

Cost-Effective E-Commerce Order Picking Automation

Sponsored by:



Presented by:

Colman Roche, Executive
Vice-President



2013 MHI™ Copyright claimed as to audiovisual works of seminar sessions and sound recordings of seminar sessions. All rights reserved.

Outline

- How E-commerce trends translate into order & stocking demands
- Why automation?
- Automation options
- The stocking & picking relationship
- Information flow

Consumer Trends

U.S. E-Retail Sales,
in billions



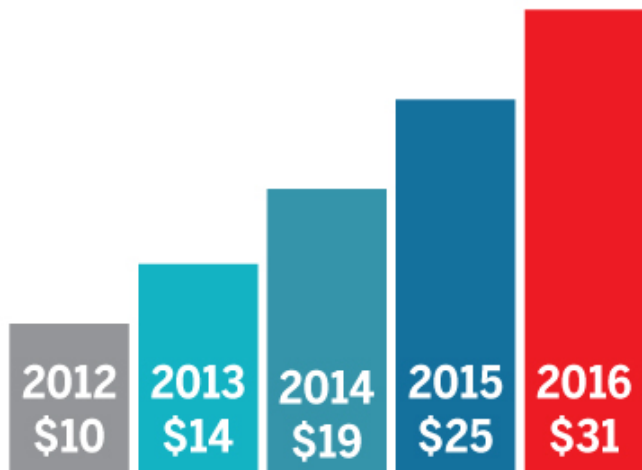
U.S. E-commerce Sales: 2011-2016

Online consumers will increase their spending 62% by 2016, according to Forrester Inc.

Source: Forrester Inc.

E-commerce sales are expected to grow **10%** per year to **\$327 billion** by 2016, accounting for **9%** of all retail sales*

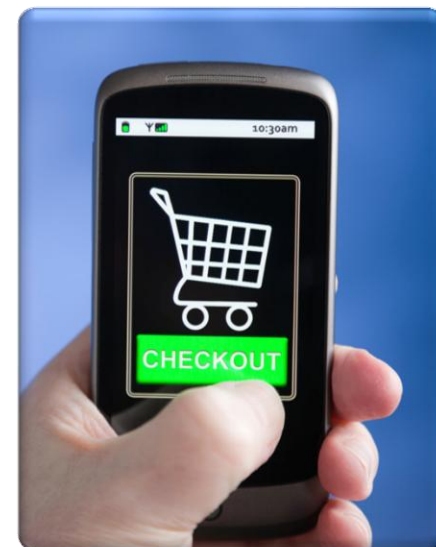
Consumer Trends



U.S. smartphone commerce forecast

Consumer purchases via smartphones will grow from \$10 billion in 2012 to \$31 billion in 2016, Forrester Research predicts. Smartphones will account for 3% of e-commerce in 2012 and 7% in 2016.

Source: Forrester Research, sales in billions



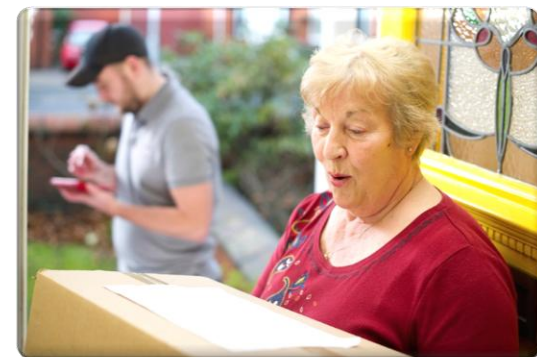
Mobile Shopping Activities of Smartphone Owners

46% of smartphone owners have conducted some type of mobile shopping activity, comScore says. The most popular are taking product pictures, locating nearby stores and searching for coupons.

Source: comScore

Nearly 50% of all mobile phones in use are smartphones.

