KONECRANES®
Lifting Businesses™

TECHNOLOGIES: DIGITAL FROM THE CORE

CMD | Düsseldorf | Dec 14, 2017
Juha Pankakoski | EVP Technologies

TECHNOLOGIES

Our mission is to identify, develop and support the core technology that powers our products and processes.

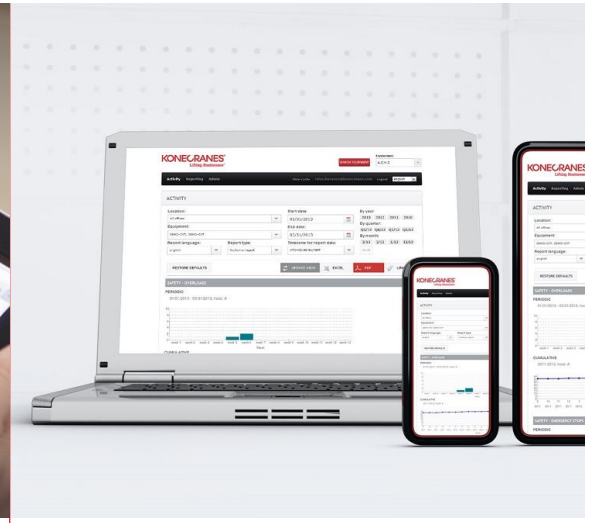
Our vision is to redefine the technology standards for lifting businesses. With pioneering technology and deep domain knowledge we create addictive products and services that improve the safety and performance of customers' processes.

TECHNOLOGIES ORGANIZATION

Knowledge Centers and Core of Lifting

Research, Innovation & Core Technology Development

Digital Platform Development



Information Technology

TECHNOLOGIES BY THE NUMBERS

250,000

Intelligent assets with control monitoring delivered and in use

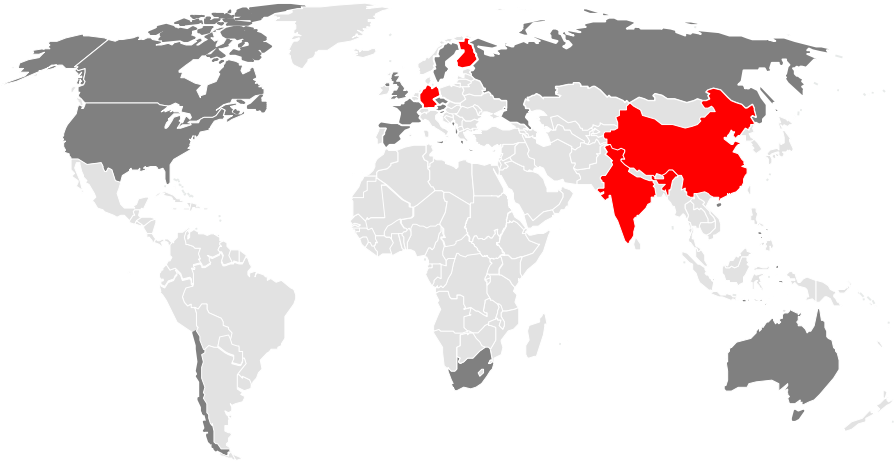
>800

Technology professionals

>2,300

Active or pending patents

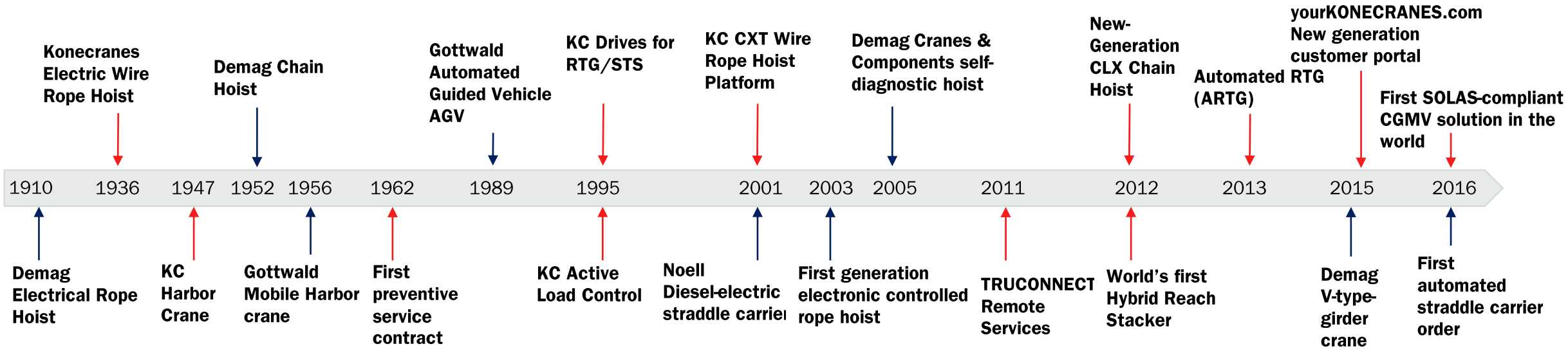
We are present in over **25** countries ...



