eCommerce Flexibility Needed

Presented by:

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Evolution of the Consumer

1970 1975 1980 1985 1990 1995 2000 2005 2010 2014

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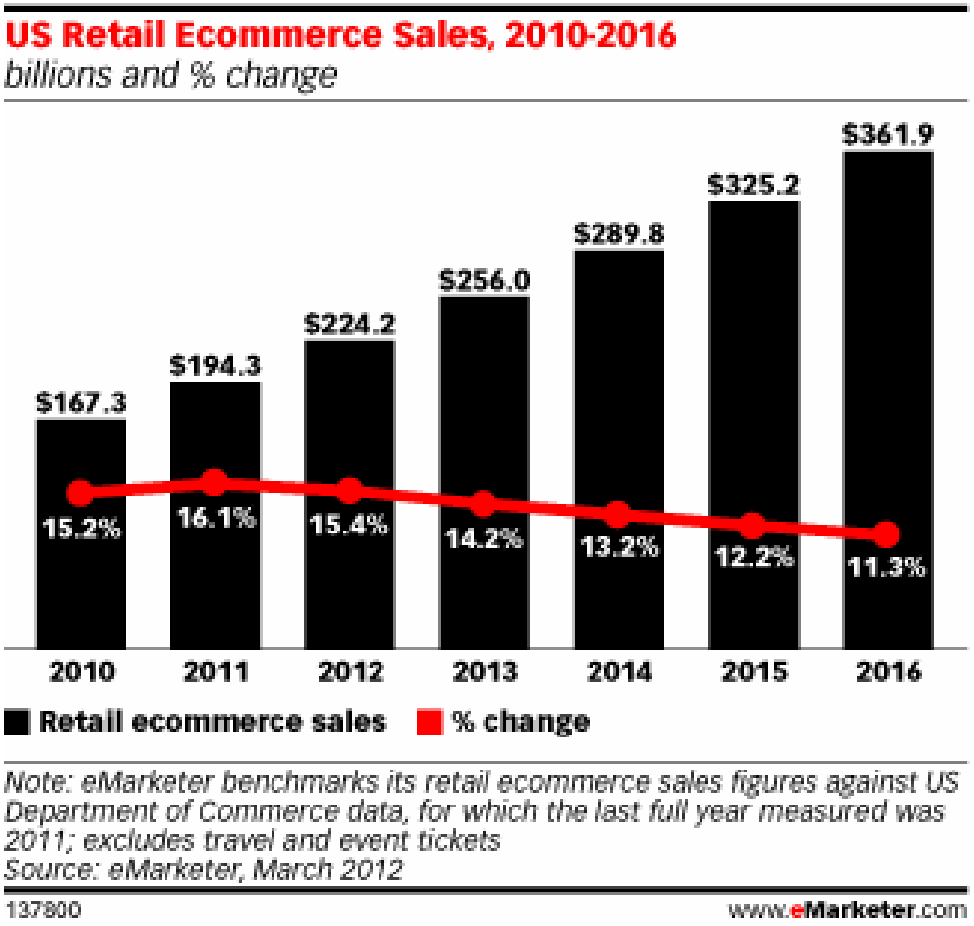
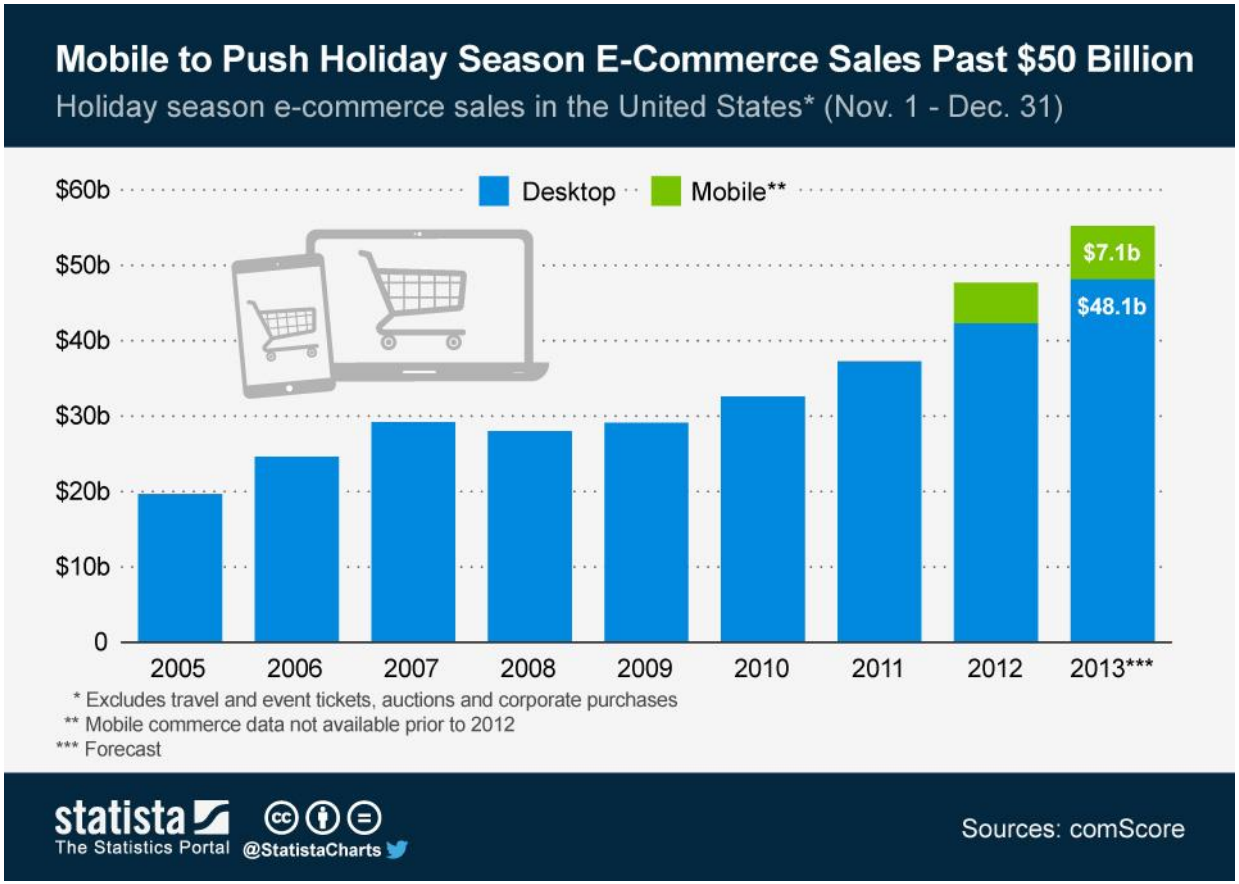
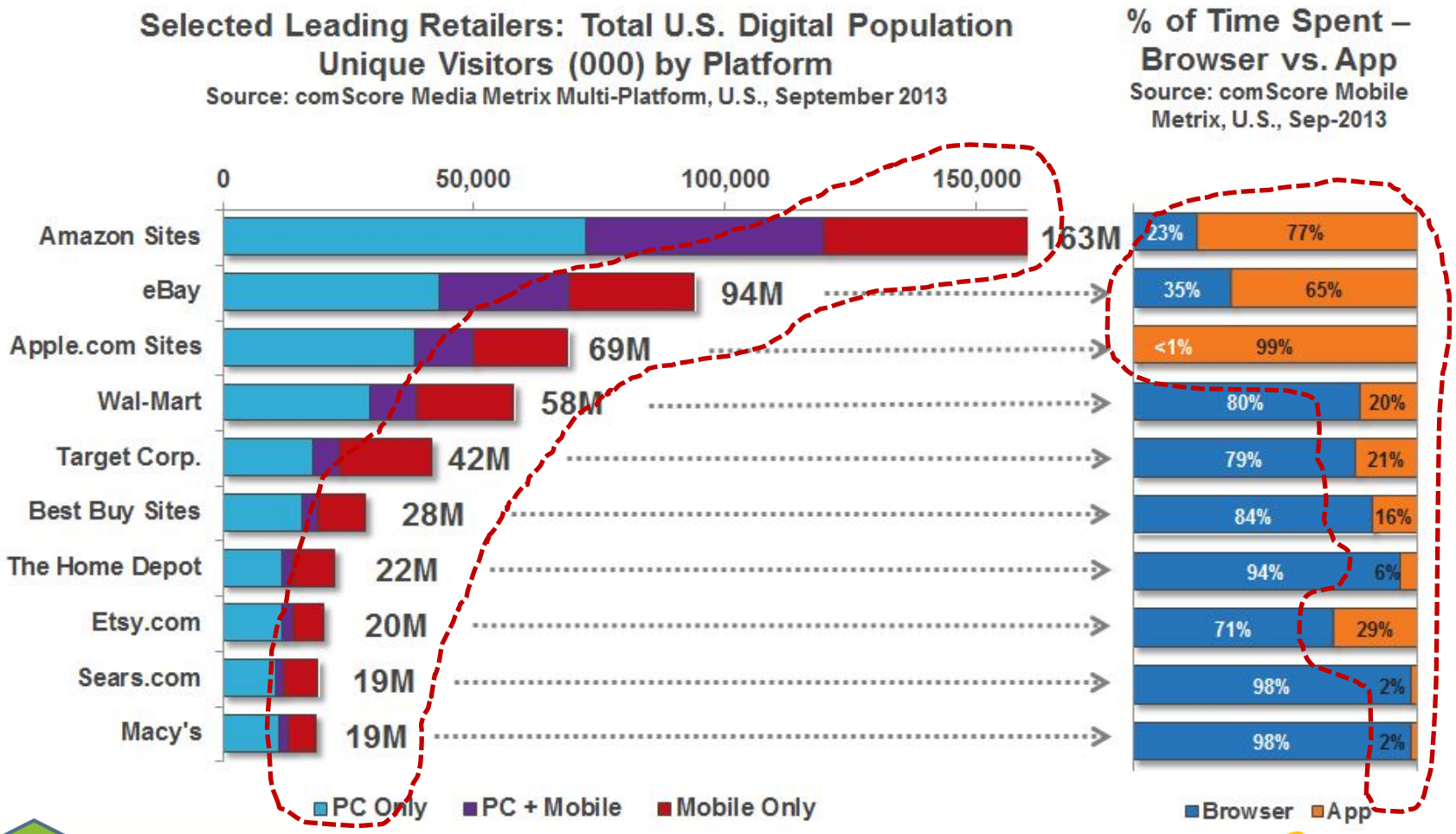
eCommerce Will Continue to Growth



