



PROMAT

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Continued Evolution in Goods to Man Picking

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What you will learn:

- What is **Driving Innovations in Split Case Picking**:
 - Demands on Supply Chains (Omni Channels, Cost, Order Fulfillment)
 - Mega Trends such as Direct-To-Customer Distribution
 - Importance of **Big Data**
 - **SKU** Explosion
- **Solutions for Fulfillment Challenges**, to Achieve:
 - Accuracy
 - Speed
 - Cost
- Overview of **Innovations of Goods To Man “GTM” Picking Technologies**

Demands on supply chains: Order fulfillment challenges



Product Groups

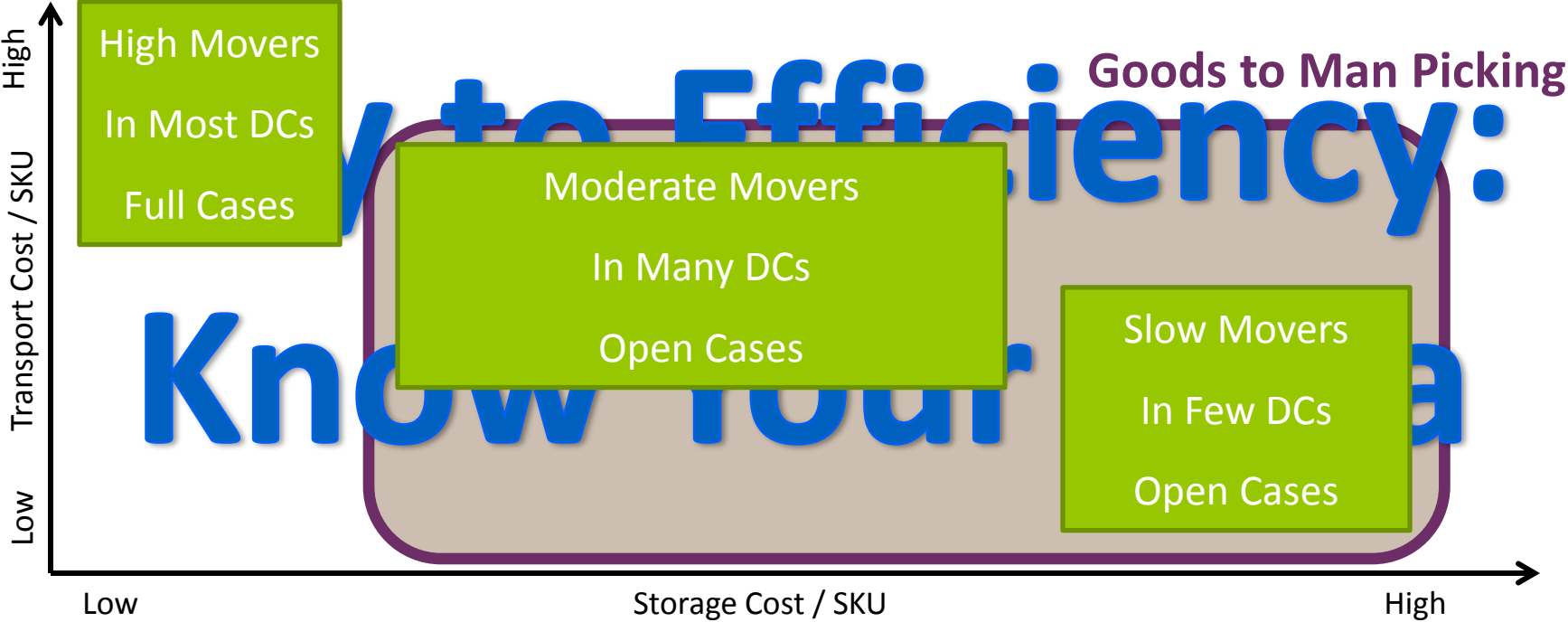
Criteria for Product Groups

- Size, Weight, Form
- Environment (Cleanliness, Temperature)
- Controlled Access
- Handling
- Value
- Fast Changing

