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2015

McCormick Place South | Chicago

March 23-26, 2015

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Falling Barriers to Automation in North America

Sponsored by:

miebach



the supply chain engineers

Presented by:

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Manager**

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Increasing Number of Requirements on the Supply Chain



Rise in eCommerce



Demand for shorter lead times



Smaller more frequent orders across all channels



Growing number of returns



Customers wanting specialization to items



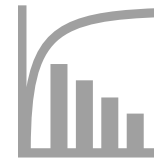
Product extension outside of core products
Limited edition items with shorter life cycles



Omni-channel distribution

Shorter throughput times

Increased VAS requirements from customers



Increased Pressure on Distribution Facilities



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Increasing Favorability of Conditions for Automation



Labor: Simultaneous Increase in Rates and Limited Availability



Costs: Price of automation is becoming more and more affordable



Land: Cost of land – especially near urban centers - is becoming more expensive



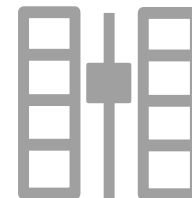
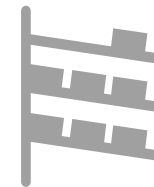
Capacity: Sites are having more and more throughput requirements placed on them and green space is limited



Quality: Increased focus on improving quality by shortening lead times and improving accuracy



Integration : Improved and more sophisticated concepts even in ongoing operations



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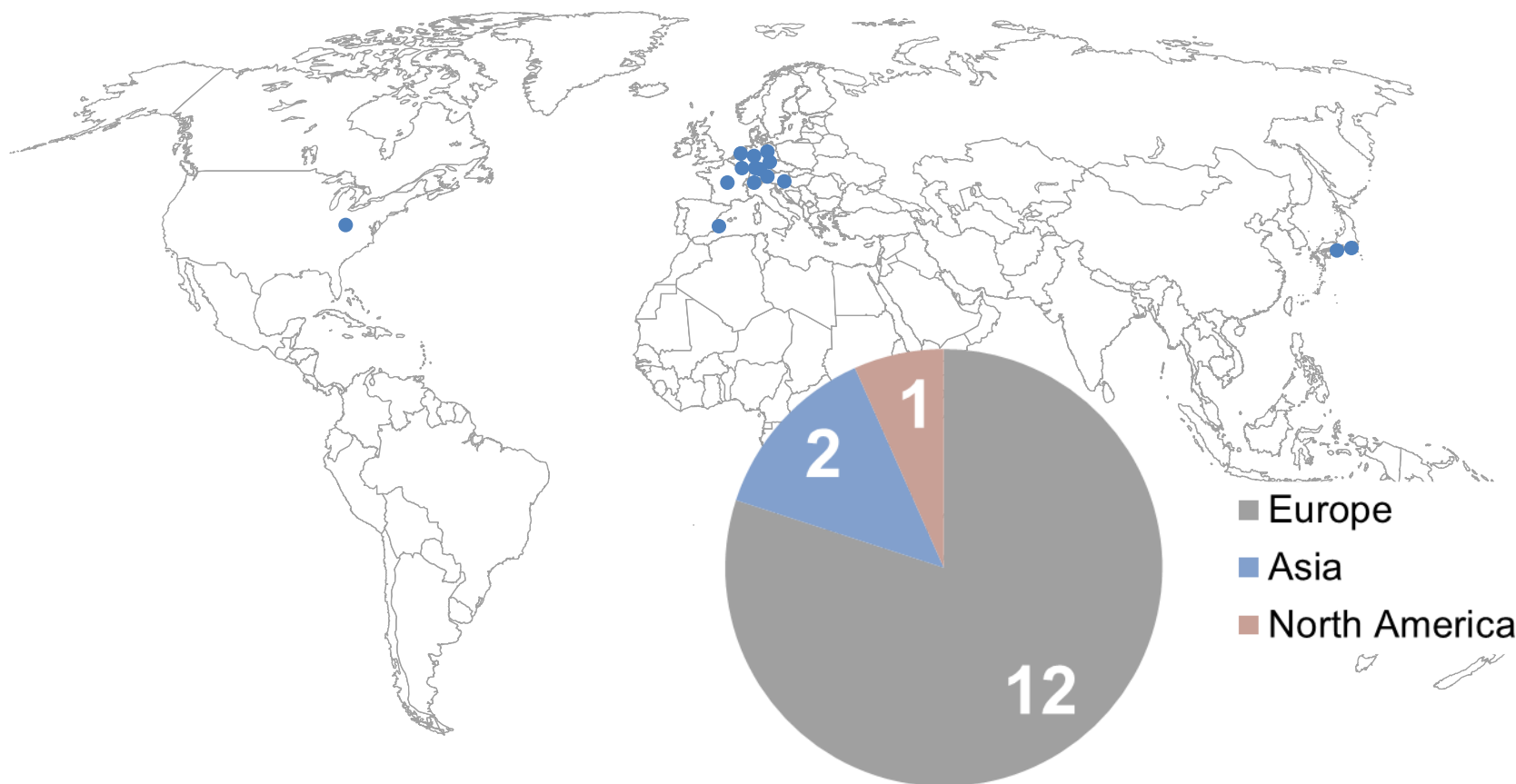
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Greater Penetration of Automation Outside North America: Location of 15 Largest MHE HQs