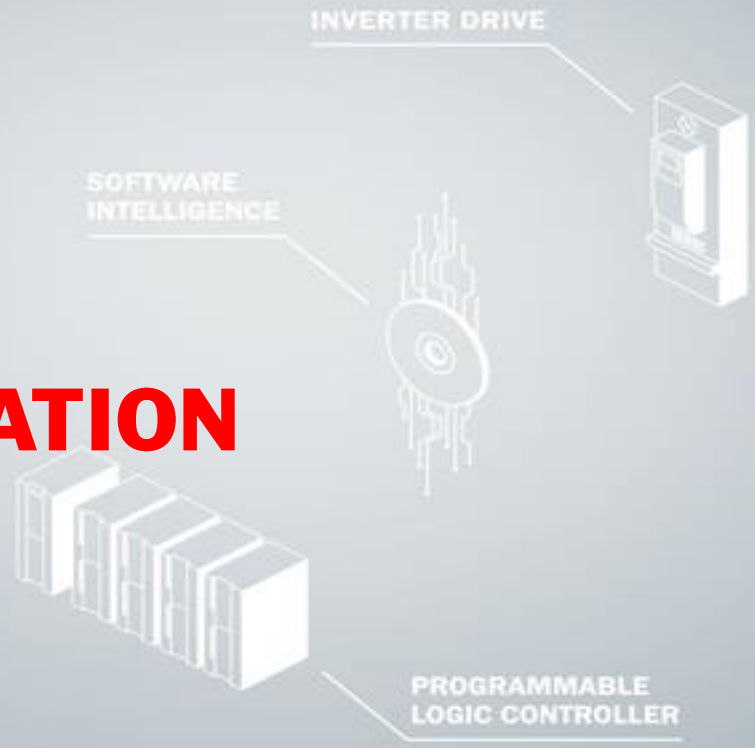
...having **4** key development centres.

