

Falling Barriers and Trends with Automation in North America

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Presented by:

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Increasing Number of Requirements on the Supply Chain



Rise in eCommerce

Shorter lead times



Smaller more frequent order



Customers wanting specialization

Growing returns



Product extension outside of core



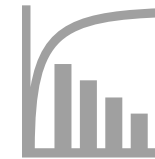
Limited edition items with shorter life cycles



Omni-channel distribution

Shorter throughput times

Increased VAS requirements



Increased Pressure on
Distribution Facilities



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

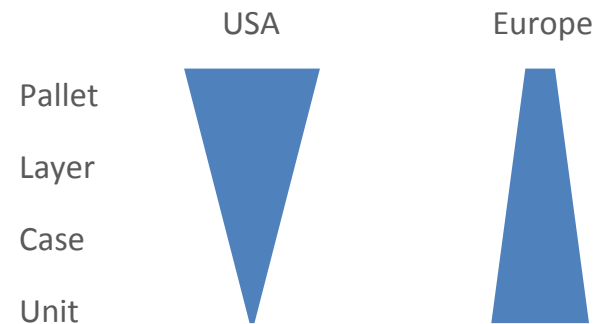
Comparison of Picking Needs Based on Country

- 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
 - Customers wanting specialization to items
 - Limited edition items with shorter life cycles
 - Shorter throughput times
 - SKU proliferation

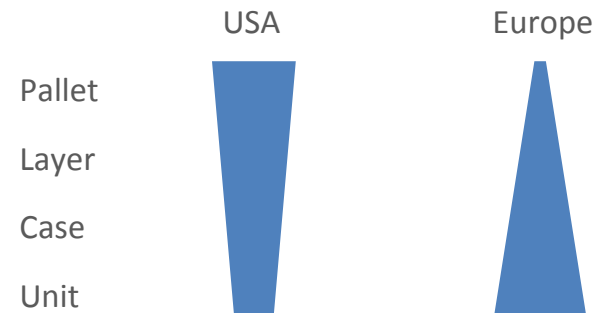


Best practice strategies, and processes, technologies are penetrating the US market