The Drivers and Processes for US and European Operations Have Grown Similar Over the Years

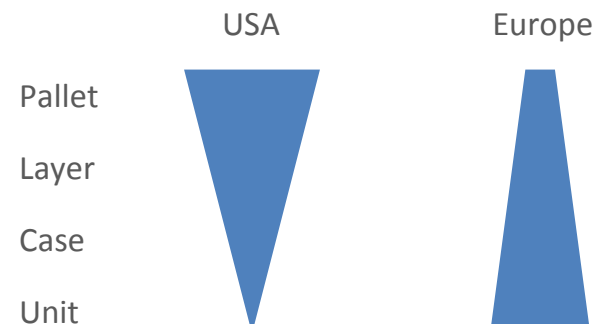
Comparison of Picking Needs Based on Country

- Historically Europe has always has a history of smaller order quantities
 - Population Density
 - Store Size Constraints
 - Need for Higher Case and Unit Picks
- US facilities are now facing the same design requirements that Europe has previously
 - Rise in eCommerce
 - Demand for shorter lead times
 - Smaller more frequent orders across all channels
 - Customers wanting specialization to items
 - Limited edition items with shorter life cycles
 - Shorter throughput times
 - SKU proliferation

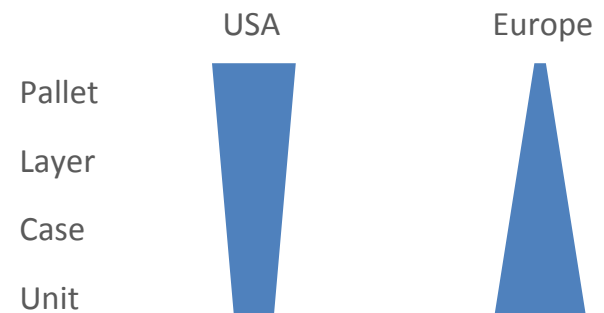


With the move to similar business requirements, best practice strategies, and processes, technologies are starting to penetrate the US market

Average Picking Profile 20 Years Ago



Average Picking Profile Now





In Parallel – Barriers to Automation in the US Have Been Lowered

Criteria	Status
Suppliers	<ul style="list-style-type: none"> Moving operations to the US. Started with spare parts and many have been establishing US manufacturing facilities
Approach to Evaluation	<ul style="list-style-type: none"> Europe has had greater weight on qualitative criteria more so. US companies had chiefly been focused on ROI and NPV but this culture is shifting.
Information Technology	<ul style="list-style-type: none"> Previous integration between ERP / WMS / WCS a concern and potential roadblock Now interfaces much more common and typically just a bullet point in the project plan
MHE Costs	<ul style="list-style-type: none"> Increased commonality of systems causing price pressure Manufacturing capability increasing in the US is also lowering costs and lead times.
Land and Labor	<ul style="list-style-type: none"> Labor availability becoming a concern Higher land costs close to urban centers and in logistic hot spots Companies becoming adverse to land acquisition
MHE Innovation	<ul style="list-style-type: none"> EU still remains the leader in MHE innovation with the amount of HQ and R&D facilities there Enables proof of concepts before technology or applications are brought to the US



