One in four container movements around the globe is handled by a Kalmar solution.

15 June 2017

Antti Kaunonen
President, Kalmar
Contents

- Overview
- Industry trends
- APAC business outlook
- Introducing RHI/RCI
A global reach with personnel in 30 countries and sales and service in more than 100 countries.

People
5,700

Service staff
1,500

Presence
100+
countries

Assembly
Poland
China
USA
India
Malaysia
Sweden
Kalmar’s operating environment

**KALMAR**
Provides integrated port automation solutions including software, services and a wide range of cargo handling equipment.

**XVELA**
The collaboration platform serving the needs of ocean carriers, terminals and their shipping partners.

**navis**
TOS coordinates and optimises the planning and management of container and equipment moves in complex business environments.

Navis provides also maritime shipping solutions:
- Stowage planning
- Vessel monitoring
- Loading computer
- Route planning

**BROMMA**
Industry leading spreader manufacturer.
Kalmar business area solutions

Automation & Projects

Mobile Equipment

Services

Navis XVELA

Bromma

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Mega trends

Mega vessels
Efficiency demands increase as marine transport continues to grow. Larger ships require capacity improvements from port operators.

Sustainability
Strict emission requirements & growing concern for the environment increase the demand for more intelligent machines with smaller environmental impact.

Industry consolidation
New alliances between shipping lines are impacting container traffic flows and setting new efficiency standards for port operators.

Digitalisation & automation
Digital and automated solutions provide new possibilities for port operators to improve efficiency, safety and sustainability.
Kalmar strategy:
Focusing on profitable growth

To become number 1 automation and container handling solution provider in our industry.

Win in automation
Grow in software
Sustain global leadership in mobile equipment
Excel in services

Digitalisation
Operational excellence
People

Strategic target
Must-win battles
Key enablers
Kalmar has strong position in growing APAC market

Peter McLean
Senior Vice President, Kalmar Asia-Pacific
Container throughput growth accelerating

- The industry is picking up.
- APAC remains the dominating cargo house in the global market.
- The growth in Sri Lanka, Myanmar and Indonesia is promising, countries in South Asia are also on track.
- Singapore’s container throughput in April increased 7.5% y/y to 2.72 million TEU.
- Yantian Port in Shenzhen has potential be enlarged.

*y/y growth, Source: Drewry: Global Container Terminal Operators
The fastest growing regions in 2017 are South Asia, Central America and Middle East.

Volume-wise, these regions are still small compared to China (221 Mteu) and South East Asia (97 Mteu).

Container handling growth in China will be back to 3.0% to 3.5% by 2018.
# Market trend and key drivers in APAC

## Port Operations
- Driven by logistics demand and world trade – Containerization
- Port Automation: streamline operations planning and improve customer satisfaction
- Investments in greenfield projects in emerging markets
- Trends in upgrades in existing ports

## Logistics Centers
- Driven by logistics demand and world trade – E-commerce and Containerization
- Vertical integration: Terminal operators are expected to increase their influence throughout supply chains
- Terminal operators are trying to integrate more terminals in supply chains
- Shipping lines are acquiring container terminal assets worldwide
# Market trend and key drivers in APAC

## Road & Rail Transportation
- Driven by industrialization of all Asian countries
- Railway expansion and hinterland development by China and ASEAN countries – OBOR
- PSA leaps into China’s intermodal rail network

## Manufacturing Industries
- Driven by industrialization of all Asian countries
- Consolidation globally
- Investments in emerging markets/ low cost countries
- Outsourcing of all material handling activities – 3rd Party logistics
- Focus on uptime of the machines
- Driver interface / customer application

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Win in automation
Focus projects in Australia. Instill automation thought leadership across APAC.

Service growth
Initiatives in place and service culture mindset to develop Ecommerce roll-out by end of 2017.

Sustain leadership in mobile equipment
APAC market share of reachstackers above target.

People development
GROW program to be rolled out in APAC to develop leaders of tomorrow.
Automation: The Future of Port Operations
Success in automation

- Terminals are looking for different types of automation
- Greenfield projects = New automated terminals, expansion of current automated terminals or conversions of existing manual operations
- Brownfield projects = Automating existing manual operations
  - Development in early phase
  - Existing straddle carrier terminals & RTG terminals
- Successful cases in Australian market
“Through Kalmar, we will be able to leverage their knowledge and experience from similar automation projects throughout the world and get an integrated system comprising the equipment TLS from Kalmar and the terminal TOS from Navis. We believe that this approach to use a key partner for equipment and software services will help us optimise the operational performance for the future.”