WE HAVE A TRACK RECORD OF INDUSTRY-SHAPING INNOVATIONS FOR OVER A CENTURY

Innovation milestones

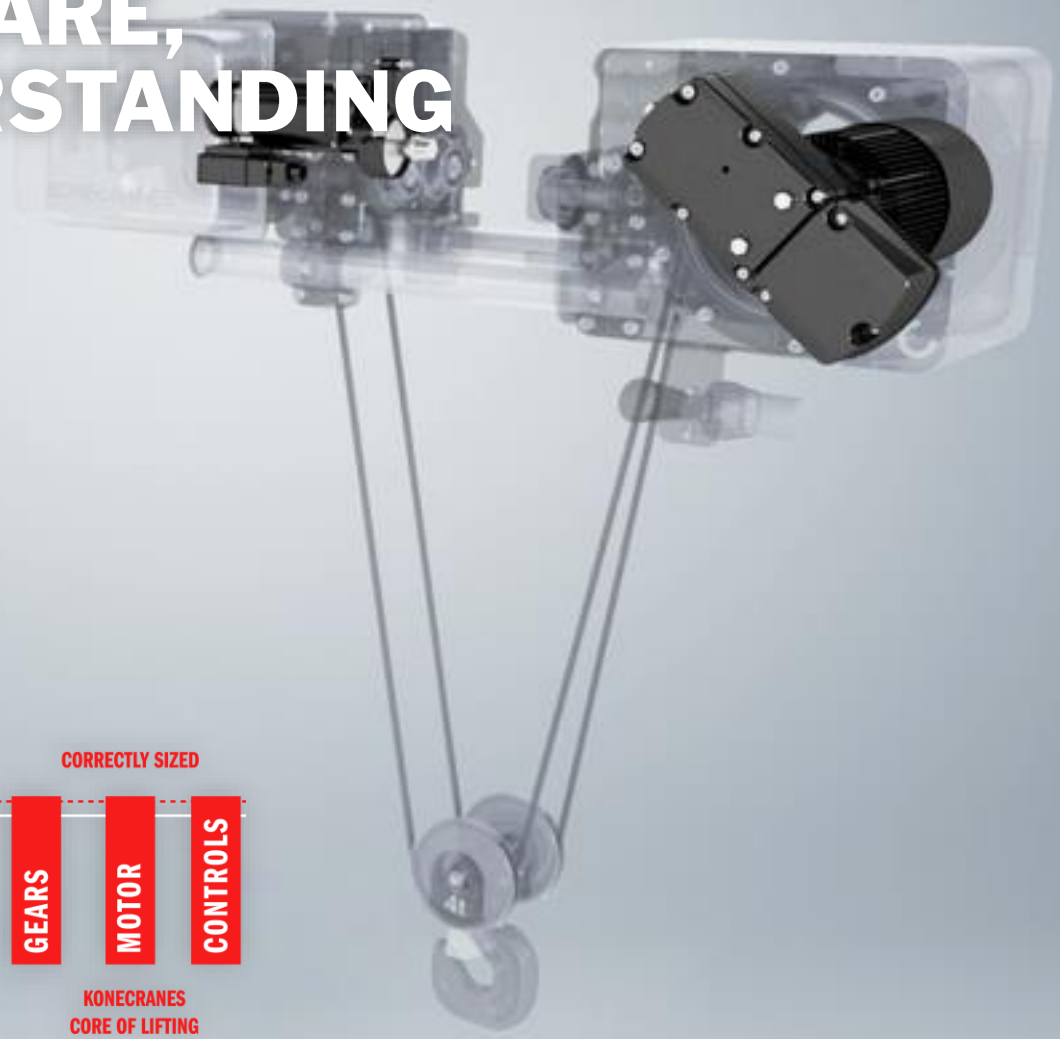


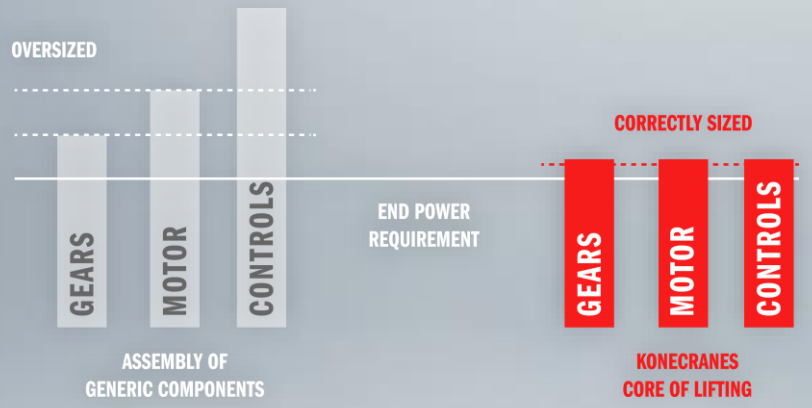
WHAT DOES IT TAKE TO CREATE THE NEXT GENERATION OF LIFTING?



