

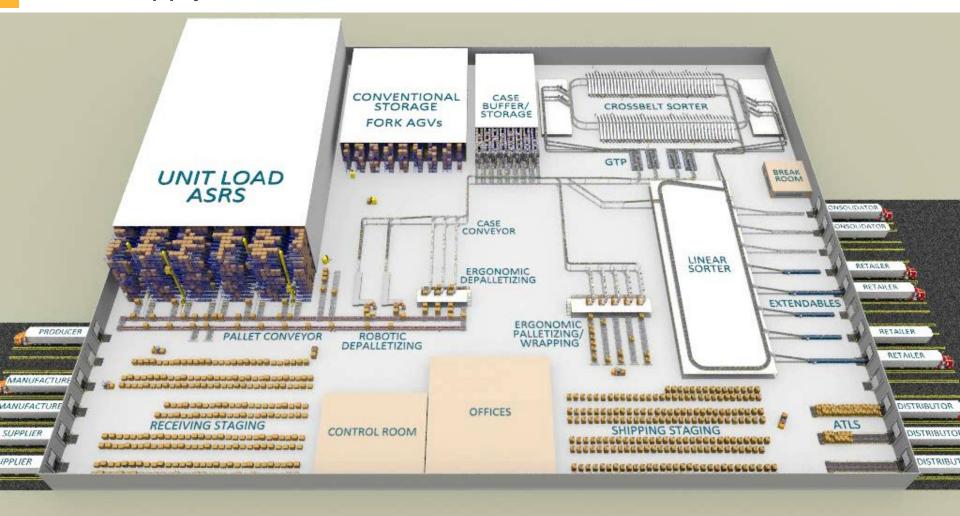
# The Calgary Region as a Transportation Hub

November 20, 2014 The Safari Lodge, Calgary Zoo, 1300 Zoo Rd NE, Calgary Alberta



#### "4 Walls & 2 Windows"

#### From Supply to Demand



UPSTREAM PROCESSES

RECEIVING & STORAGE

ORDER BUFFER REPLENISH & SEQUENCE

WORK IN PROCESS

ORDER FULFILLMENT

CONSOLIDATE

WAREHOUSE CONTROL

### **Drivers of Technology Adoption**

#### Global and Economic Trends

Ecommerce/Omnichannel is wildly changing...

...customer expectations for speed & perfection

...the Supply Chain to the "Supply Mesh"

...the gap between peak and average volume



...Dimensional Weight pricing by parcel industry

...rail & intermodal increasing relevance and reach

...battle over the last mile. AmazonEx?



...the importance of resilience in network design

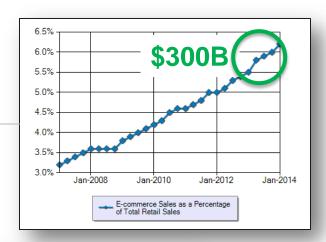
...tracking and tracing of material and data flow

...the amassing of Big Data and powerful analytics

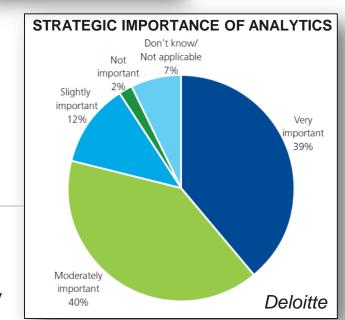


...a shortage of qualified labor

...a desire to invest in modular, flexible, scalable technology







### **Technology Today: Human Productivity**



LET AUTOMATION DO THE DUMB STUFF



SPEED AND DENSITY RULE



FEWER PEOPLE, MORE PRODUCTIVE



AUTOMATED FACTORY SUPPLY CHAIN



**SMART PACKAGING** 



STOP WALKING AROUND



**MOBILITY OF CONTROL** 



MACHINE TO MACHINE (M2M)
INTERFACE FOR HARMONY



MAKE IT EASY ON THE STORE

# **Technology Today: Human Productivity**



**AUTOMATED GUIDED VEHICLES** 



**MULTISHUTTLE BUFFER STORAGE** 



**PICK-TO-VOICE** 



**AUTOMATED MONORAIL** 



**ON-DEMAND BOX MAKER** 



**GOODS TO PERSON STATION** 



**MOBILE MONITOR** 



**RFID** 

# **Technology Tomorrow: Human Proof**



**VISUAL CONNECTIVITY** 



**AUGMENTED REALITY** 



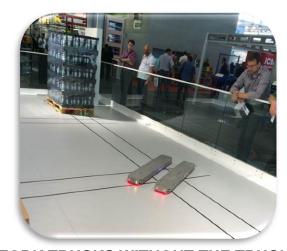
**ROBOTIC EACH PICKING** 



GESTURE-BASED USER INTERFACE



**AUTONOMOUS PICKING CARTS** 



FORK TRUCKS WITHOUT THE TRUCK



### **Summary**

#### Free Advice

- Continually improve connectivity from your suppliers through to your customers
- Software is strategic, hardware is tactical. Keep up on both.
- Great talent will be harder to find, invest in their productivity and accuracy.
- Like grocery bags, save all the data you can....you never know when you'll need it.
- What's happening in retail matters (or will matter) to manufacturing.
- Global and geopolitical news will mean more to you tomorrow than it does today.
- Think about the "net good" of your actions...you won't regret it when you are in hospice.
- Before you embark on change, look in the mirror:
  - What's your real mission?
  - What's your company culture?
  - What will tomorrow's customer demand?
  - Do you have the guts?

