DISTRICON
advisory solutions professionals

“Not see the dc for the racking ”

(not see the wood for the trees)

The right track towards DC optimisation

SLF
SERVICE LOGISTICS FORUM

Opglabbeek, 11 Mei 2017
17/Concept/LWE

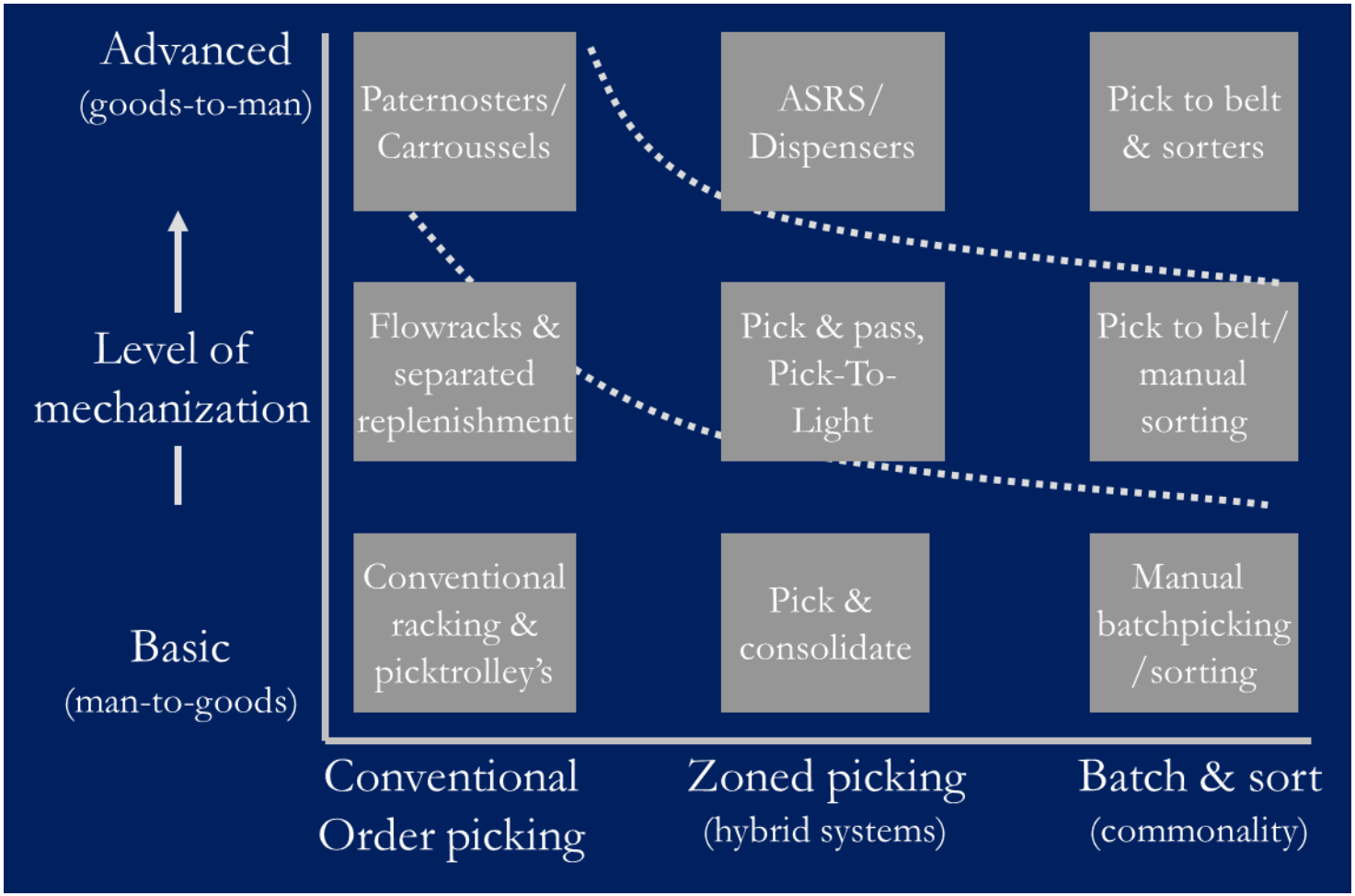
Contents

Feet on the ground and vision deliver more than immortal ambition and dreams

1. Getting confused from all different systems and possibilities?

2. It was clear and simple in the ‘early’ days

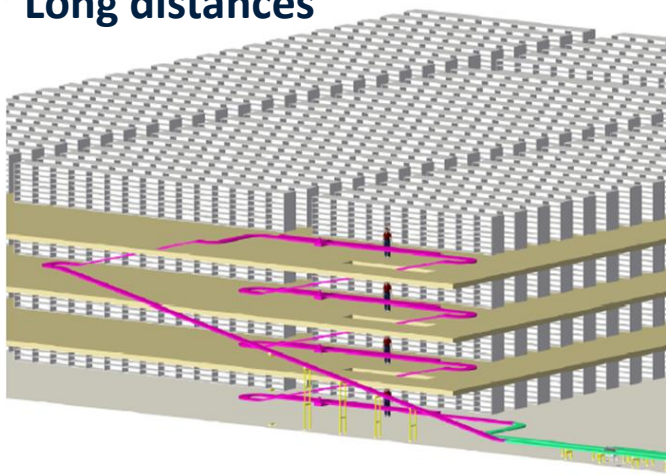
From the attick; around Y2K



3 types of orderpicking x 3 levels of mechanisation leads to only 9 directions!

3. Do all different concepts offer sufficient added value?

Conventional Orderpick → Long distances



Zoned Combined Orderpick → Mediate distances