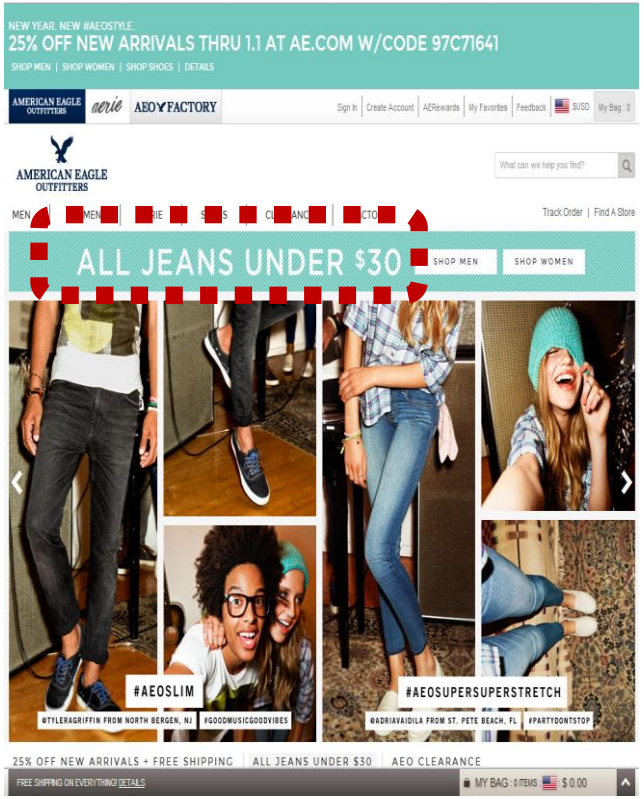
Mobile is large driver in growth

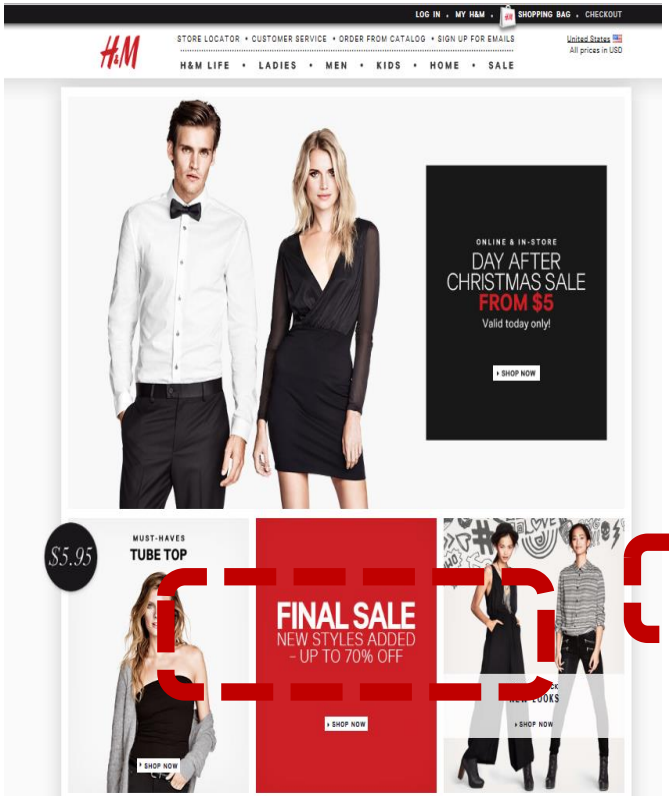


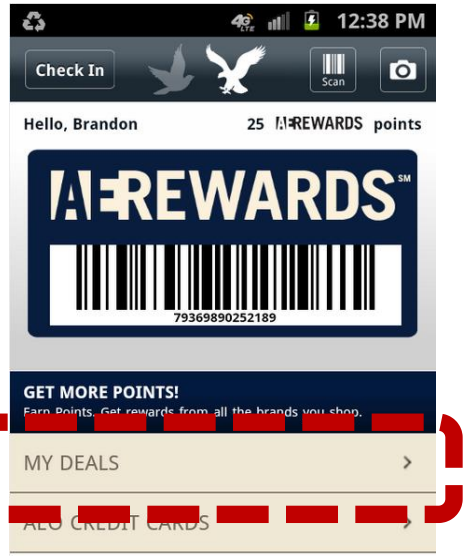
Room for Mobile Growth



Dynamic Marketing







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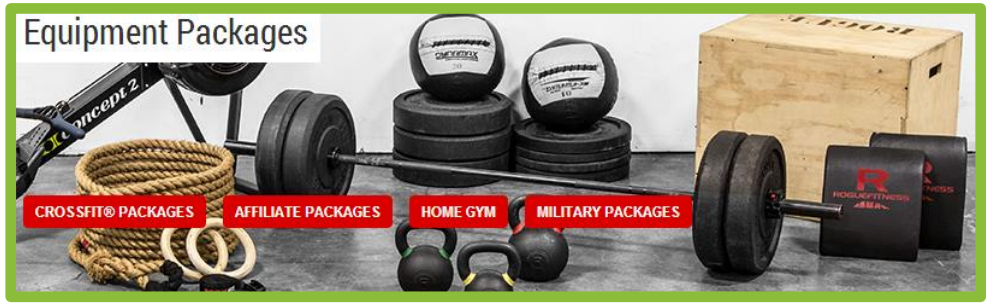
SKU Synergies

Does velocity based slotting work in eCommerce?