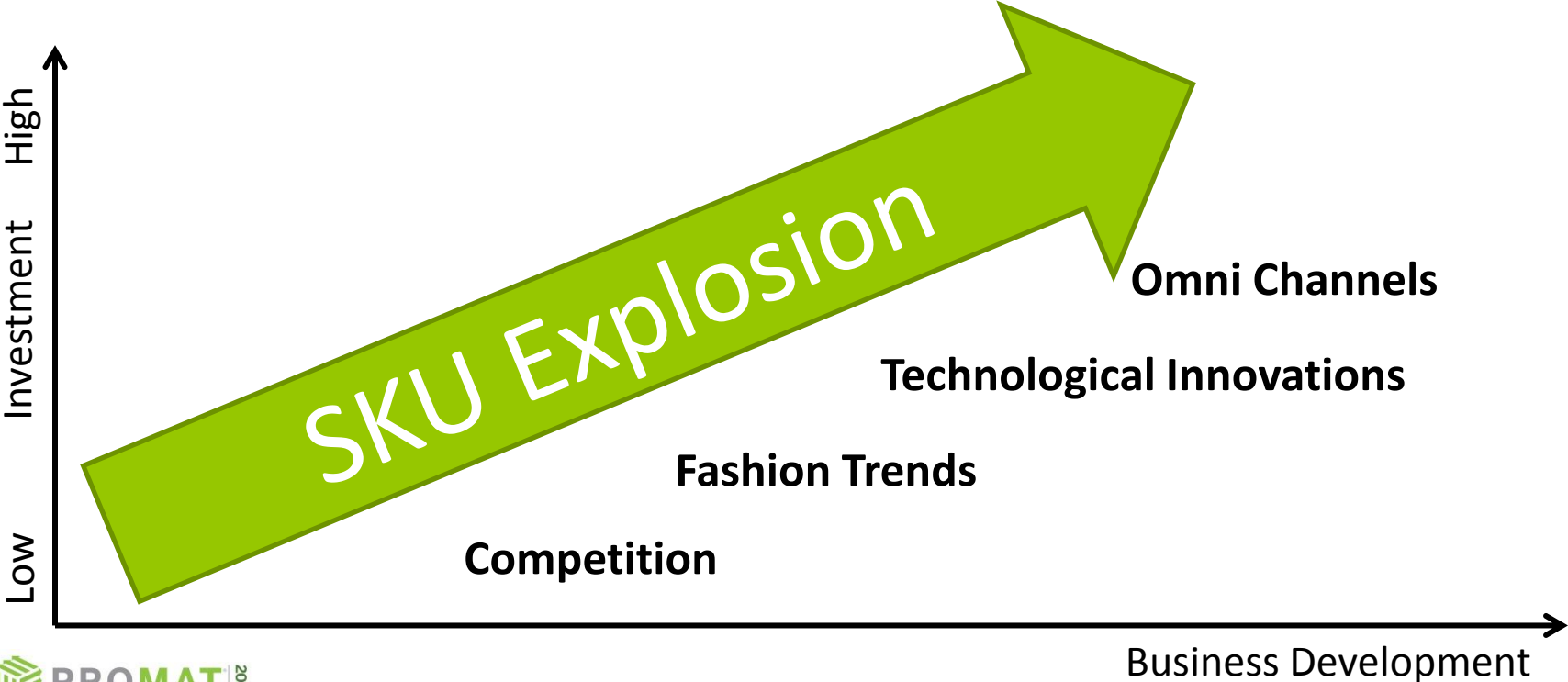
Examples of Product Groups

- » Apparel, Tires, MRO
- » Groceries, Perishable Foods, Medical Devices
- » Pharmaceuticals, Drugs, Aerospace
- » Fruits, Electronics
- » Nuts & Bolts, Jewelry
- » Fashion

Data Analysis

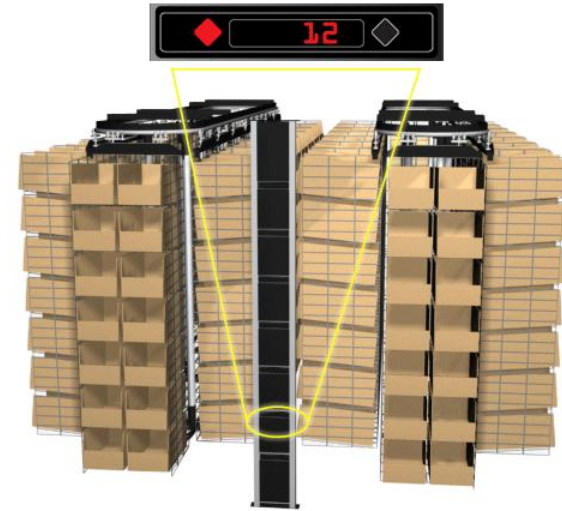
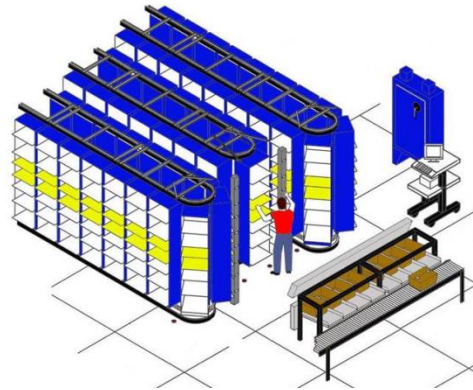