Christian R. Gonzalez
ICTSI head of the Asia-Pacific region

Case example:
Greenfield automation terminal VICT, Melbourne, Australia
VICTL
Melbourne, Australia  (Completed in 2017)

Terminal setup:
- Greenfield, fully automated
- ASCs and AutoShuttles™
- Phase 1 - 600,000 TEU

Equipment & software
- 12 Kalmar ASCs
- In Phase 2, 8 ASCs more in delivery
- 11 Kalmar AutoShuttles™
- Kalmar TLS
- Kalmar Automated Truck Handling
- Navis N4 TOS
- System Integration Services

Comment
The ability to integrate and link several components into a one seamless process brings true value to the customer. As a system integrator, Kalmar provides a solution, all the way from the TOS, TLS automation, software, equipment, services and consulting to the integration services that bring an automated terminal together.

“Through Kalmar, we will be able to leverage their knowledge and experience from similar automation projects throughout the world and get an integrated system comprising the equipment TLS from Kalmar and the terminal TOS from Navis. We believe that this approach to use a key partner for equipment and software services will help us optimise the operational performance for the future.”

Christian R. Gonzalez
ICTSI head of the Asia-Pacific region
AHTS with Autoshuttles
Fully decoupled container handoffs under STS and ASC ensures best STS productivity with highest utilization of the equipment.

STS operation
- Remote controlled STS with semi-automated functions
- Automated twistlock handling using ALP
- OCR for container ID recognition
- Exclusion between STS and Autoshuttles

ASC stacks
- 2 crane ASC blocks
- Access Control System that ensures safety of the personnel
- Own inventory database

Gate operation
- OCR for container ID recognition
- RFID identification and/or LPR

N4 TOS
- Holistic optimization functions
- Automatic yard planning
- Automatic vessel/berth planning

Landside operation
- Automated truck handling using Kalmar ATH
- Remote control needed only for exception handling

TLS
Integrated fleet management solution for ASC and Autoshuttles

Data Centre for IT Systems

Data Centre for IT Systems
China: Where the Opportunities Are
China Eyes on Logistics Industry Development

- The logistics industry grew steadily last year amid industrial restructuring.
- The total value of social logistics goods in 2016 expanded by 6.1 percent year-on-year to 229.7 trillion yuan (about $33.2 trillion).
- China will encourage more logistics development in the next five years to bolster economic growth and deepen supply-side reform.
- By 2020, 150 transportation hubs and 3,000-kilometer railway and highway lines connecting with key ports in China.
The Latest Wave of Alibaba

- Alibaba established Cainiao Logistics Company – an asset-light, smart and data-driven logistics network company.
- Alibaba and Malaysia will set up a logistics and e-commerce hub in the SE Asia.
- Alibaba concluded a cross-border e-commerce cooperation agreement with the world’s largest logistics network, WCA Ltd.
- Alibaba joints hand with KUEHNE+NAGEL (K+N) to offer leading e-commerce logistics solutions to China based shippers.
China: One Belt-One Road (OBOR) initiative

Projects completed and planned: December 2015

Projects subsumed under OBOR by the Chinese authorities:
- Proposed economic corridors
- Gas pipelines: existing, planned or under construction
- Railways: existing, planned or under construction
- Oil pipelines: existing, planned or under construction
- Ports with Chinese engagement: existing, planned or under construction

Source: Merits, December 2015
## Kalmar’s competitive position in China

1. **Well established brand**

2. **Leading player in Empty Container Handler and Reachstacker markets**

3. **Strong and extensive agent and distribution network**

4. **Strong and comprehensive service support**

5. **Manufacturing capabilities advantage with Shanghai factory & RCI**

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Our winning strategy in China

- Expand sales coverage - develop hybrid model
- Expand service capabilities
- Key account management – Regional
- Manufacturing capabilities and support to develop future products
- Intermodal market: opportunities for Reach Stackers
Dealer Network

- **5 BU** – North East & North China (NC), East China (EC), South East (SE), South China (SC), Hongkong (HK)
- **9 Branch** – Beijing, Tianjin, Dalian, Shanghai, Ningbo, Xiamen, Shenzhen, Zhongshan, HK