Playstation 4, PS4 DualShock 4 Wireless Controller, Turtle Beach – Ear Force P4C Chat Communicator Gaming Headset, PlayStation Plus 1 Year Membership, NBA 2K14, FIFA 14, Madden NFL 25



- Singles vs Multis
- Sortables
- Bulk

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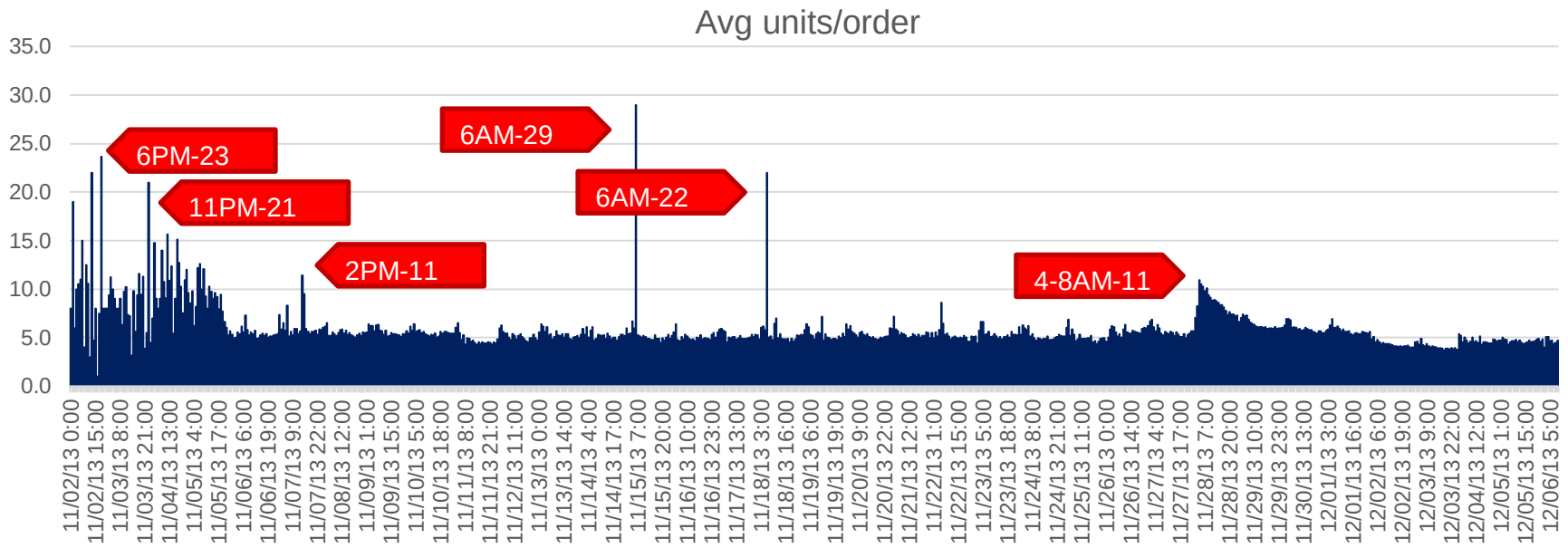
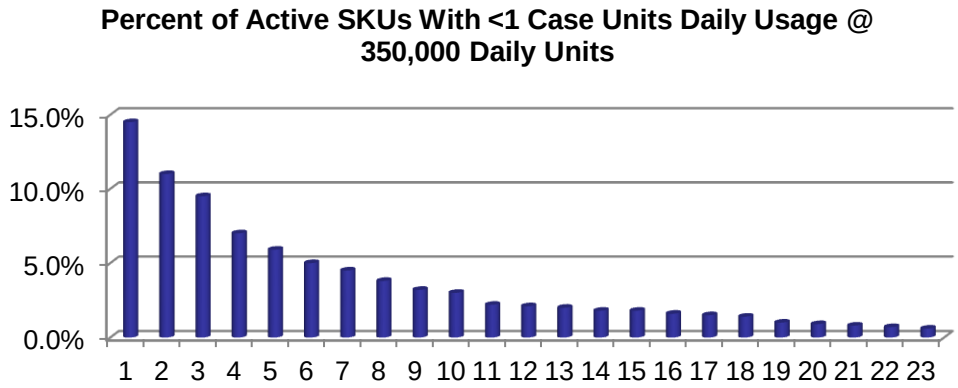
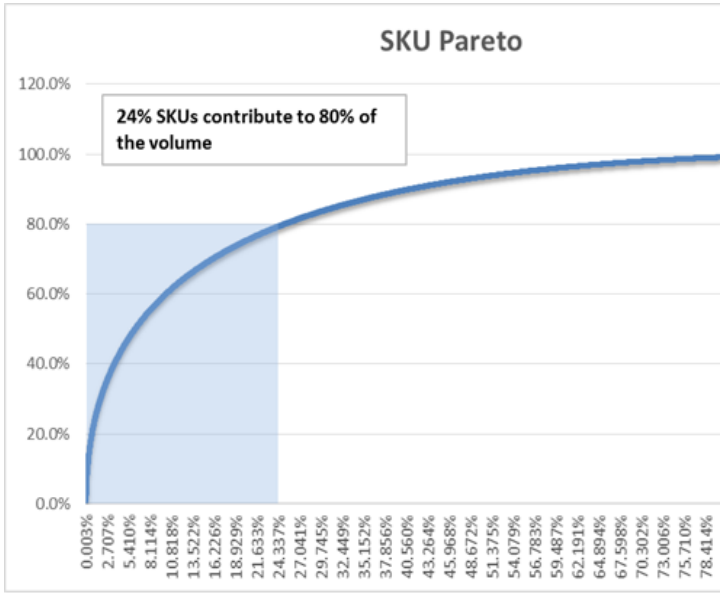
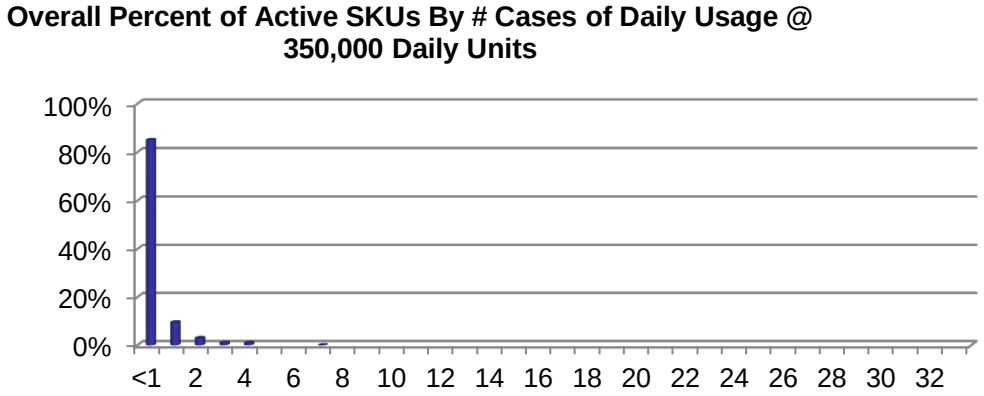
Order Profile Volatility