SKU Explosion



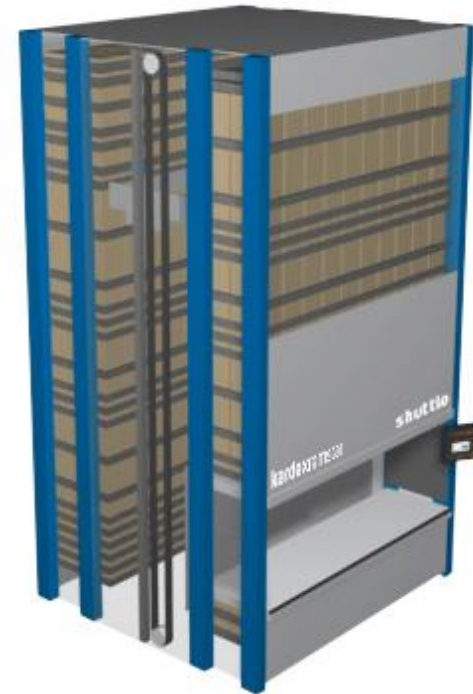
Tried and Proven Technologies for GTM: Horizontal Carousel

- Moderate Picking Volumes
- Batch Picking Drives High Productivity
- No Need For High Ceilings
- Small To Medium Size Parts
- High Payloads
- Flexible
- Very Good ROI



Tried and Proven Technologies for GTM: Vertical Lift

- Moderate Picking Environment
- Dense Storage (Space Saving)
- Small, Medium To Large Parts (> 1 Ton)
- Up To 100 Feet Tall
- Up To 250 Trays Per Unit
- Medium To Low Cost



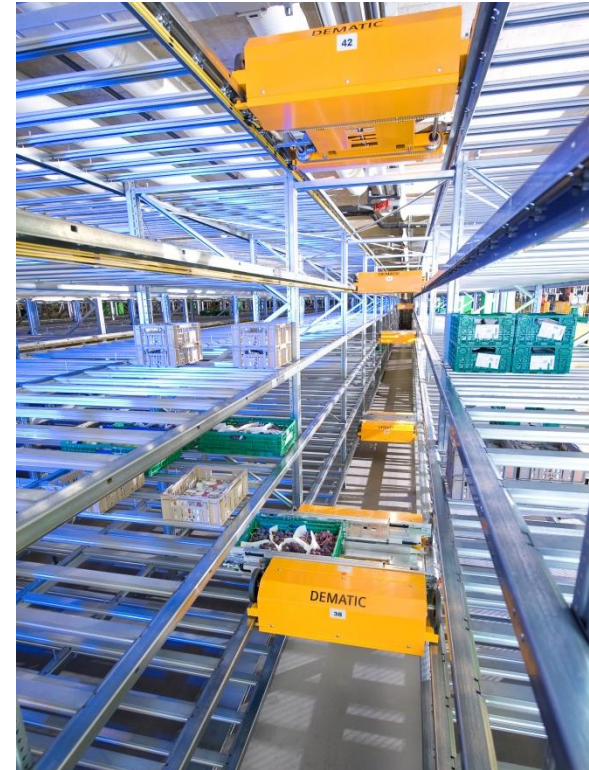
Tried and Proven Technologies for GTM: Mini-Load

- Low To Medium Picking Environment
- Warehouse Functions, Several Bays
- Totes or Trays
- Light To Heavy Parts
- Typical 40 Feet Tall
- Medium Level Cost