EVEN IN THE AGE OF SOFTWARE, IT ALL STARTS FROM UNDERSTANDING THE HARDWARE

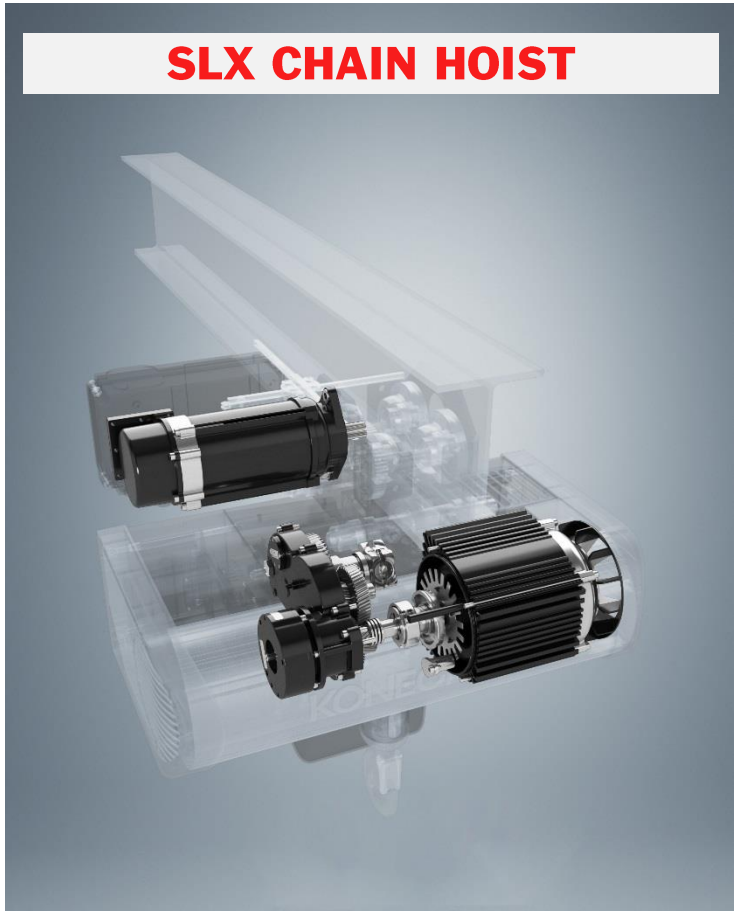
- Optimized componentry
- Optimal componentry
- Reliability and quality
- Systemic understanding
- Successful merge of software and hardware
- Access to and insight of massive data streams



