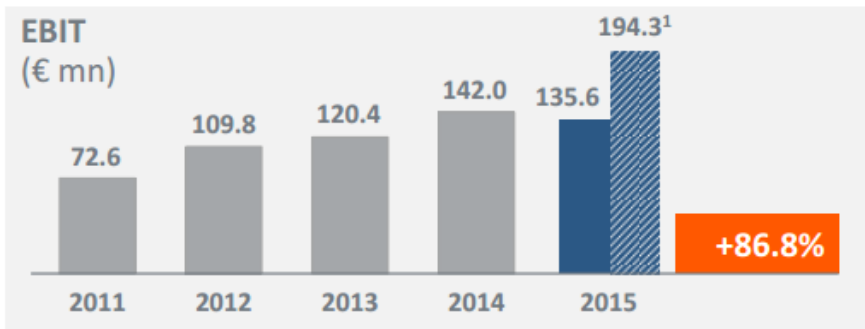
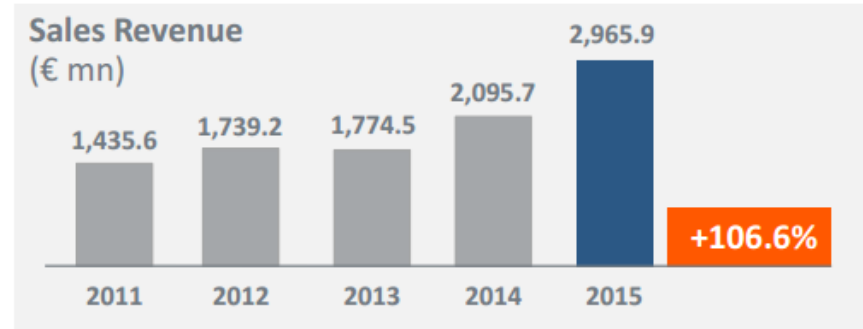
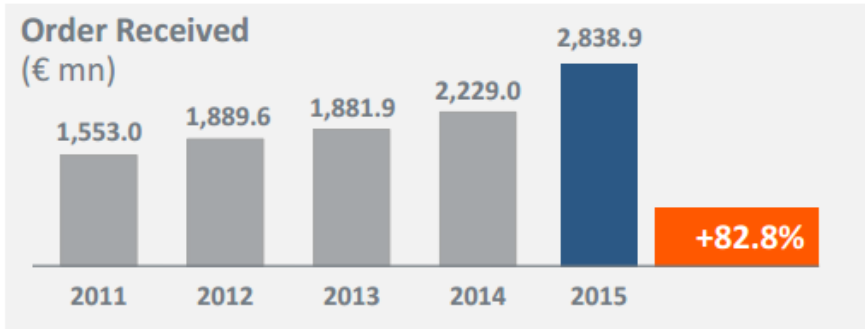