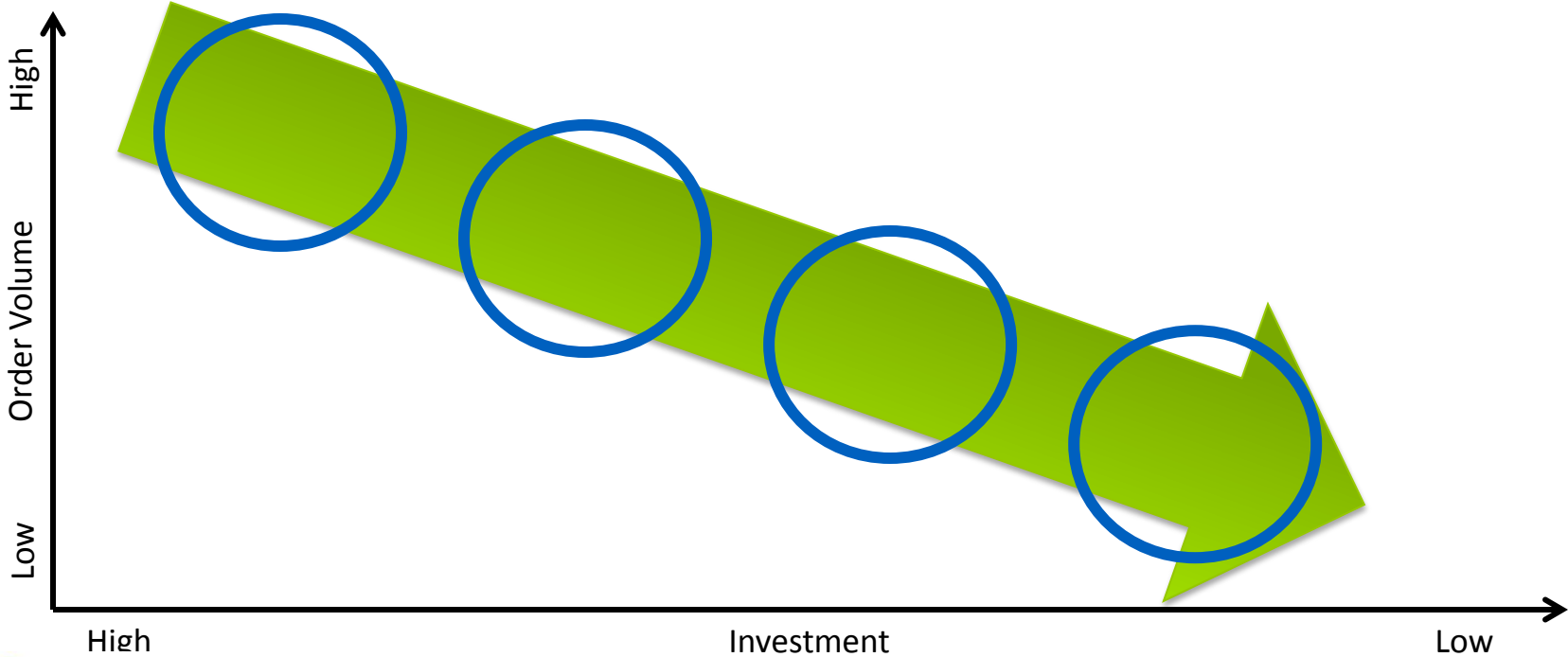


Tried and Proven Technologies for GTM: Multi-Shuttle

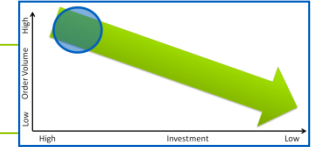
- Medium To High Picking Environment
- High Throughput DC
- Totes
- Light To Medium Weight Parts
- Lay-out To Demand, Flexible
- Medium To High Cost Solution



GTM Innovations: Order Volume to Investment Ratio



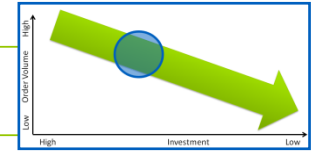
GTM Innovations: Autonomous Robotic Solution



- 100% Dynamic System
- Easy To Move Or Expand Capacity
- One Touch Concept and Very Flexible
- Good For Small To Medium Case Sizes
- Allows For Split Case Picking
- Autonomy Leads To: No Slotting, No Batching Or Waves
- System Selects Locations



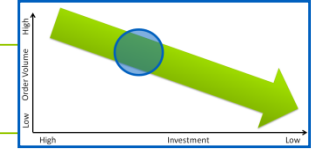
GTM Innovations: Grid Based Robotic Solution