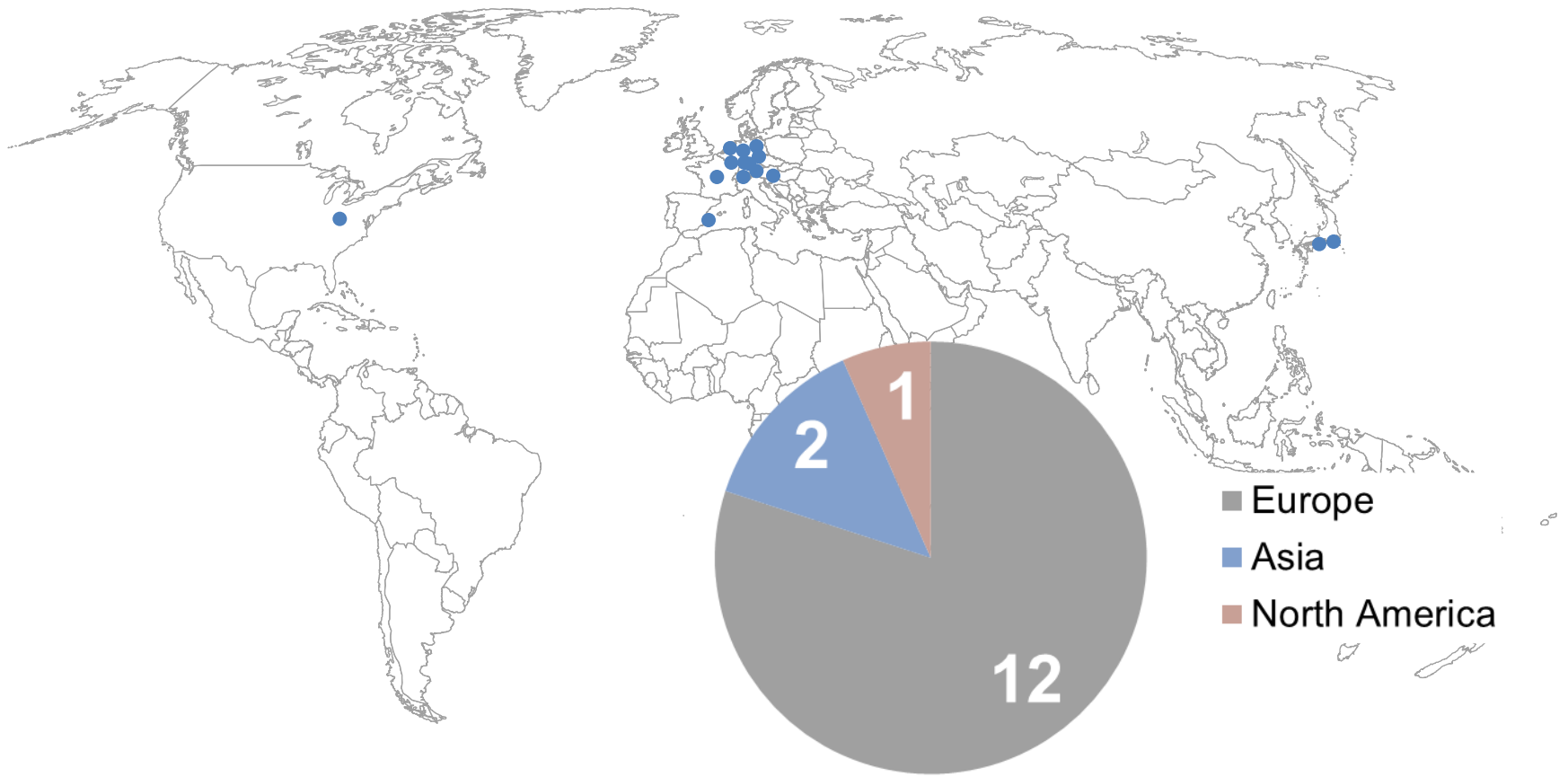
Average Picking Profile 20 Years Ago



Average Picking Profile Now



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



Increasing Favorability of Conditions for Automation



Labor: Increase in Rates and Limited Availability



Costs: Price becoming more affordable



Land: Cost of land is becoming more expensive



Capacity: More and more throughput requirements



Quality: Increased focus on improving quality



Integration : Improved and more sophisticated concepts



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:

- Environmentally friendlier



Safety

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



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



Cost:

Large upfront capital expenditure



Timing:

More time to design, produce, install, and reach full performance



Installation

Having to install within ongoing operations can be prohibitive



Complexity:

Inherently more complex – which adds risk to design and maintenance



Expertise:

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

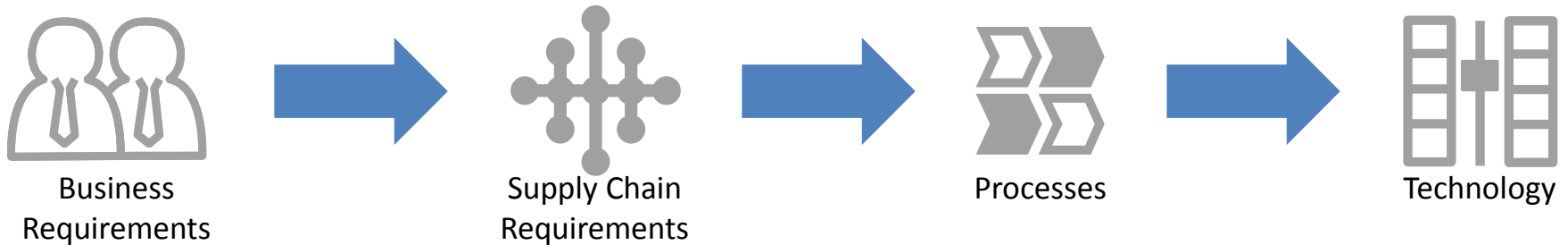


Procurement

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



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
- Increasing trend for companies to develop automation roadmaps to lower design costs and take back design process
- Remember: without good processes and flows – no technology will be the right one for your supply chain needs



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