SKU Consumption







Havoc on the “Wave-ologists”

Plan, Correct, Exception Monitor, Plan, Correct, Exception Correction, Plan, Correct, Exception Monitor, Plan, Correct

Source: WV Commerce Department Newsletter

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Plans & Design Rates

<u>Business Data</u>

- Actual Order Data
  - Order Volume
  - Order Profile
    (Singles, Multis, Bulk)
  - Active SKUs
- Service Levels
- Shift Hours & Breaks
- Growth Projections

<u>Design Data</u>

- Number/Availability of Personnel
- Machine Rate(s)
- Equipment Utilization (80%)
- Hours of Operation
- Projected UPH
- Distance of Travel vs SKU Facings

Brief Overview of Fulfillment Approaches

1) <u>TRADITIONAL Solution Based</u>

- Discrete Order Picking
- Zone Route
- Goods-To-Man
- Robotic

2) <u>CONTINUOUS Process Based</u>

Discrete Order Picking

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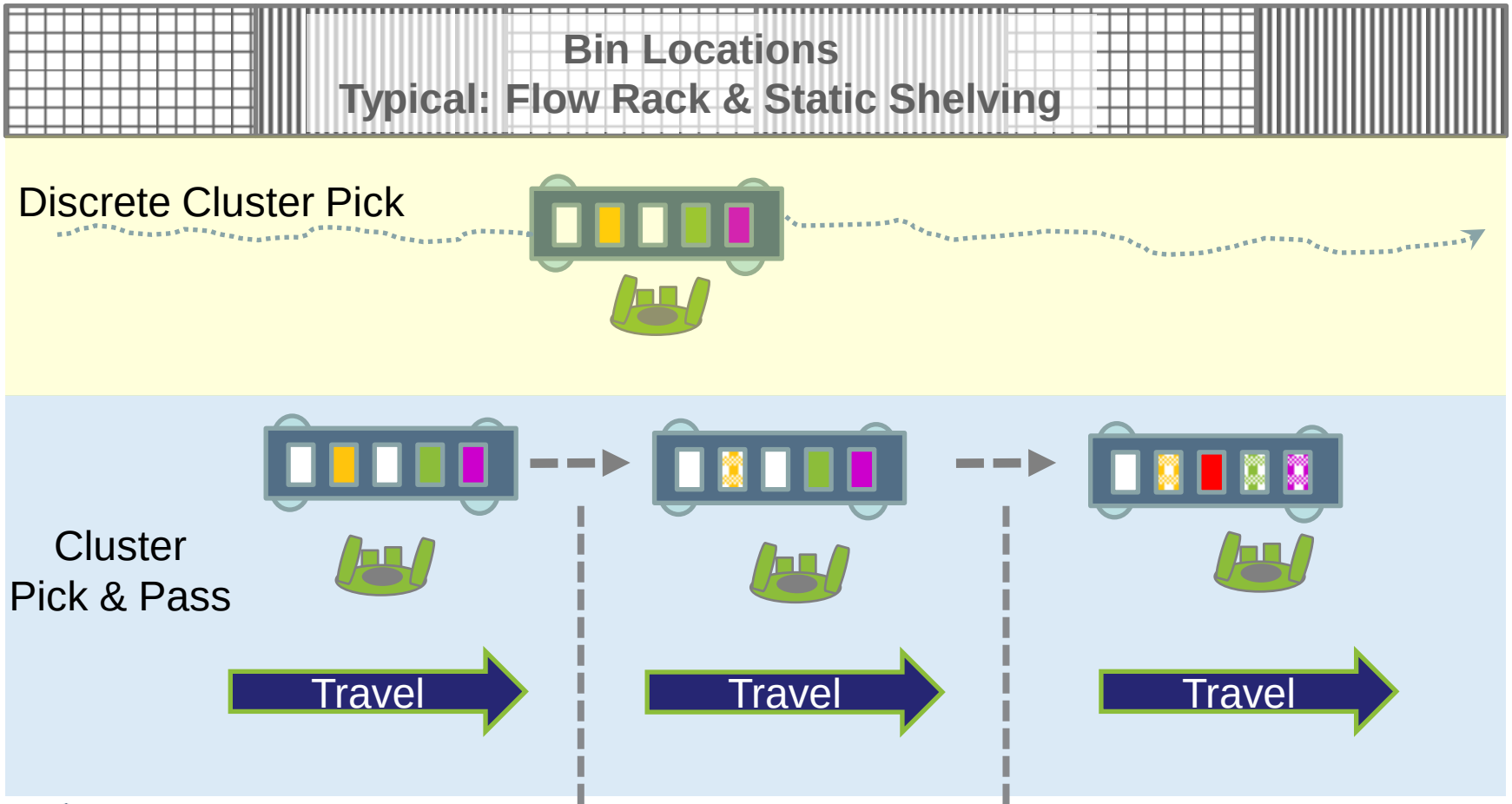
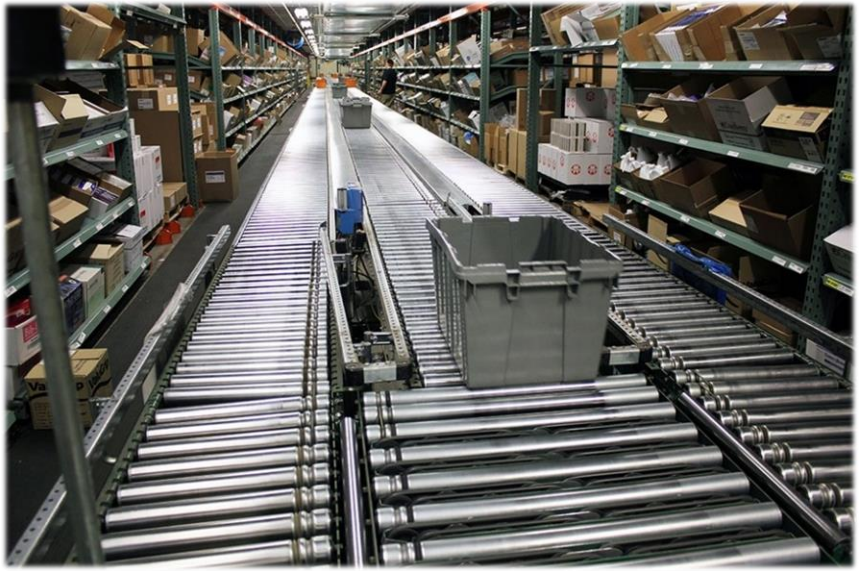
Cluster/Group Picking



Wave Based Zone-Route



Goods-To-Man

Source: www.Dematic.us

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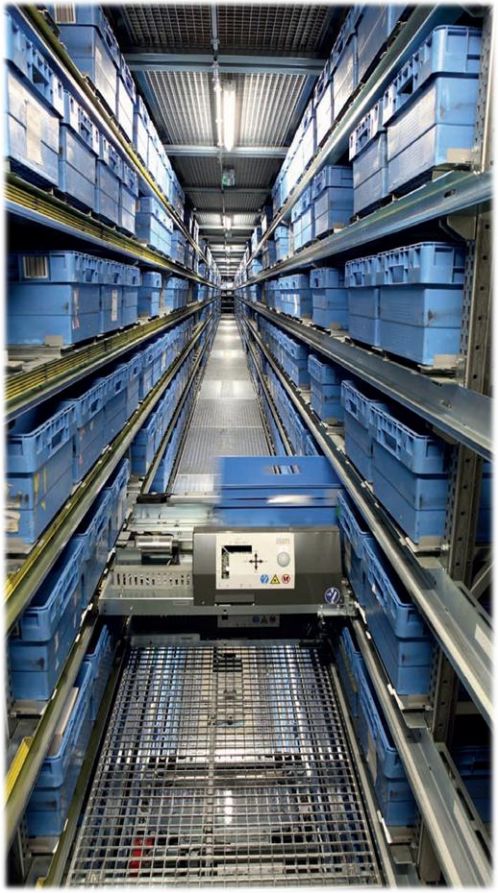
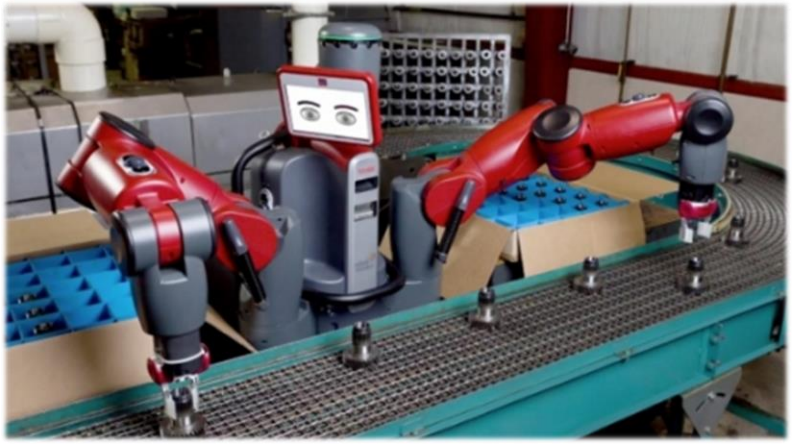
Goods-To-Man