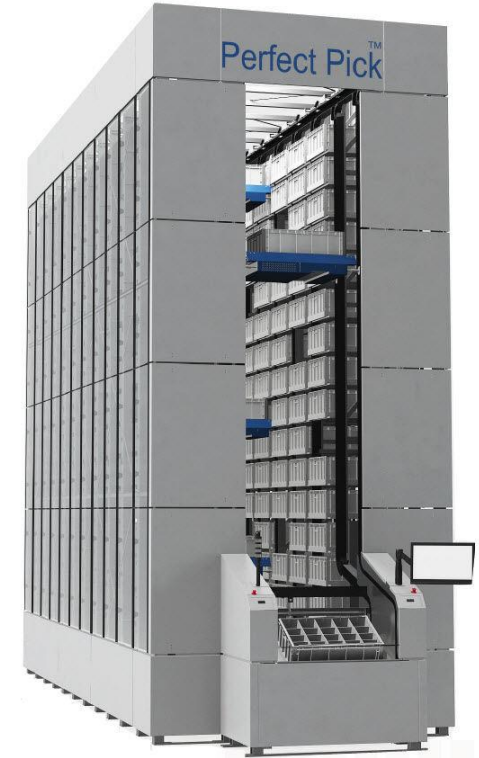
- Grid Based Autonomy
- Very Dense Storage
- Easy To Expand And Move
- Flexible
- For Light, Small And Medium Size Parts
- Usable In Low Ceiling Environments



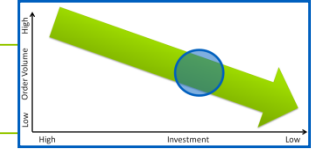
GTM Innovations: “Asynchronous” Multi-Shuttle



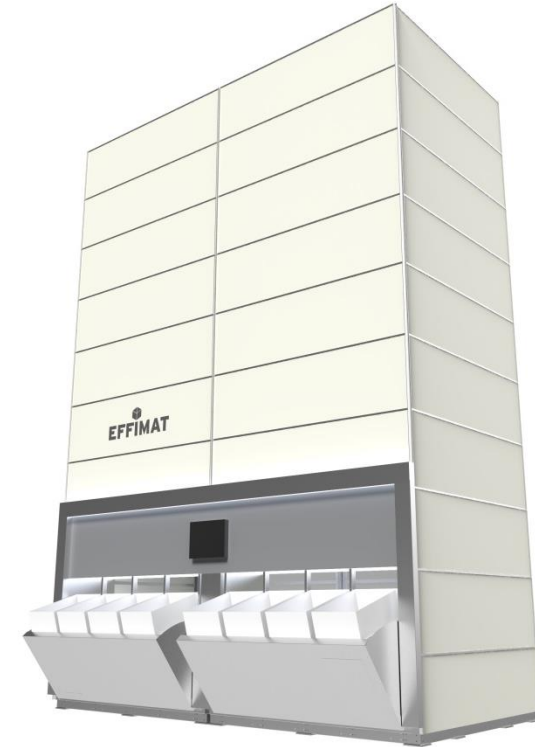
- For Put Away and Retrieval
- Good Scalability to Adjust to Demand by Adding to Aisles or Machines
- I-bots Delivery Technology is Used to Adjust to Demand
- Order Response Time as Quick as 15 Minutes



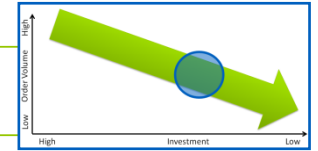
GTM Innovations: Dual Extractor VLM



- Parts in Totes
- 2 Inserter Extractors
- Individual Tote Handling
- Medium to Low Cost
- Medium Pick Rates



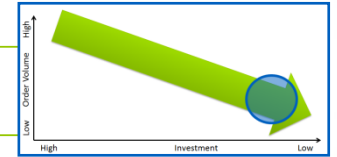
GTM Innovations: Order Consolidation Solution



- Sequencing For Shipping
- Buffering For Shipping
- Separating Waves
- Sequencing Cases on Pallets



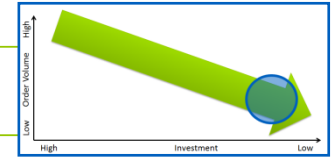
GTM Innovations: Small Item GTP Solution



- Supply Order Picking, Assembly Lines and Production Area
- Consolidate Good-Out Area
- Optimize Ergonomics and the Walking Path
- Decentralize Order Picking Out From Air Conditioned Storage



GTM Innovations: Modular Case Picking Solution “CPS”



- Modular Design
- Adjustable in Size and Volume at Any Time
- Case Sequencing



Conclusion

- The Offering For GTM Picking Has Increased Drastically Over The Last Years
- Multi-Channel DC's Are Labor Intensive
- Great ROI For Automation
- E-commerce Has Raised New Expectations For Accuracy, Tracking And Lead Time That Can Only Be Fulfilled With Automation (E.G.: Tracking).
- No More Black Magic Boxes → Solutions Target Specific Applications
- Keep Your Eyes And Ears Open As You Walk Through The Show

**FIND WHAT'S
NEXT.**



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