Strategy – Boost value of KUKA





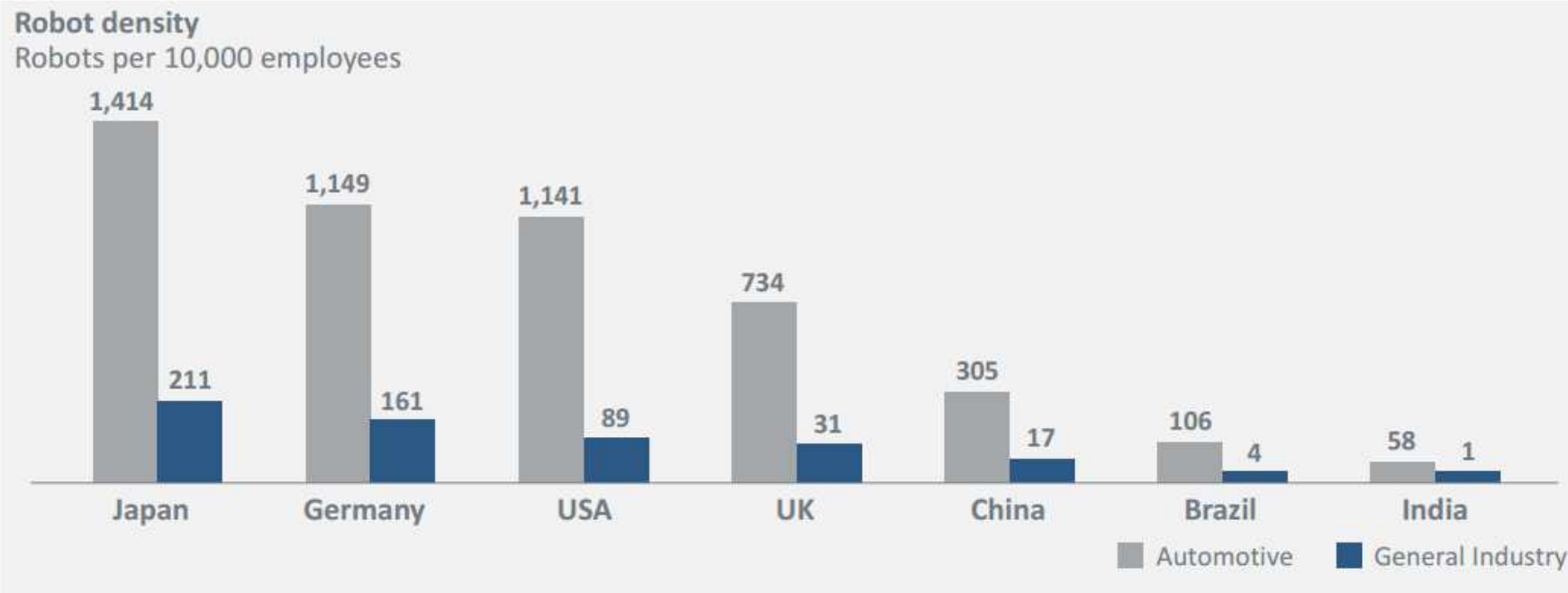
KUKA Group – Key financial figures



1) incl. PPA