Source: Autostore

Source: Opex Corp



Robotic



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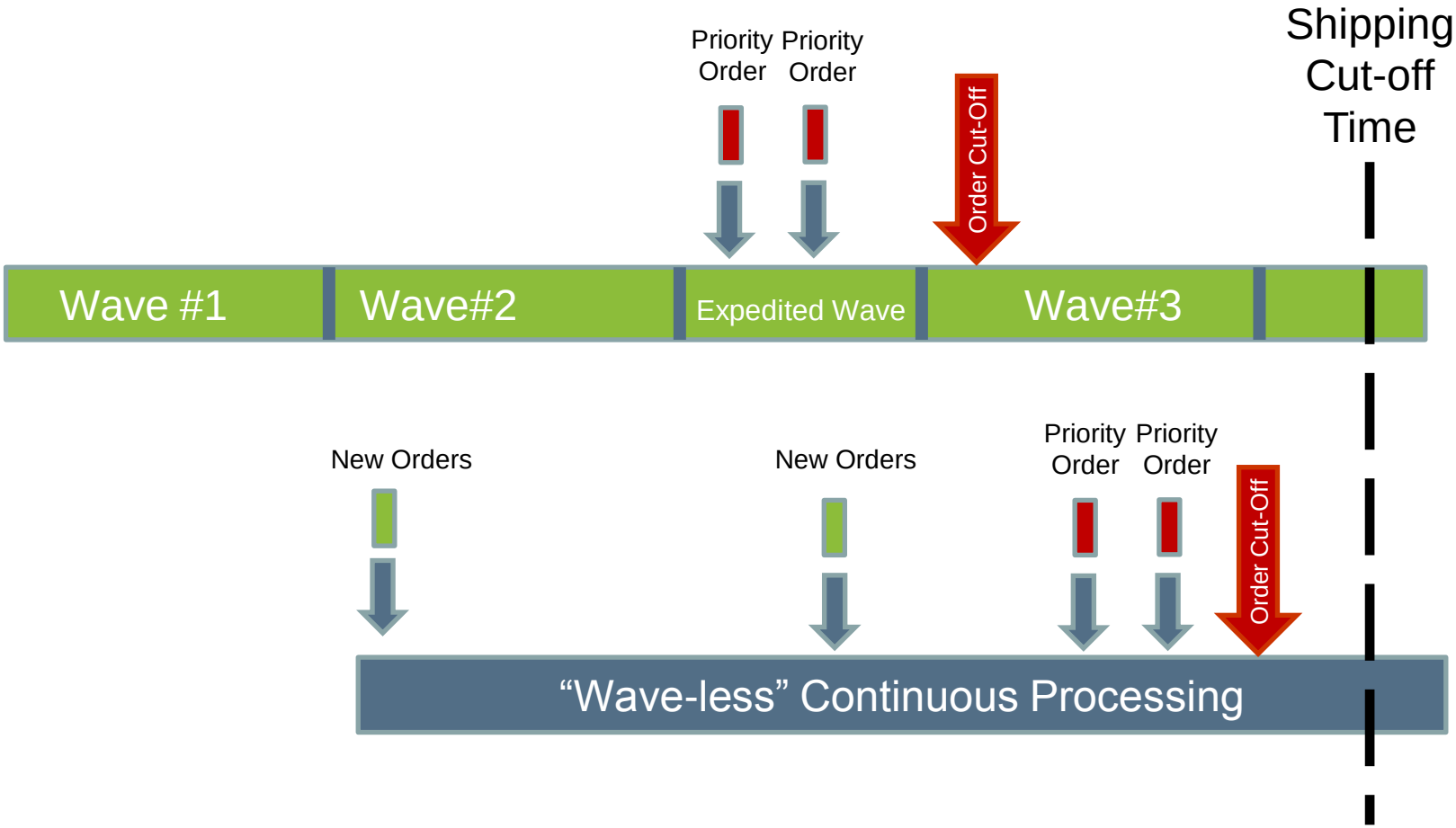
Best of Breed = LEAN

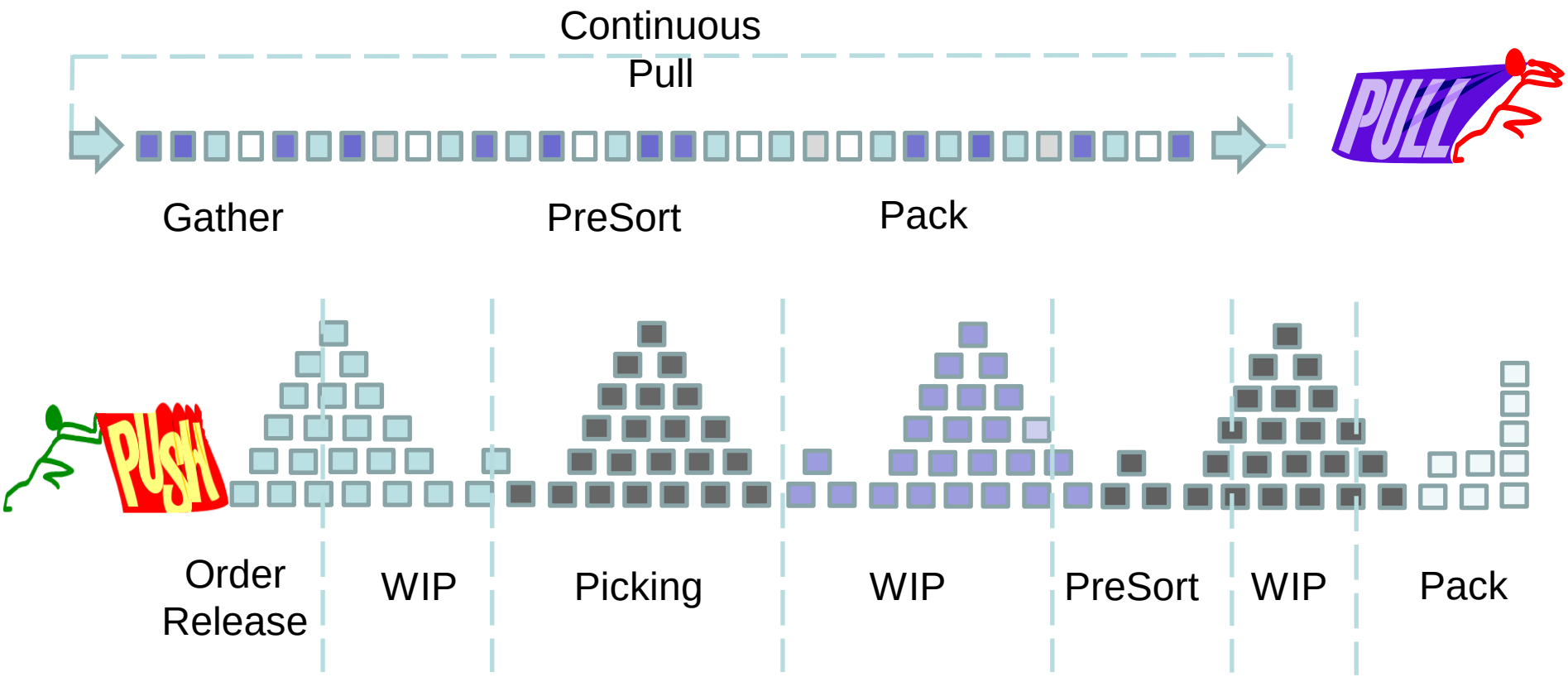
- Continuous Process/Waveless
- No Waving Team
- Inventory Prepped for Sale at Time of Receipt
- All Inventory in Active Pick
- Not a silo'd technology solution ,i.e. voice
- De-Coupled Processes

  i.e. pack, dunnage, manifest, seal

Continuous “Lean” Processing



“Lean” Pull Based



Work In-Progress (WIP) Causes:
Inefficiency, More Touches, More Mechanization, More Management, Footprint++