Consumer Trends



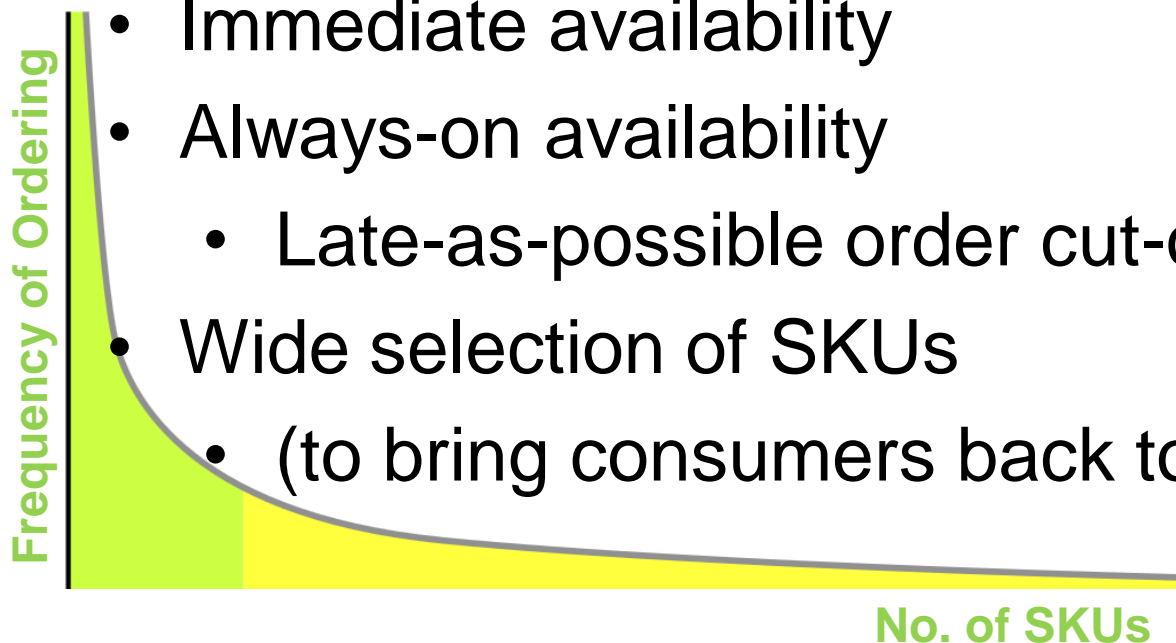
So what's it all mean...

- Customers want it all – right product, right price, and at the right place
- More smaller orders – more case and 'each' picking demands
- Continual focus on improvement in fulfillment speed and accuracy

Order Trends

Consumer trends mean...

- Low number of lines per order
- Immediate availability
- Always-on availability
 - Late-as-possible order cut-off times
- Wide selection of SKUs
 - (to bring consumers back to the website)



Order Handling

Order trends translate to ...

- 1 – 5 lines per order
- Wide range of SKUs
 - Ship from various DCs
 - Lots of stocking locations
 - Consolidation
- Peaky production
 - Late-as-possible order cut-off times

Workflow

- Have many SKUs available
 - Have a large volume of parts in stock
 - Be able to tap from other suppliers seamlessly
- Fill orders quickly, as they arrive
 - Reserve capacity for end-of-day needs
- Be flexible, late in the day
 - Re-configure zones
 - Add staff late in the day

Order Lines



Which is Most Expensive to Fulfill?



1 Pallet –
 1 touch, 1 order line(?)



1 Case –
 1 touch, 1 order line(?)



1 Bottle –
 1 touch, 1 order line(?)



Available Technologies

- Fall into 2 groups
- Static
 - Person-to-goods
 - Effort-intensive
 - Labor-consuming
- Dynamic (automated)
 - Goods-to-person
 - Flow-intensive
 - Efficient

Traditional Storage



From pallet ...

Walking



Twisting

To case ...



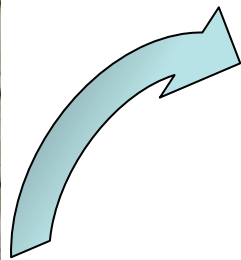
Does the same approach still work?

To each ...