How to Evaluate if the Compelling Technologies on the Show Floor Make Sense



Utilization

- No limitation on work hours
- Able to balance peaks



Throughput:

- Allows for increased productivity for longer hours



Footprint:

- Total area for the facility and necessary surroundings



OPEX

- Running costs from the investment
- Running costs for personnel



Capacity:

- When there is limited area for the building available



Space and Expandability:

- Ability to expand (increase of volumes, throughput, etc)
- Improved space utilization



Quality:

- Shorter throughput times and better (earlier) cut-off times
- Less damage and errors due to human interaction



Information Flow

- Improved flow and transparency
- Increase in tracking points to improve visibility
- Improved inventory accuracy



Environment:

- Environment friendly technologies, CO₂ footprint, technologies with low energy consumption, ...
- "Dark" Facilities



Safety

- Tasks that are dangerous or extremely strenuous
- Improve ergonomic conditions
- Reduce workers comp.

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What Are the Drawbacks to Evaluate in Order to Make a Decision?



Cost:

Automation is still a large upfront capital expenditure



Timing:

Systems take more time to design, produce, install, and reach full performance



Installation

Having to install within ongoing operations can be prohibitive



Complexity:

Automated systems are inherently more complex – which adds risk to design and maintenance



Expertise

Increased technology requires certain experience and training for managers, operators, and maintenance



Maintenance

Increased costs to store spares and maintain



Information Systems:

More IT systems add to complexity concerns with increased number of interfaces



Flexibility:

Some applications reduce flexibility by some measures



Procurement

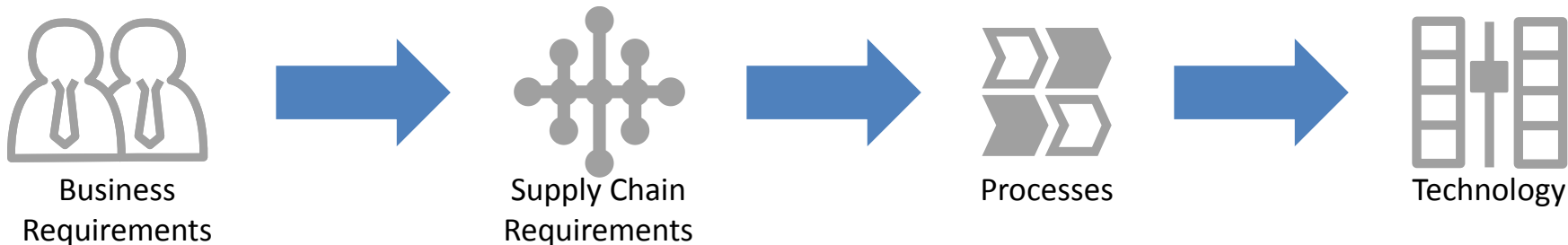
Greater effort in finding supplier and defining warranty, handover, availability



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Automation is a Tool Not the Answer: But the Lower Barriers are Making the Transition Easier



Processes Come First and are Becoming Standardized

- Increasing similarities between the design requirements between EU and USA
- Means strategies and concepts having been developed and refined in Europe are easily transferred to US designs
- Able to leverage the knowledge, experience and best practices from leading European operations

Recommendation of Technology Follows and the Traditional Barriers are Lowering

- European MHE companies are expanding service and operations in the US as these processes continue to harmonize
- Changing land and labor conditions are supporting business cases with automation
- Need for throughput and accuracy are increasing company's weighing of qualitative advantages



Key Takeaways

- Increasing pressure on the supply chain is creating an environment for processes favorable for automation
- Historically conditions have been more favorable to automation outside North America
- In parallel to the favorable conditions – previous barriers have been coming down
- Keep in mind the qualitative and qualitative criteria for comparison between types of technologies
- Still significant drawbacks to automation which must be taken into account
- Remember: without good processes and flows – no technology will be the right one for your supply chain needs

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