45 Partners

- Yingkou Shenglong
- Yantai Haotong
- Qingdao Wkmar
- Henan Zhongcha
- Suzhou Hefeng
- Zhangjiagang Mudan
- Shanghai Anhe
- Shanghai Ruiaoh
- Shanghai Deqin
- Shanghai HLD
- Shanghai Xinjinling
- Ningbo Beilunzhai
- Wuhan Lizhijie
- Shenzhen Lizhijie
- Chongqing Gu’ante
- Chongqing BND
- Hunan Nansheng
- Xiamen Golink
- Xiamen Yunshunjie
- Kalmar
- Dealer location

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Our winning strategy in China

- Expand sales coverage - develop hybrid model
- Expand service capabilities
- Key account management – Regional
- Manufacturing capabilities and support to develop future products
- Intermodal market: opportunities for Reach Stackers
Kalmar Manufacturing facility in Shanghai
Cargotec Industries (China) Co. Ltd. (CICL)

- Total land area 50,000m²
- No. of employees 170
- Certificates ISO 9001 | ISO 14001 | OHSAS 18001
Our winning strategy in China

- Expand sales coverage - develop hybrid model
- Expand service capabilities
- Key account management – Regional
- Manufacturing capabilities and support to develop future products
- Intermodal market: Opportunities for Reach Stackers
RHI - JIANGSU RAINBOW HEAVY INDUSTRIES CO., LTD.

Wujian
Chairman of Rainbow Group
General Manager of RCI
RHI is a professional heavy equipment provider.  
RHI is located in Nantong and established in 2003.  
RHI is listed at SZSE since 2010, stock code “002483”.  
RHI is the strategic partner of Cargotec in China.
Group members

Jiangsu Rainbow Heavy Industries Co., Ltd. (RHI) Founded in Sep. 2003

High-end equipments

Material Handling Business (MH)

Offshore & Marine Business (OM)

Energy-saving & Environmental

100%
RHM Founded in Mar. 2007

JPC Founded in Apr. 2012

RCI Founded in May. 2012

100%
RHP Founded in Jun. 2012

Runfin Technology Oy. 2015

100%
RCC

TRH Founded in Mar. 2015

ROC Founded in Jan. 2011

RMC Founded in Feb. 2014

55%
GWE, joined in July 2016

ZJHJ, joined in Oct. 2016

Lason, joined in May. 2015

3.17%
GSSG, joined in Nov. 2015

TRH

RHM

RHG

RHP

RCC

RMC

RET

RHI

JPC

RCI

100%

100%

TRH

ROC

RMC

RET

RHG

100%

100%

GWE

ZJHJ

Lason

GSSG
We have established long-term strategic partnerships with Cargotec Group (Finland), Rio Tinto Group (Spain), Ulstein Group (Norway), IHC Group (Netherlands), AG Group (Indonesia) and other world famous enterprises.

RHI is the strategy partner of Cargotec, which has long-term cooperation relations:

1. RHI provide the products to Cargotec since 1999;
2. RHI/Cargotec built one joint venture (RCI) in 2012.
3. Cargotec is one of RHI owners, which holds 7.87% share;
Rainbow-Cargotec Industries Co. Ltd. (RCI) is a joint venture of Rainbow and Cargotec.

The company is authorized to produce both Kalmar and GENMA products for international and China markets respectively.
## Joint Venture

### Rainbow contributions
- Production knowledge
- Access to local labour
- Strategic location
- Access to some local customers
- Chinese brand
- Access to local government

### Cargotec contributions
- Technology know-how
- Customer’s business knowledge
- Proven routes-to-the-market
- Access to global markets
- Global brands
- Company image and recognition

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**Competitive solutions for Chinese and global markets**
About RCI

- Date of establishment: 18 May 2012
- Business period: 50 years
- Location: Taicang, China
- Total land area: 450mu
- Water front: 365m
- Gross investment: 182 MEUR
- No. of employees: 348 (as of Dec 2016)
- Annual production capacity

<table>
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<th>RTG</th>
<th>STS</th>
<th>RMG &amp; ASC</th>
<th>AHC</th>
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No. 1 in RTG by 2018

No. 2 in STS in long term

Enter RMG market in 2017
Phase I: Workshop and offshore testing foundations – occupied about 25% of the total land area
Phase II: Jetty – opened in early 2017
Phase III: RTG & STS production site – will be opened in Aug 2017 (est.)
Phase IV: ASC & RMG production site – construction will be commenced in Sep 2017.
Phase II – RHP Jetty

- The jetty can berth vessels of up to 50,000 DWT capacities
- It is 361m long, and the water depth is 12m
- Besides RCI products, it also capable of handling cargos, steels, windmills, heavy machines and equipment for other global customers.
Safety is the 1st Priority