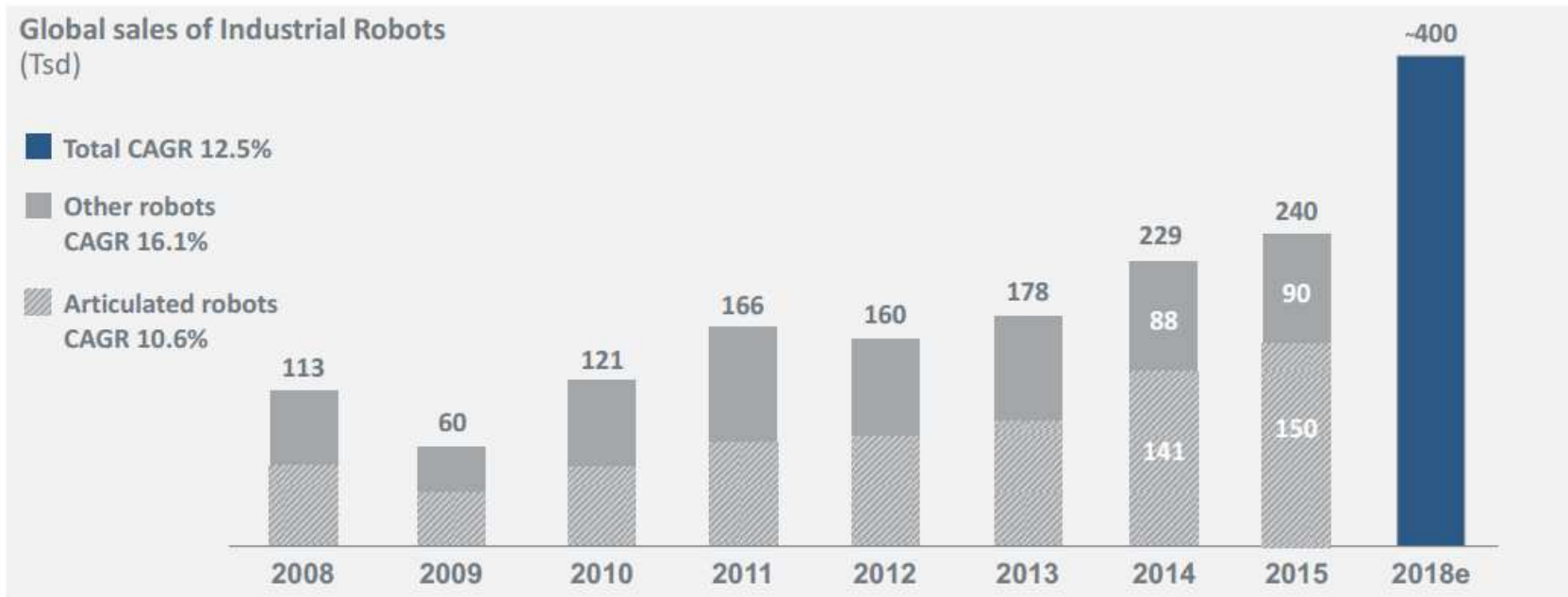
Robotics – Low robot penetration in General Industry and emerging markets