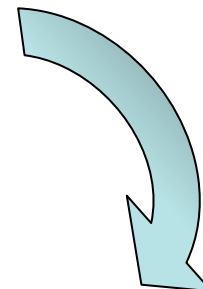
Goods to Person



Automatically
moved



Grouped



Delivered to workstations
(operators focus on filling orders Only)

Goods to Person

Types – Semi-Automated Storage

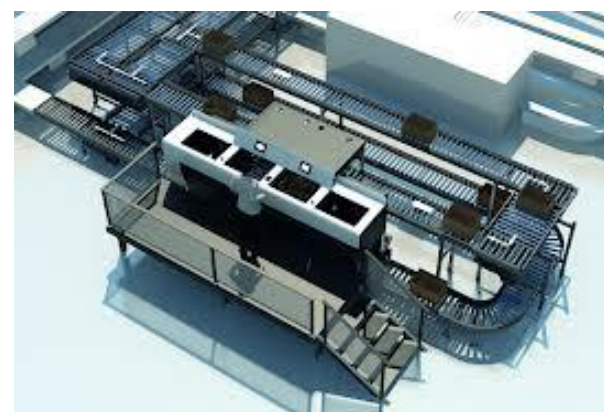
- Horizontal Carousels
- Vertical Carousels
- Vertical Lift Modules
- Conveyance



Goods to Person Solutions

Types – Automated Storage and Workstations

- AS/RS or Shuttle Storage
- Conveyance
- Pick/Put Workstation



How to Choose?

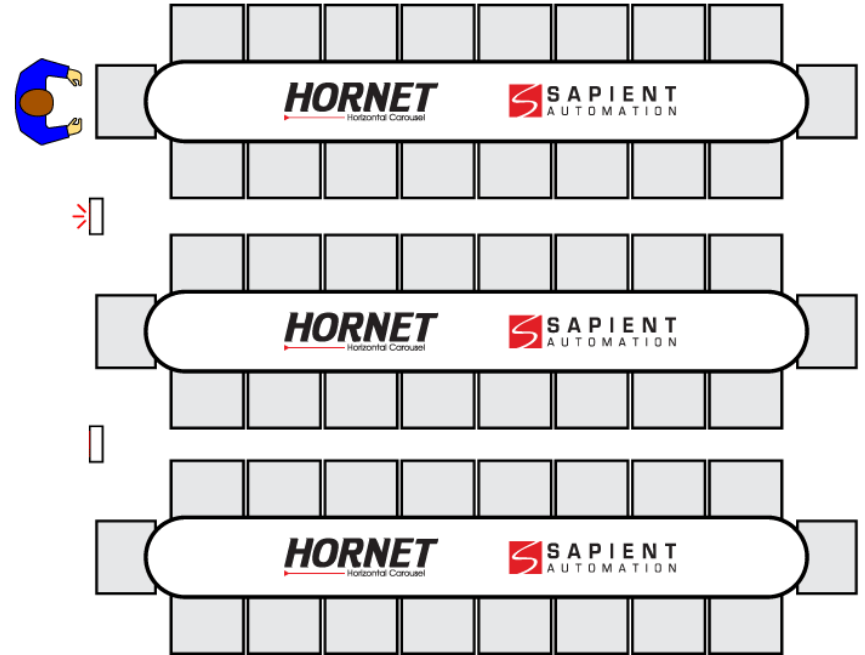
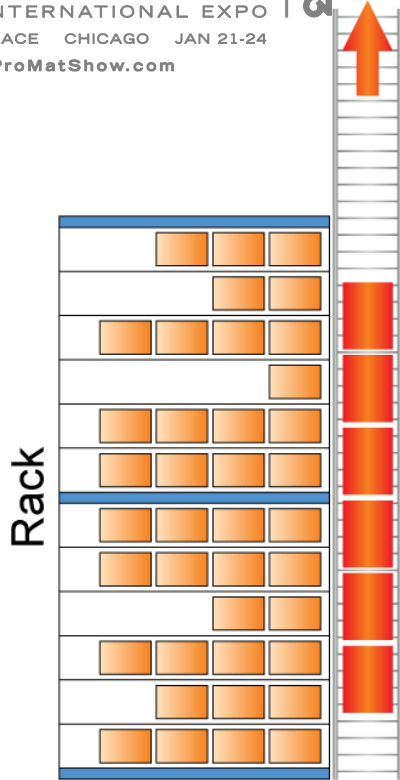
- Understand what you're trying to achieve
- Create an evaluation chart
- Throughput / productivity / labor reduction
- Flexibility
- Space utilization
- Safety & health
- Risk management
- Determine ROI