SAFETY FIRST

ZERO Incidents
Our Achievements

- Flat organisational structure; fast decision making
- Shorten the delivery time to 9 months
- All RTG orders (238 in total) handed over to customers on time, and in good quality
- Localised the engineering, production and components sourcing processes which improved the profit a lot
- Zero incidents
Making your every move count
Appendix
DP World
Brisbane, Australia

Terminal setup:
- Brownfield - conversion from a reachstacker operation
- ASCs and manual shuttle carriers
- 2 cranes per block
- 900,000 TEU

Equipment & software
- 16 Kalmar ASCs
- 14 manned Kalmar Electric Shuttle Carriers
- Kalmar TLS
- Kalmar Automated Truck Handling
- Navis N4 TOS

Comment
The competitive environment at the Port of Brisbane became tougher with the arrival of a third stevedore in 2012. DP World Brisbane realised that it would have to make more effective and efficient use of terminal space while maintaining the highest standards of safety, and comply with maritime transport security regulations and customer service.

“Ultimately, we felt that a combination of ASCs and shuttle carriers would not only provide the best financial return on investment, but also the highest level of waterside productivity.”

Mark Hulme
COO, DP World Australia
Automation Projects in Australia

Patrick Terminal
Brisbane, Australia

Terminal setup:
- Capacity 800 000 TEU
- AutoStrad terminal

Equipment & software
- 27 Kalmar AutoStrads™ – 3-high
- In-house TOS
- Kalmar RTCS (Real Time Control System)

Comment
The unmanned Kalmar AutoStrads™ can operate 24/7 in almost any weather conditions, ensuring smooth flow of cargo and significant cost savings.

Patrick’s work force has decreased drastically; as today a crane gang of only four people is needed to operate a ship-to-shore crane and the yard and stacking area.

The transition to automation can be done quickly and at low cost.

“We went 12 months without a single lost time injury among our 160 employees.”

Matt Hollamby,
Brisbane manager, terminals division, Patrick

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Automation Projects in Australia

Patrick Terminal
Sydney, Australia

Terminal setup:
- AutoStrad terminal

Equipment & software
- 44 Kalmar AutoStrads™ – 3-high
- Radar-based navigation system
- In-house TOS
- Kalmar RTCS (Real Time Control System)
- Kalmar Care service contract

Comment
The whole process can occur overnight and without the need for expensive overhead lighting – AutoStrads do not need to see to navigate. They use 20 per cent less fuel and incur lower maintenance costs.
And when there’s a rush on – for instance, when a bunch of truck drivers arrive to take containers away – the algorithm that controls the AutoStrads will redirect them from other tasks to focus on the most pressing job.

“This is fully automated, there are no human beings, literally from the moment this truck driver stepped out of his cabin from then onwards this AutoStrad will take it right through the quay line without any humans interfacing at all.”

Alistair Field
Managing director of Patrick Terminals and Logistics
China Import and Export Volume

Source: China Customs Statistics

Billion (RMB)
China’s Manufacturing Purchasing Managers Index (PMI)

50% = Same as the previous month

- National Bureau of Statistics of China
- Markit and Caixin China PMI

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China’s Non-manufacturing Purchasing Managers Index

%  50%=Same as the previous month

National Bureau of Statistics of China
Markit and Caixin China PMI
RHI - JIANGSU RAINBOW HEAVY INDUSTRIES CO., LTD.
Product Line

Offshore Supporting Vessels

- PSV (Platform Supply Vessel)
- AHTS (Anchor Handling & Tug Supply Vessel)
- IMR (Subsea Inspection, Maintenance and Repair)
- Accommodation Barge
Product Line

- Side Rolling types
- Lift-Away types
- Hydraulic folding types
- Lifeboat davit
Product Line

Shipyard/yard/Factory Handling Solutions (G1)

- Gantry Cranes
- Overhead Cranes
- Metallurgy Cranes
Offshore engineering solutions

(G2)

- JACK UP System
Product Line

- E.P.C in mining material/ grain/chemic/cement industry
- Material processing/ storage equipment
Product Line

- Mobile Harbor Crane
- Mobile Hopper
- unloader
- Material Storage
- Convoyers
Product Line

- PSH Elevating & Sliding Parking System
- PPY Sliding & Elevating Parking System
- PJS Mini Mechanical Parking System
- Tower Type PSH Elevating & Sliding Parking System