Source: IFR World Robotics 2014 (published September 2015)



Robotics – Global market of robots



Source: IFR World Robotics 2014 (published September 2015)



At home in every industry. In yours too.

Wood & furniture



Building materials



Metal products



Foundry



Plastics



Food



Aerospace



Medical



Automotive



Pharmaceutical & chemical industry



Paper



Injection molding



Research & testing



Machine tools



Electronics & solar



Entertainment



White goods & appliances



and many more...

Global megatrends shaping KUKA's present and future

Globalization



Digitalization and Technology

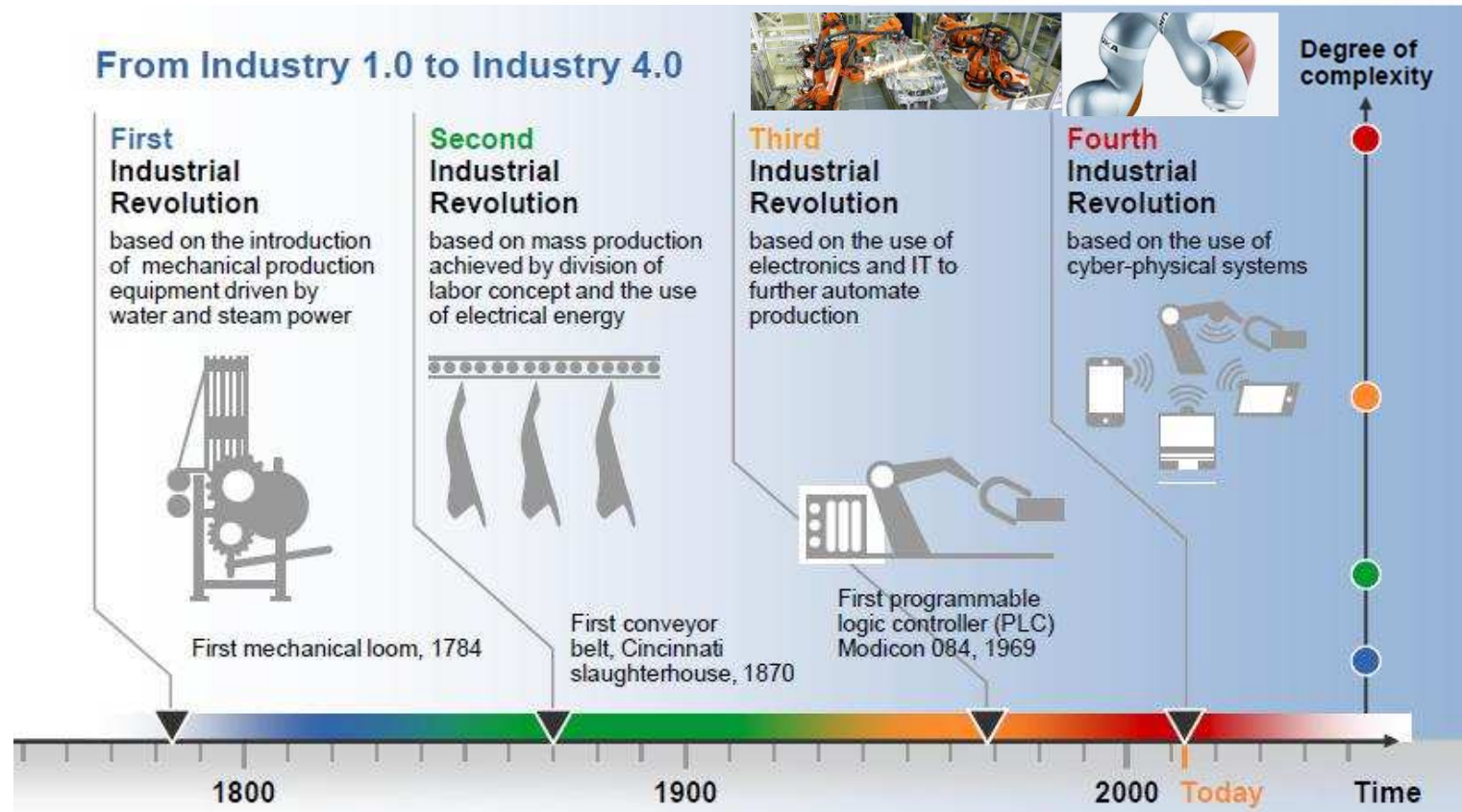


Demographics



Biosphere/Ecosystems







Typical Robotic Trends

- More flexible
- Easier to program
- Easy integration w/machines
- Safer
- Faster
- More accurate
- More energy-efficient
- Lighter
- Compact





Typical robotized assembly line



Assembly line for BMW rooftops, developed by KUKA Roboter Italia Spa (Solutions Division) in cooperation with LCS Automation, FESTO and other suppliers.

Kuka and Industry 4.0

- KUKA products actually **meet the requirements of Industry 4.0** and bring flexibility in the utilization of production capacity, in logistics, in the sustainable use of resources. KUKA achieves this by **merging the IT world and conventional high-tech industry solutions** into complete Cyber-Physical Production Systems (CPPS).
- With the newest member of the KUKA robot family – the **LBR iiwa** lightweight robot and the controller Sunrise **designed for direct cooperation between humans and robots** – KUKA now takes it a step further, offering products that are truly **“Industry 4.0-ready”**.
- Specific robot and system solutions are used to illustrate the three focal points of **mobility, control and human-robot-collaboration**. Here, it also becomes evident that the core of the **“smart factory” of tomorrow involves people rather than machines**.