Automated Dynamic Picking → Ultra short distances

Mechanised Pick & Pass → Short distances

Concepts develop along volume growth

3. Do all different concepts offer sufficient added value?

Miniload

- Fixed # cycles per aisle (single SBA)
- High storage density
- Typical medium-/slowmovers

OR

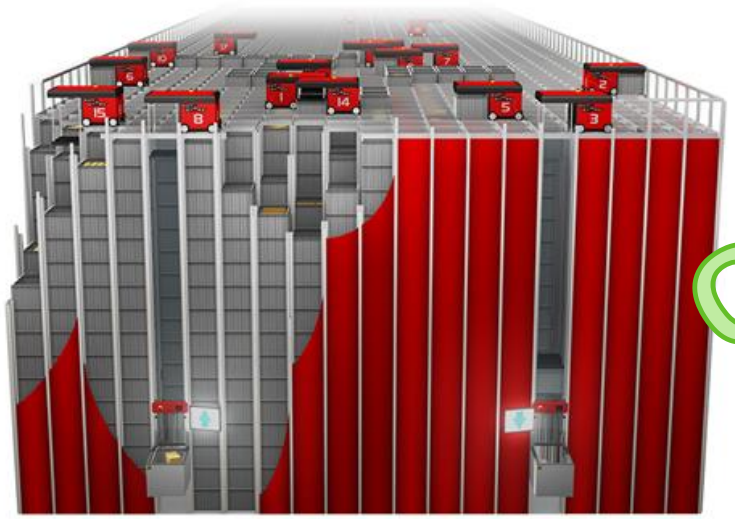
OSR Shuttle system

- Fixed capacity, but much higher than ML
- 'Overcapacity' to be used for fast-/medium-/ slowmovers or fast retrieval (short leadtimes)
- Investment comparable to Miniloads
- High requirements on floor flatness

Some say that soon the Miniload will be more or less obsolete!

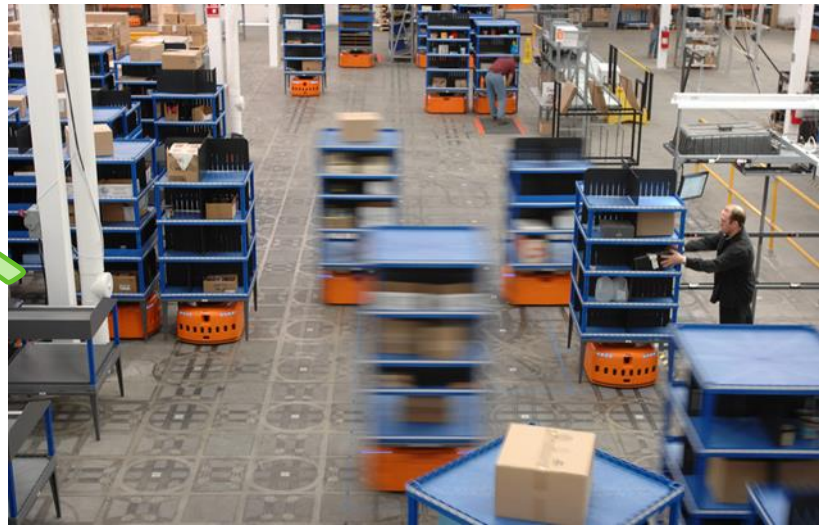
3. Do all different concepts offer sufficient added value?