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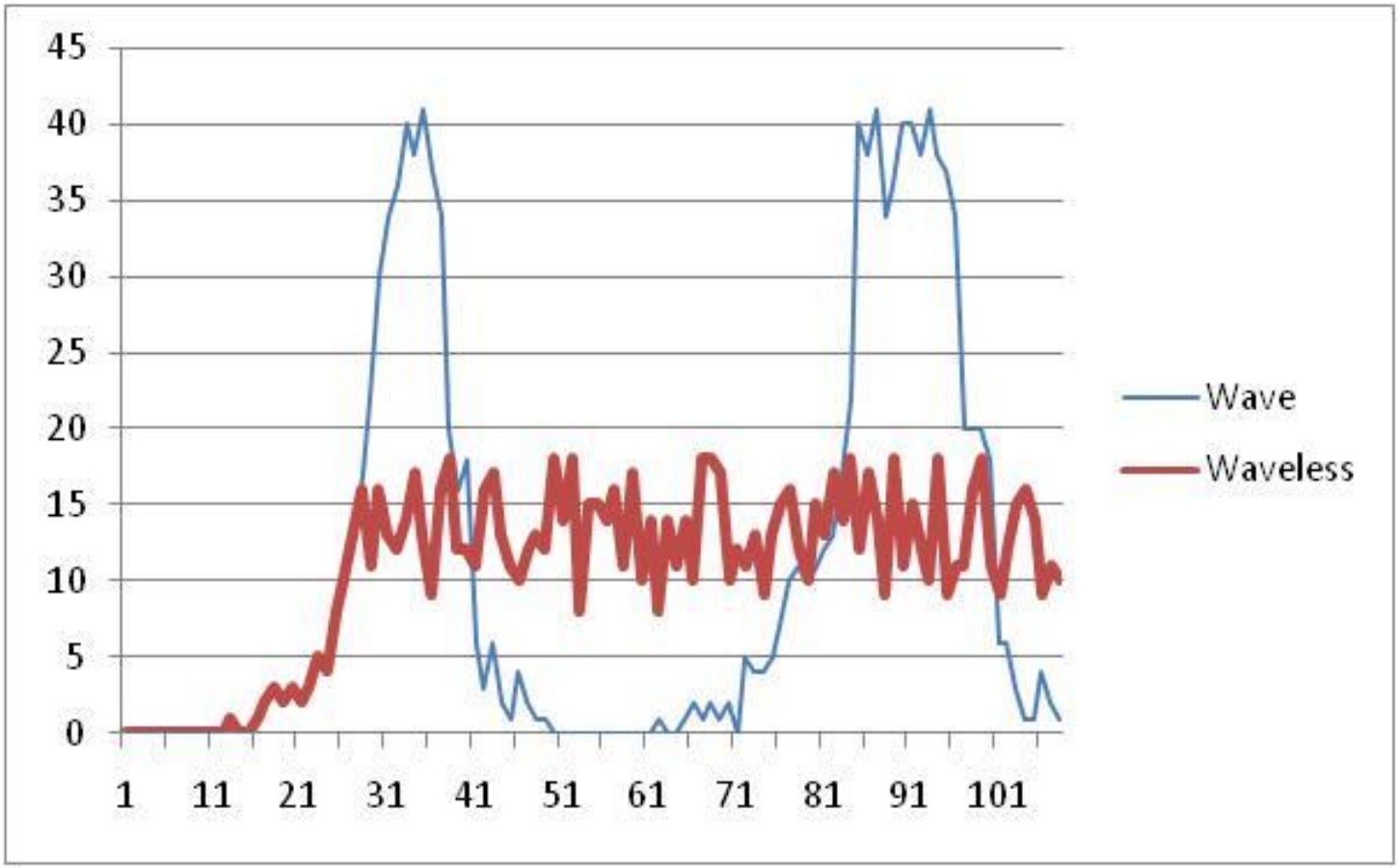
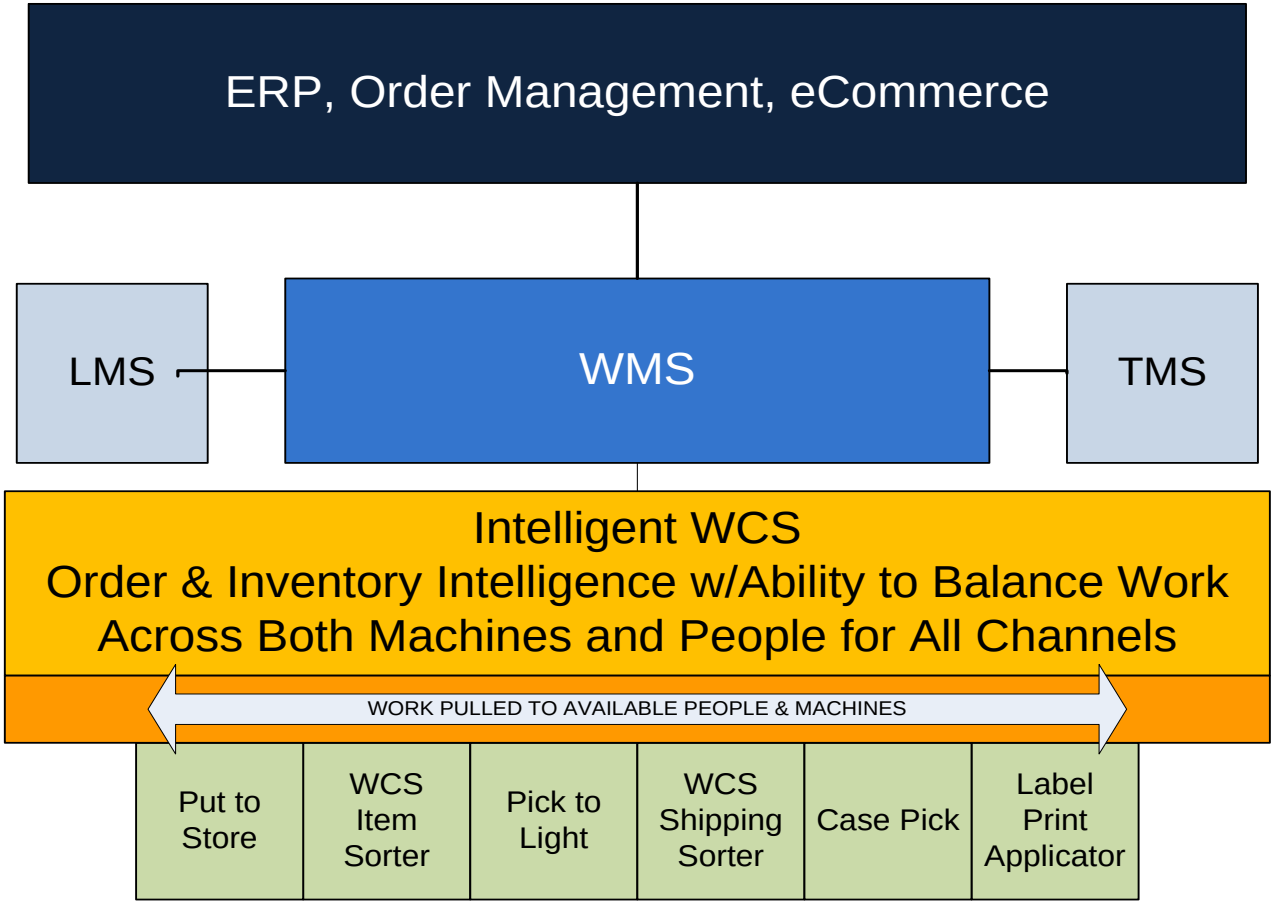
“Lean” Waveless Process