PROMAT

AN MHI INTERNATIONAL EXPO
McCORMICK PLACE CHICAGO JAN 21-24
www.ProMatShow.com

2013



Vertical
Storage
Solution

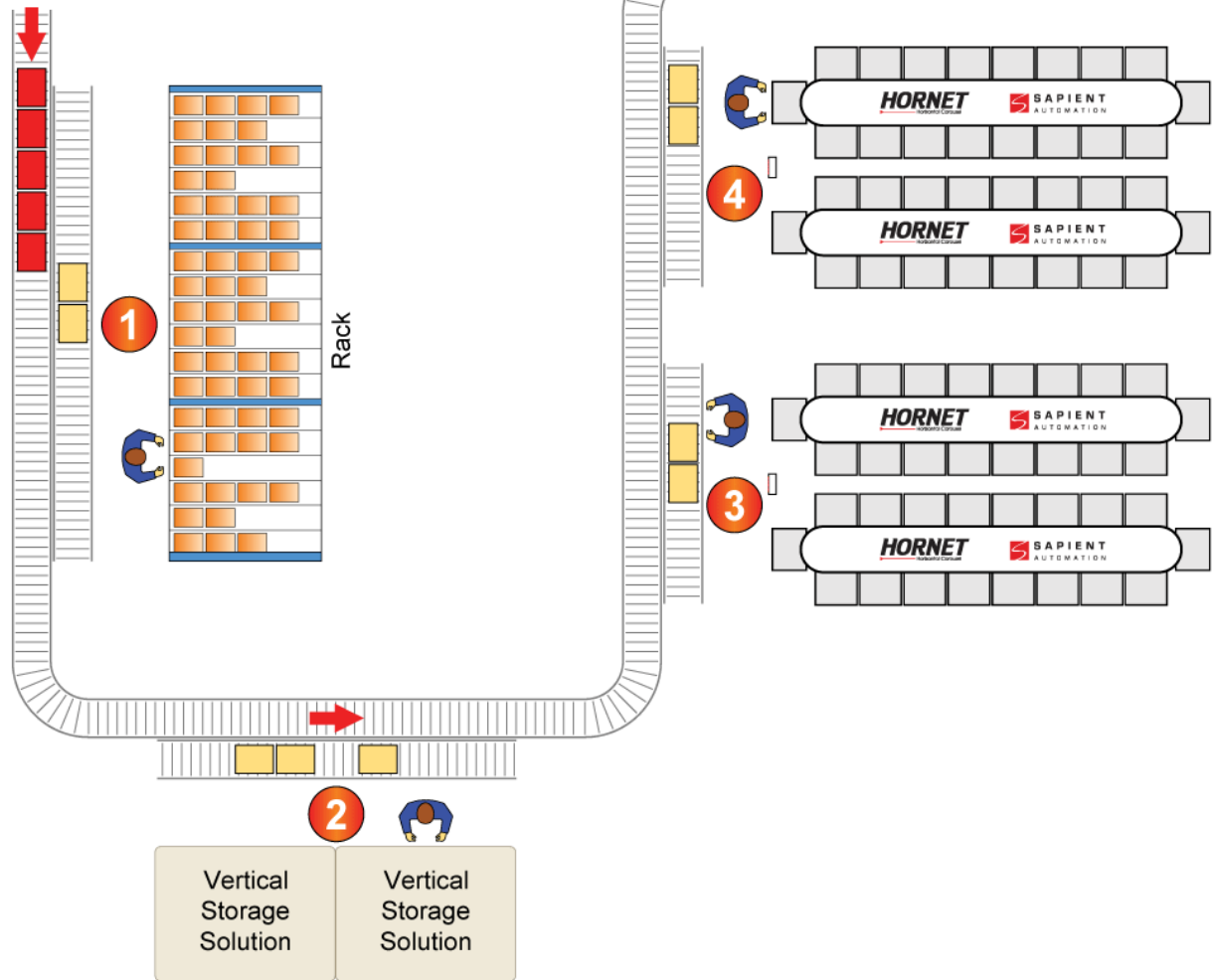