Autostore



OR

‘KIVA’ system



- High storage density, but relatively low bay (suits existing buildings)
- Flexible capacity / easy to expand
- ‘Digging up slowmovers from below
- Lower investment due to lack of conveyors

- Not effective to move around complete pods (?!)
- Very flexible in capacity / easy to expand
- Lowbay, so suits existing buildings very well
- Easy & fast deployment; buy one and start off

Each concept has it’s own specifics which can be the decisive selection criterion

4. Automation is the solution (!), or not?

- "Mechanisation / Automation is rationalization of effort, not a goal for itself"
- Automation requires a quite high investment; mainly conveyor systems are quite expensive, investment in bins or costs for high quality pallets needed, additional WCS is required and in many times additional costs with regard to the building (floor, sprinkler).
- Do not underestimate the need for technical personnel or maintenance support.
- Pay back periods are usually longer than 3 years and often also longer then expected!! Therefore choice for automation should also be based on secondary arguments.
- 'Grey Advantages';
  - *Quality & customer satisfaction?..... Avoid mistakes / shorten lead times.....*
  - *Manageability?..... System vs. practical.....*
  - *Labor planning?..... Peak capacity vs. labor flexibility.....*
  - *Availability of labor?..... Increasing employment from SE-Europe.....*
  - *Labor satisfaction?..... Attractiveness and regional competition....*
  - *Ergonomics?..... Legislation restricts.....*
  - *Competitive edge?..... Doing better than the rest.....*
  - *Commercial image?..... Show abilities.....*

How to quantify (prove) the grey advantages?