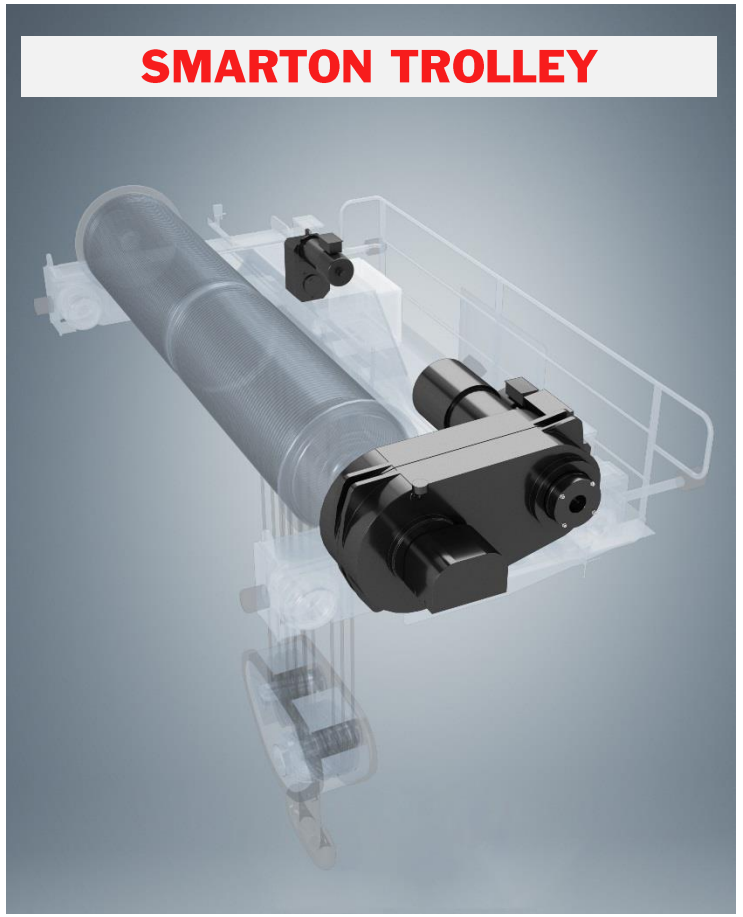


FROM SMALL HOISTS TO LARGE CRANES, LIFTING COMPONENTS **POWER THE CORE**

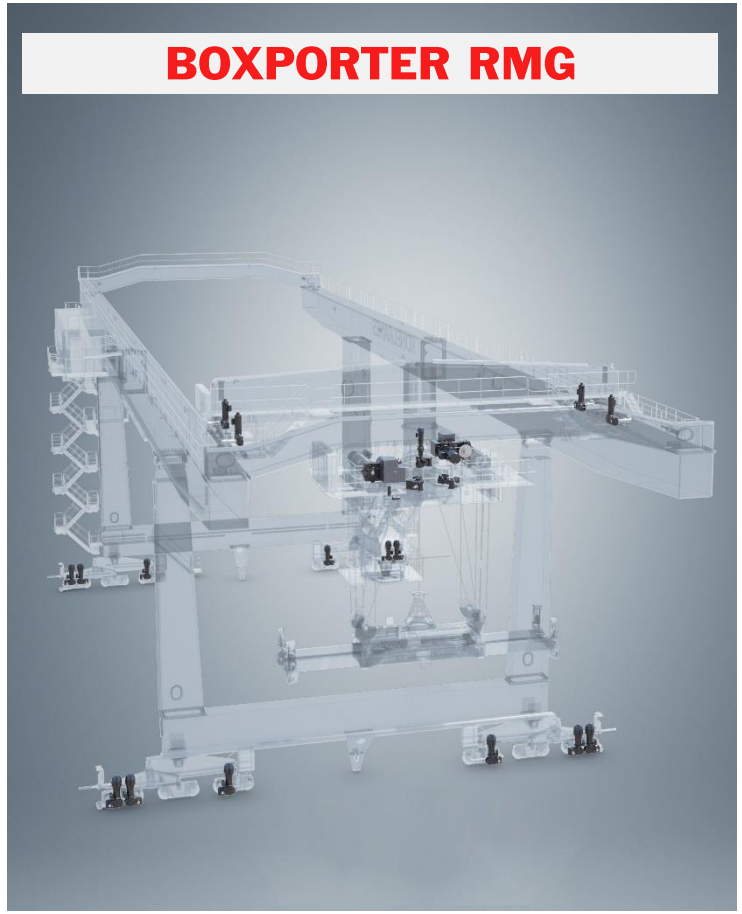
SLX CHAIN HOIST



SMARTON TROLLEY



BOXPORTER RMG



KONECRANES®
Lifting Businesses™

THE SOLUTIONS TO LIFTING THINGS WERE DISCOVERED LONG AGO

THE SOLUTIONS TO LIFTING BUSINESSES ARE CONTINUOUSLY EVOLVING

VOLUMES

SMART FEATURES

SAFETY
RELIABILITY
EASE OF USE
COST-EFFICIENCY

SMART PRODUCTS

ADAPTABILITY
PREDICTABILITY
PROCESS-AWARE
CONNECTIVITY

OPTIMIZED PERFORMANCE
ARTICIFIAL INTELLIGENCE
M2M INTEGRATION
E2E EFFICIENCY

SMART SYSTEMS

STANDARD LIFTING NEEDS

ADVANCED LIFTING NEEDS