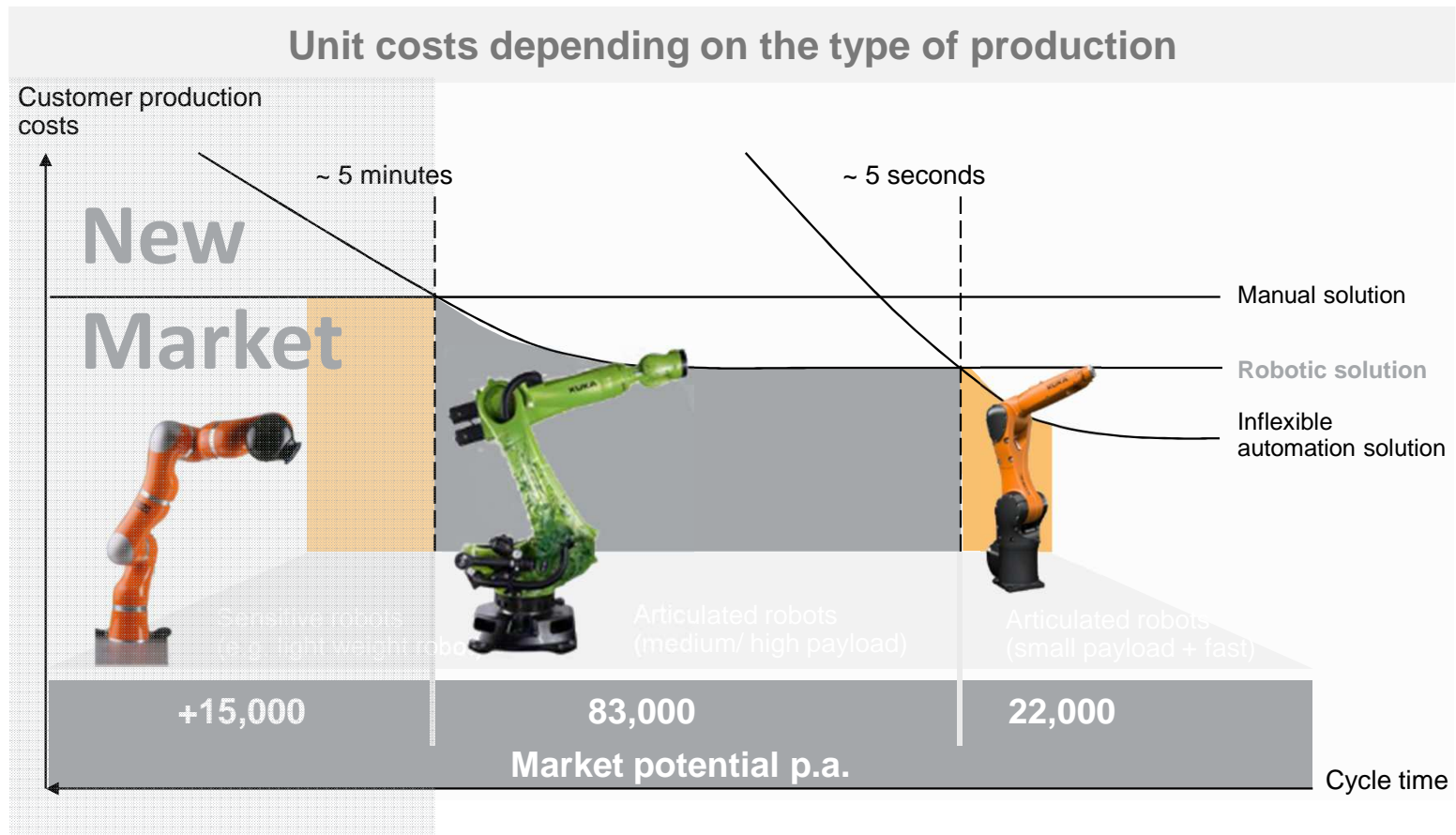


New manufacturing concepts – service & mobile robotics





Robot Market Volume



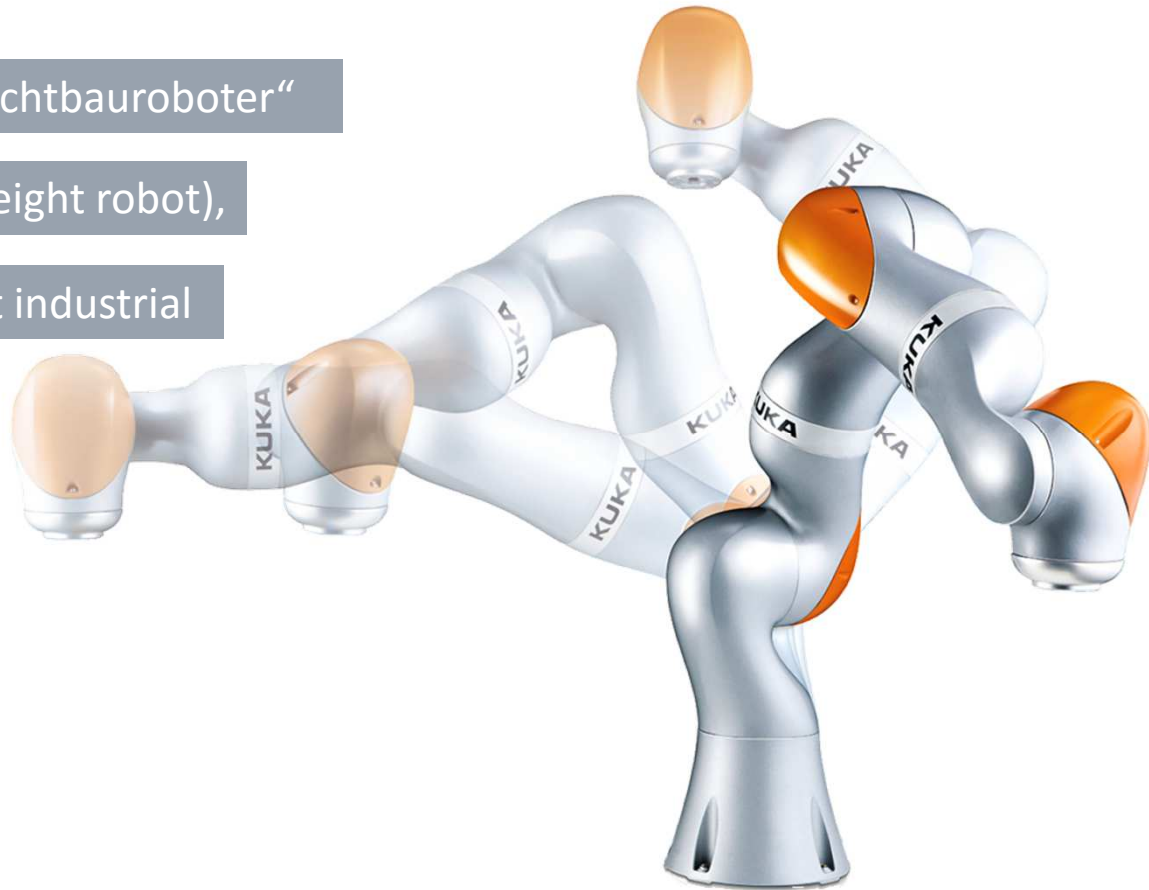
Il nuovo robot “sensitive” e collaborative KUKA LBR iiwa

LBR stands for „Leichtbauroboter“

(German for lightweight robot),

iiwa for „intelligent industrial

work assistant“.





DLR LBR 1 1993



DLR LBR 2

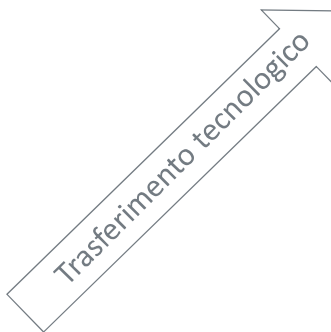
KUKA LBR 3 e LBR 4
Just for Research purposes



2005



DLR LBR 3 2001



KUKA LBR4+ 2009
Industrial feasibility studies



New Industrial “Service” Robot LBR iiwa features 1/2





New Industrial “Service” Robot LBR iiwa features 2/2





LBR iiwa – the Features

Teaching by demonstration [+]

Controller for sensor-based robotics [+]

Bionic motions using 7 axes [+]

Compliance mode [+]

[+] Mobility

[+] Safety

[+] Sensitivity

[+] Sensitive assembly processes



Screwing

Assembling

Machine auto.

Handling

Plugging

Other asse.