The Intelligent WCS – One Engine



Synchronizes and Sequences work to “pull” work to available resource

Continuous “lean” Process Benefits

Capital	• Continuous “lean” processes have very little buffers • Pulling work to available resources provides consistent flow & higher efficiency of automation lowering rate requirements • Operation not constrained by technology based solution • Flexible for growth
Accuracy	• Ergonomic work cells achieving accuracy rates • Incorrect orders = lost eCommerce customers • Hard savings associated with each order error reduced
Stockouts	• Replenishment is demand based, release for picking is carton based • Stockouts are resolved in real time in a manner that is transparent to the operator
Training	• Operators work simple decoupled processes, training is quick and easy • Productivity goals are well maintained regardless of the turnover rate • Easy, ergonomic work cells result in better moral, fewer new hires
Order Cycle Time	• Orders are processed in a continuous flow • Later order cut-off times = more captured sales • Business rules are maintained • Decreasing buffers reduces overall order cycle time, even faster turn for high priority orders

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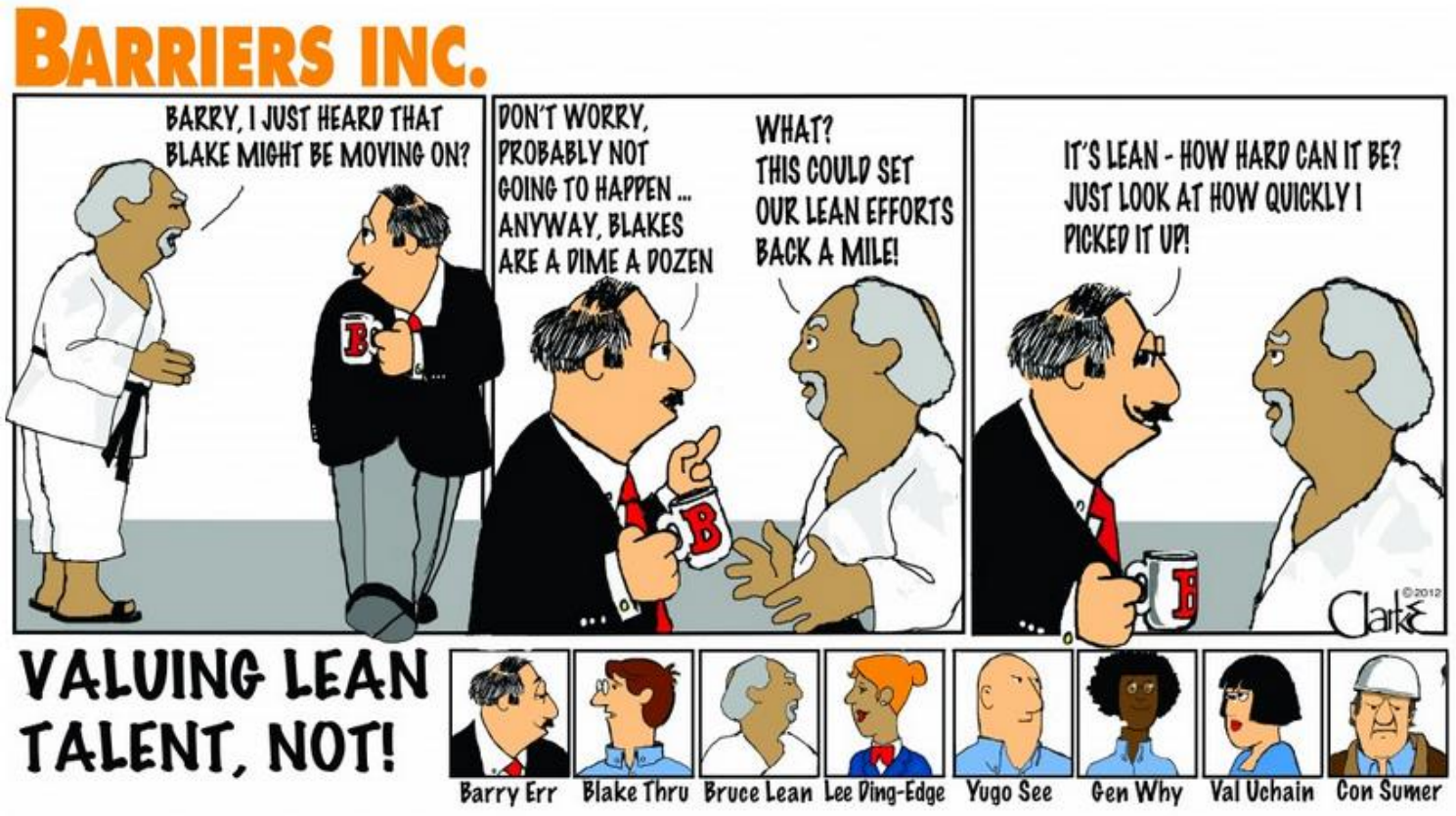
Lean is the way of the future



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