5. Investing in ‘steel and bytes’ is also a economic-financial decision

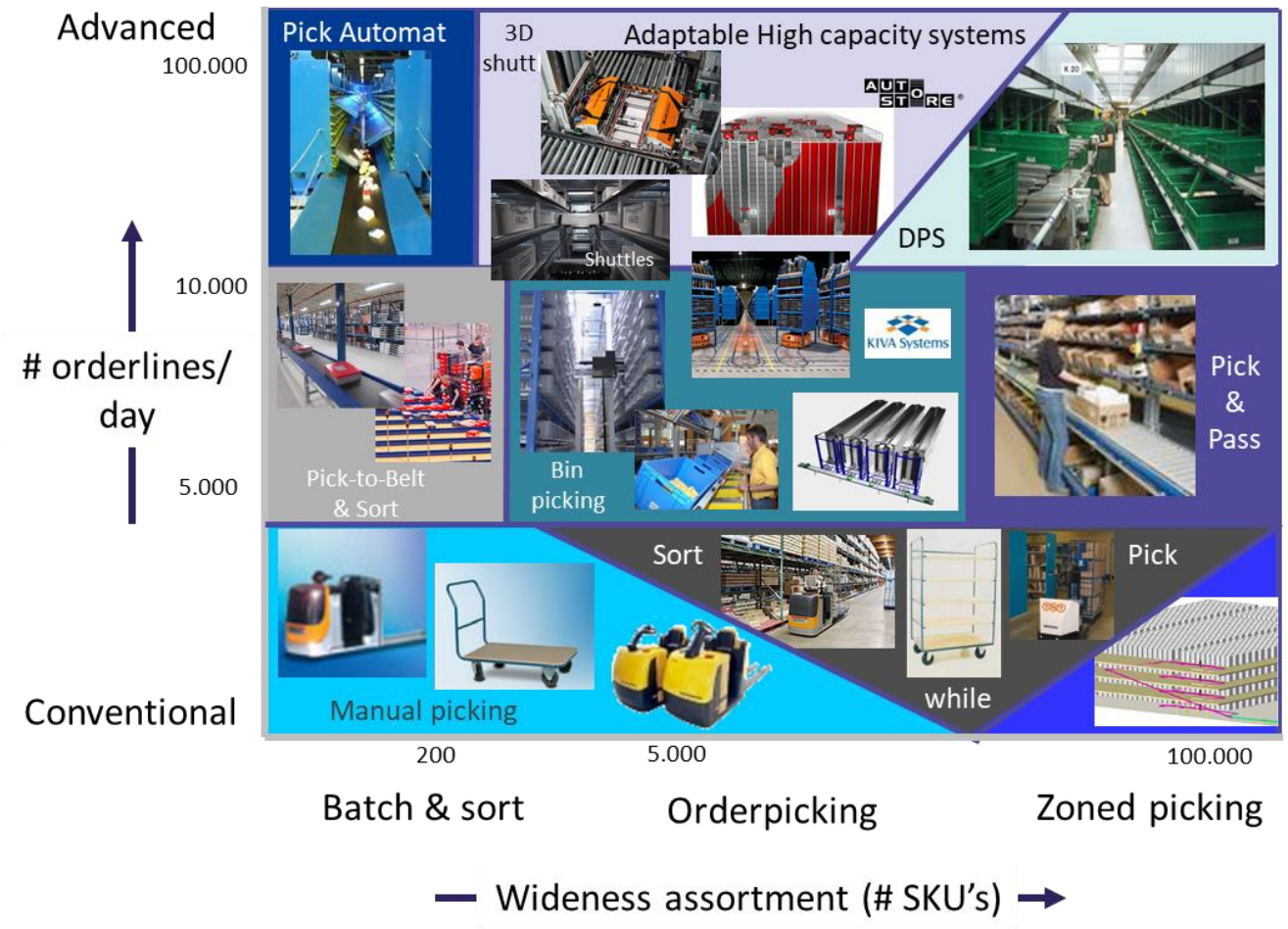
- Cost reduction is the ultimate goal, but investments have to be financed;
- Cost of capital is more than interest to be paid; equity has to make money (=generate yield);
- An investment starts to generate yield after the first year, but real significant earnings are generated after the payback period;
- For high shareholders value, a system should be sustained for a much longer operational life (up to 2x the payback period), but this is also a risk (obsoleteness);
- Logistics optimization has to compete with other (more) profitable investments!

		Required min. Brut Yield on capital					
Pay Back Period	Years	4%	6%	8%	10%	12%	15%
3 Years	*3*	*1,3%*	*2,0%*	*2,7%*	*3,3%*	*4,0%*	*5,0%*
(savings =33,33%/yr)	4	9,1%	9,9%	10,7%	11,5%	12,3%	13,6%
	5						17,6%
4 Years	*4*	*1,5%*	*2,3%*	*3,0%*	*3,8%*	*4,6%*	*5,7%*
(savings =25%/yr)	5	6,2%	7,1%	8,0%	8,8%	9,7%	11,0%
	6				11,6%	12,5%	13,9%
	7						17,6%
5 Years	*5*	*1,6%*	*2,4%*	*3,2%*	*4,1%*	*4,9%*	*6,2%*
(savings =20%/yr)	6	4,8%	5,7%	6,6%	7,5%	8,4%	9,8%
	7		7,7%	8,6%	9,6%	10,5%	12,0%
	8				10,9%	11,9%	13,5%
	9					12,8%	14,4%
	10						15,0%

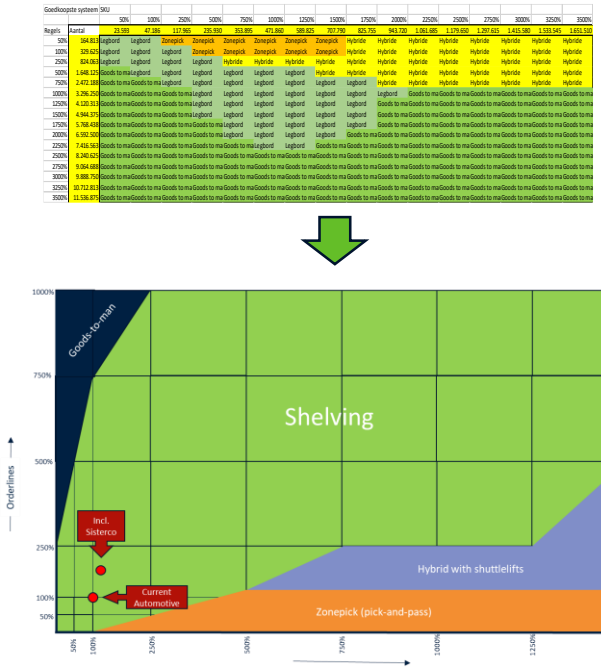
Values are average yield realised with investment after n years