KMR iiwa



bertoloni@kuka.com

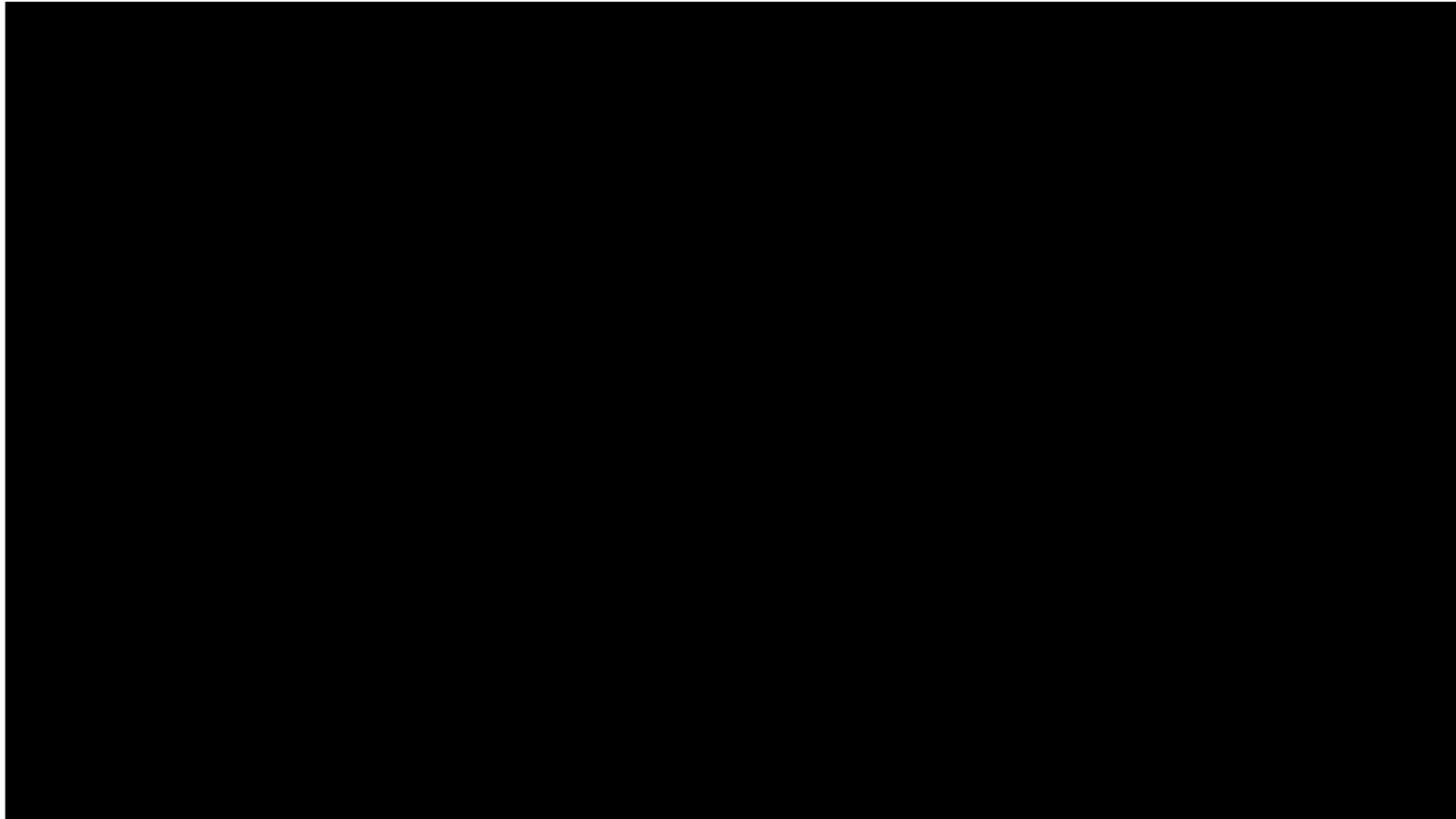


Assemblaggio sensitive e collaborative tramite l'impiego di robot LBR





Robotica Collaborativa e Mobile – LBR + KMR iiwa





Grazie per l'attenzione

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