KONECRANES®

WORLD-CLASS OPERATIONAL PERFORMANCE IS CREATED IN THREE KEY AREAS

OPTIMIZED & SIMULATED OPERATION

CONNECTED & DIGITAL PROCESSES

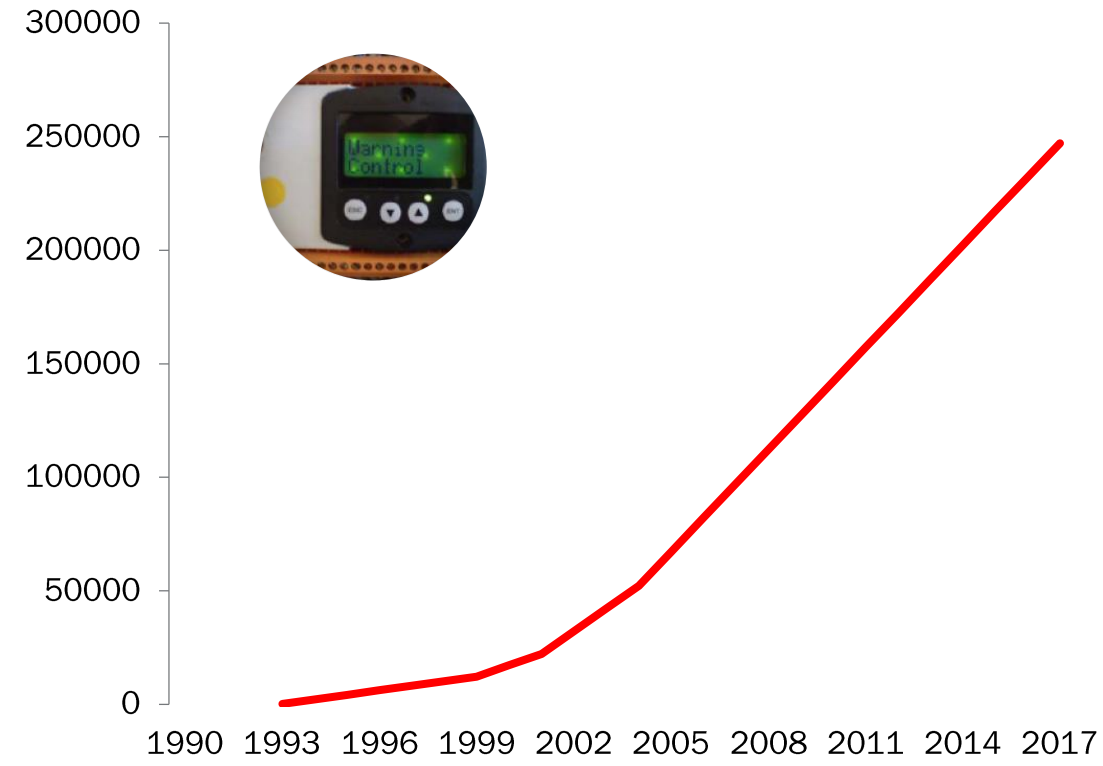
EFFICIENT & INTELLIGENT DEVICES

ALREADY A LONG HISTORY WITH CONNECTED DEVICES

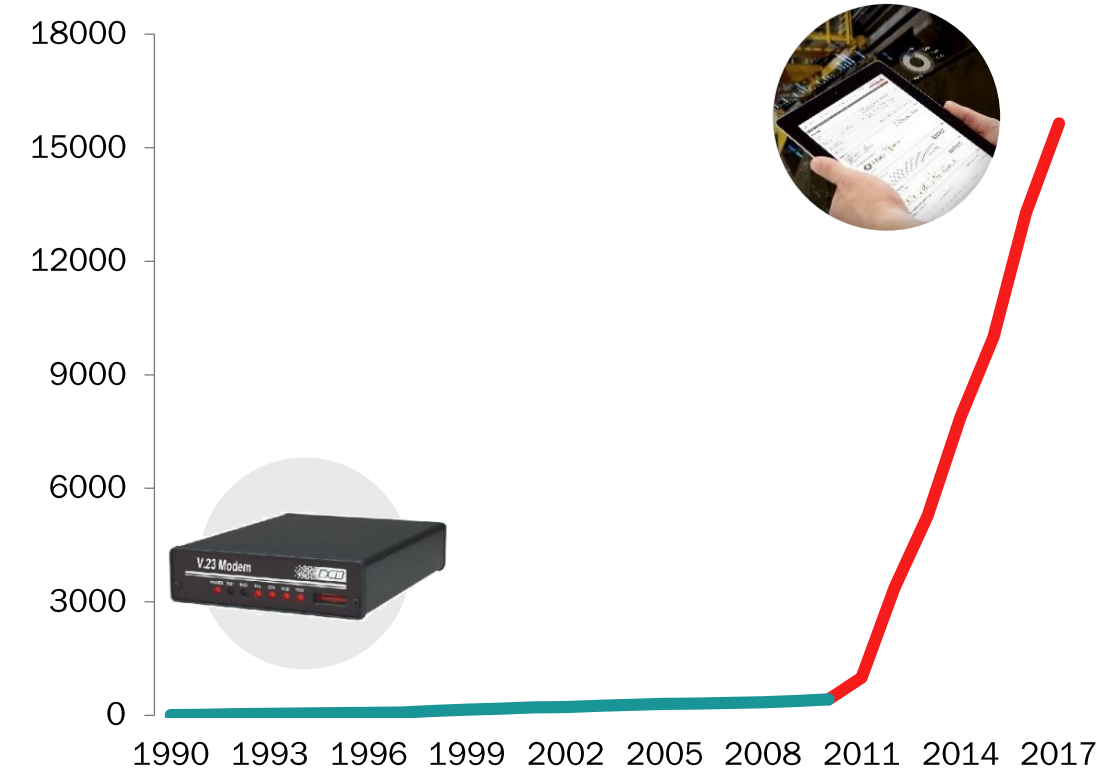
- Industrial Internet pioneer
- 2006 first Internet connected STS crane in Port of Kotka, Finland
- 2008 first Internet connected industrial crane in Kirkniemi paper mill in Finland
- Today approx. 16,000 connected devices
- Vast repository of data on the behavior of lifting equipment in both controlled and uncontrolled environment