PROMAT 2013

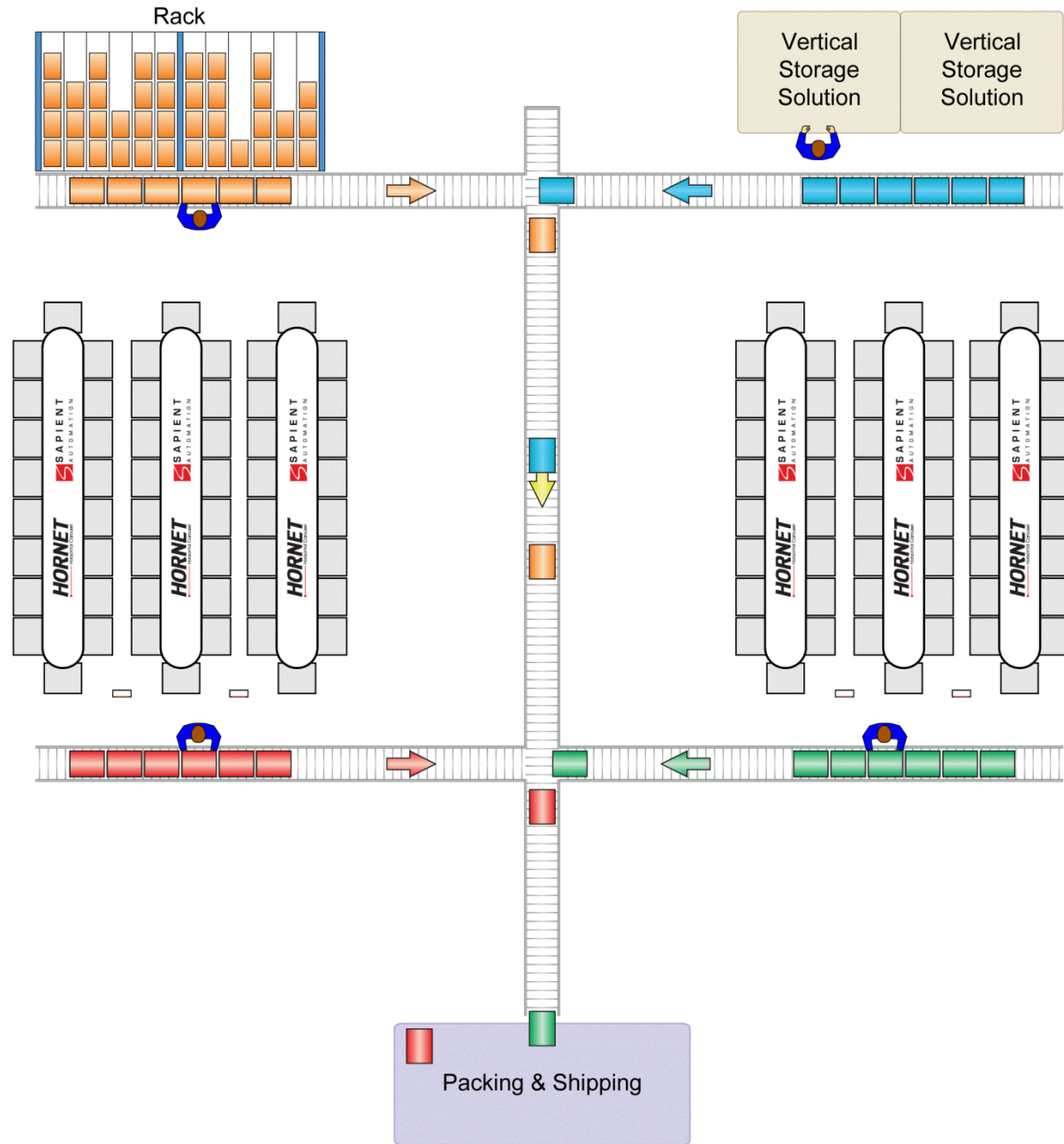
AN MHIA INTERNATIONAL EXPO
McCORMICK PLACE CHICAGO JAN 21-24
www.ProMatShow.com