A high avg. yield can only be met by a long operating life of the system

6. Out of the swamp by putting everything in perspective



Example from automotive DC



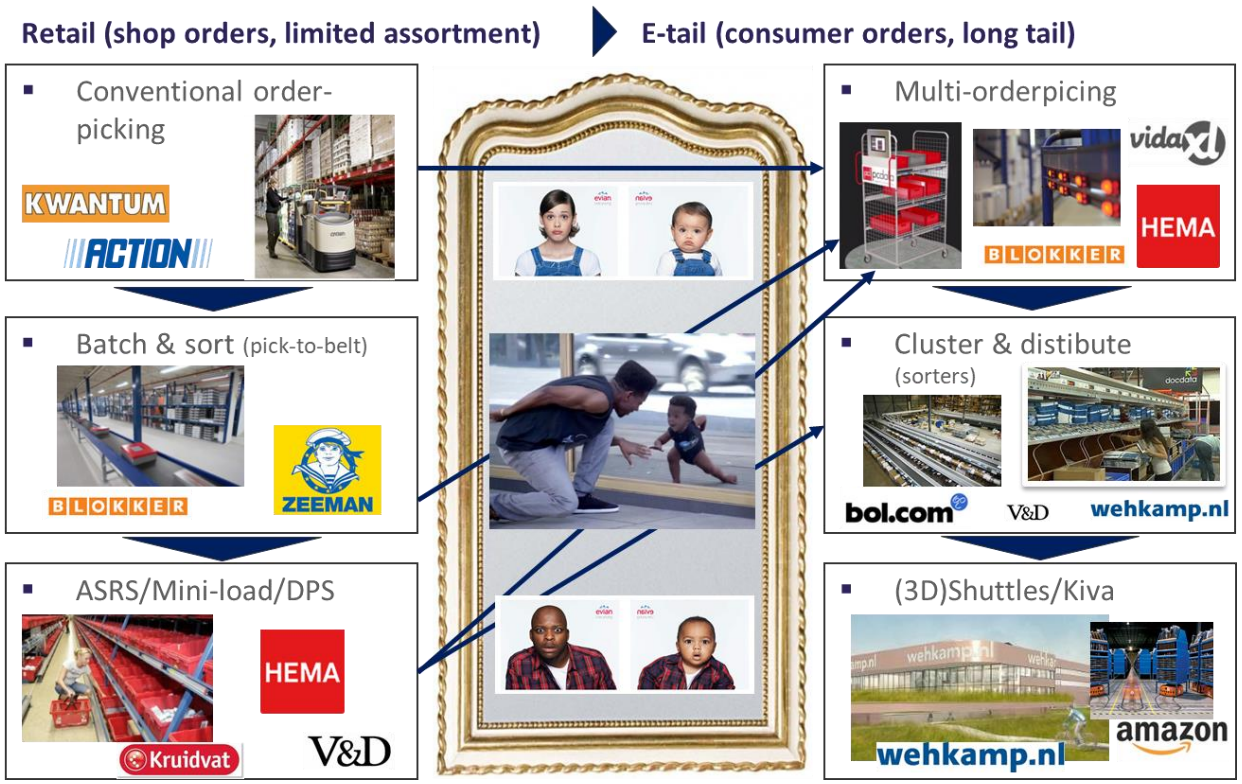
With a relatively basic calculation model, initial position can be assessed

7. It comes down to natural development (growing up)

eFulfilment requirements

- Small orders, Long tail assortments;
- Short order lead times;
- Uncertain growth forecasts;
- Supply Chain agility;
- Fast system deployment;

- Availability;
- Scalability;
- Cost-efficiency;
- Maintainability;
- Sustainability.



Initially eFulfilment had to learn from spare parts logistics, nowadays it should be the other way around (e-com re-invented themselves)

8. In the near future it gets worse (1000+ possibilities)