DEMAND FOR SMART CRANES TOOK OFF 20 YEARS AGO, FOR CONNECTED CRANES 10 YEARS AGO

of equipment with control monitoring



# of equipment with connectivity



KONECRANES®

OUR DIGITAL SOLUTIONS ARE ALREADY LARGE SCALE, GLOBAL IMPLEMENTATIONS

TOTAL OF

16,000

CONNECTIONS

IN

40

COUNTRIES

TOTAL OF

32,000

USER ACCOUNTS

AT

14,000

CUSTOMERS

OVER

540,000

DIGITIZED SERVICE ASSETS

AT

54,000

LOCATIONS

WHY IS DIGITAL CRANE, CUSTOMER, AND ASSET BASE IMPORTANT FOR OUR FUTURE BUSINESS?

NOT ONLY BECAUSE OF BEING ABLE TO:

- Develop better, more cost-efficient products
- Provide safer, reliable, and predictable lifting devices
- Consult customers on more efficient material handling processes

BUT ALSO FOR RECEIVING

EMPIRICAL EVIDENCE OF CUSTOMER NEED IN REAL TIME, ACCURATE KNOWLEDGE OF CUSTOMER REQUIREMENTS

KONECRANES HAS THE MOST EXTENSIVE DATA REPOSITORY IN LIFTING INDUSTRY

Collected data is not just operational data that helps to design better products. It is also behavioral data – on products, customer businesses, and customer operations.

Konecranes position as the largest service provider in our industry places us in a unique spot in utilizing and benefitting from this data in developing our customer relationships.

ONLY PRODUCTIZED AND DIGITAL PROCESSES CAN CREATE USEFUL AND INSIGHTFUL DATA

MANAGEMENT

PRODUCT
From Idea to Solution

SALES
From Need to Order

MATERIAL DELIVERY
From Order to Invoice

SERVICE DELIVERY
From Order to Invoice

FINANCE

PEOPLE

NEW TECHNOLOGIES ARE CREATED WITH AN EXTENDED ECOSYSTEM

CO-CREATING WITH LARGE INDUSTRIAL AND SOFTWARE COMPANIES

COLLABORATING WITH UNIVERSITIES AND RESEARCH BODIES

INNOVATING WITH STARTUPS AND SME'S

EXAMPLES OF CURRENT PUBLICLY FUNDED RESEARCH PROJECTS

GAMA

”Solutions for safe mixed traffic of fully automated and manually driven vehicles in an enclosed port area.”

PRODUCTIVE 4.0

”Europe´s biggest research project in the field of digital industry, to maintain a leadership position in European manufacturing.”

OPTIMUM

“Developing optimized industrial IoT and distributed control platform for manufacturing and material handling.”

TECHNOLOGIES ARE CHANGING THE WAY INDUSTRIAL SYSTEMS ARE DESIGNED

- Advanced analytics for learning systems
- Device edge computing for reactive systems
- High-capacity, low-latency networks for machine-to-machine communication
- Autonomous devices for mixed-traffic environments
- Cyber-secure systems with segregated safety-related control zones
- Improved automation architecture for lifetime maintainability
- Micro-service product design for product enhancements after commissioning
- New automation opportunities for brownfield sites / equipment
- Use of AR for user assistance and training

THANK YOU.