- Goods to man
- Orders flow out
- Consolidate as-you-go



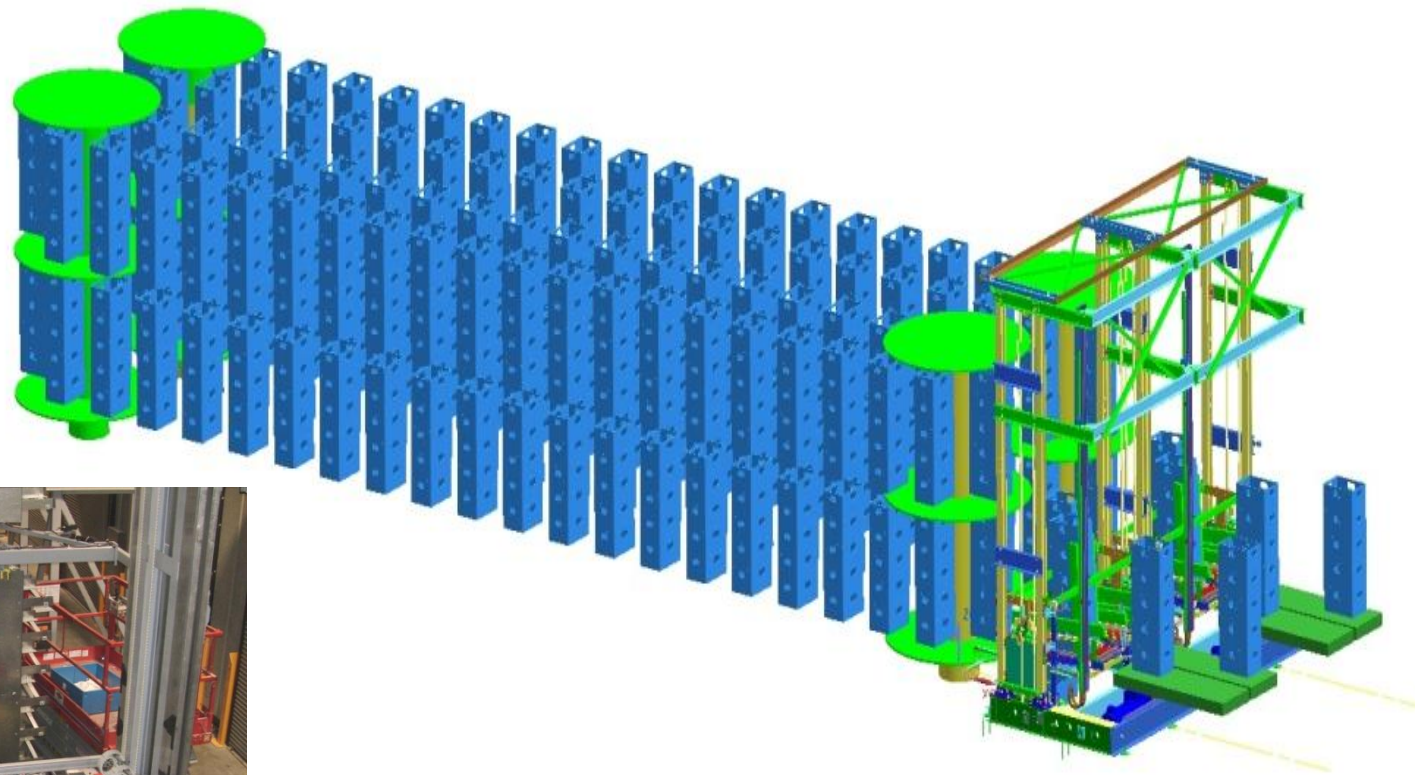


- Goods to man
- Orders flow out
- Consolidate downstream



Health & Wellness E-Commerce

- Vitamins, beauty supply, sports & fitness, weight loss, children, pets All goods in totes
 - Product stored in 6 horizontal carousels, accessed by 2 automated extractors
 - High throughput – as extractor picks from 1 carousel, others rotate into position
- Product delivered to picking stations, married quickly to orders



Health & Wellness E-Commerce

- Video here

Summary

- List your goals
- Prioritize them
- Look at a variety of ways of achieving them
- Match goals and benefits
- Good luck!

For More Information:

Speaker: Colman Roche croche@getsapient.com

Sapient Automation

Home Page: www.getsapient.com

Visit ProMat 2013 – Booth 1056