
SALIDA DE EMERGENCIA
06
17
16

Learning: Key financial drivers for Orange Box

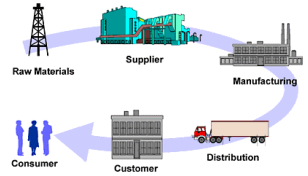
Financially attractive on E2E basis

Standard Container

Low cost reverse logistics

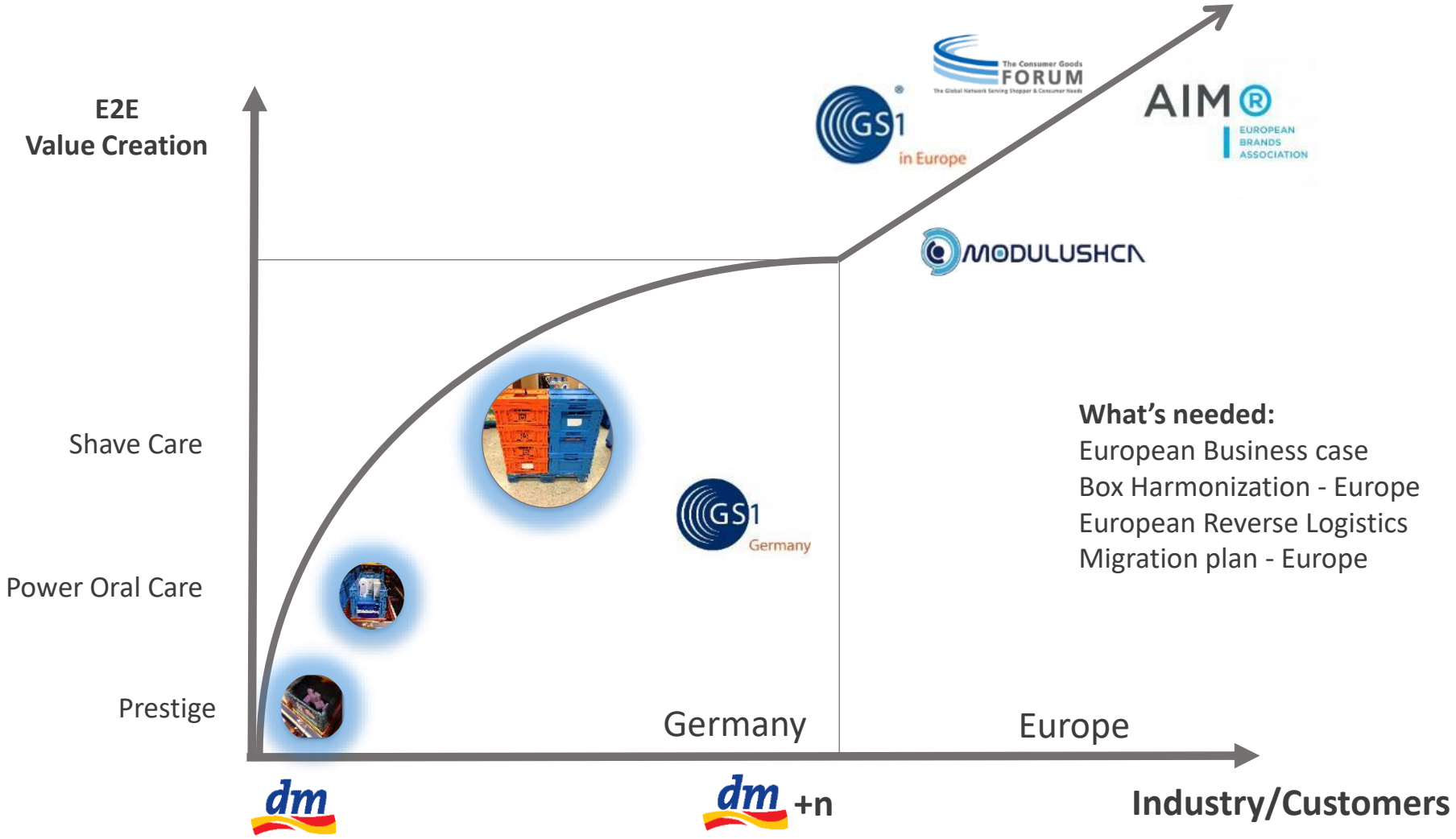
High container cube utilization

Low cost option to pack container

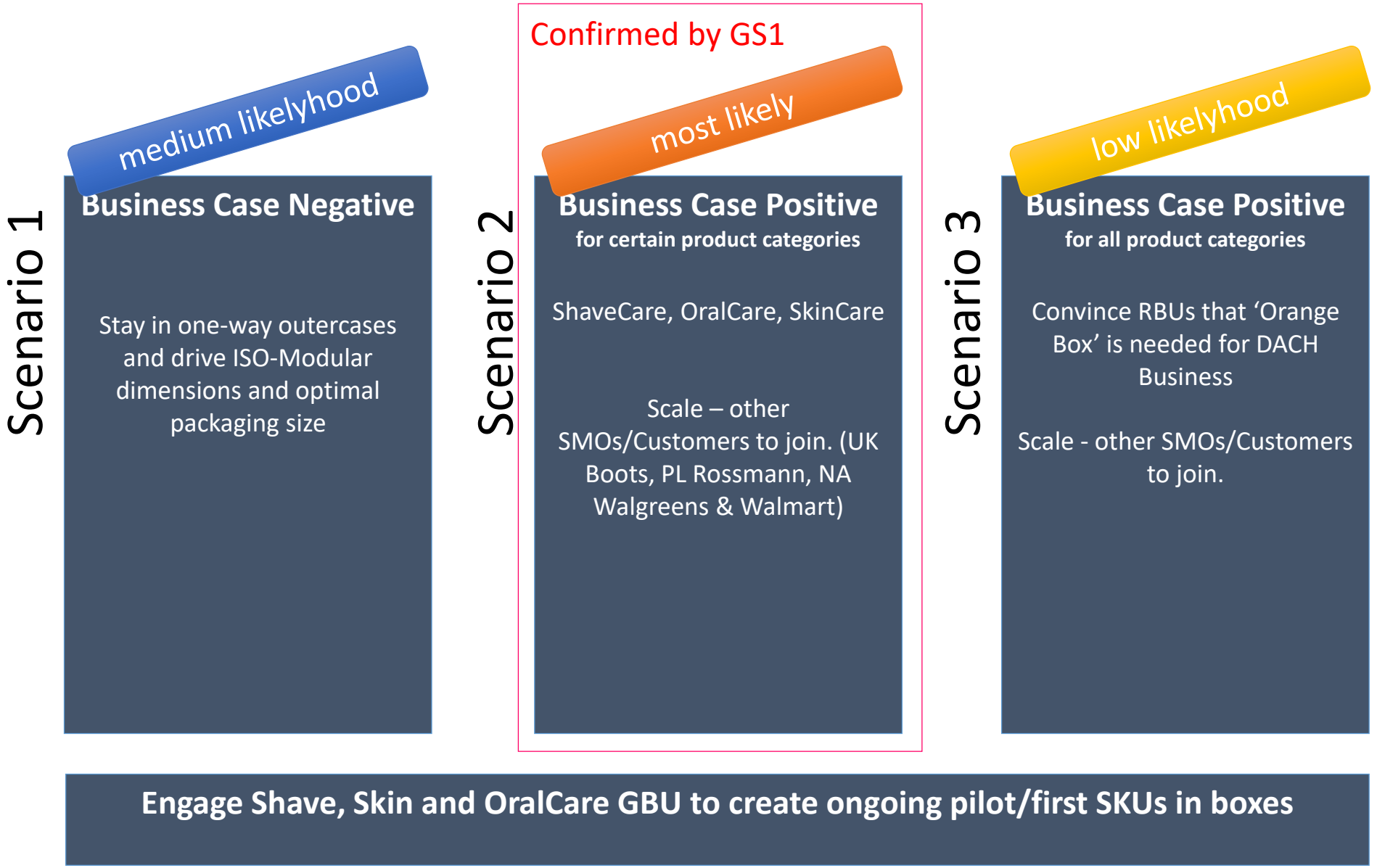


Short Supply Chain length

Next Steps in reusable container project

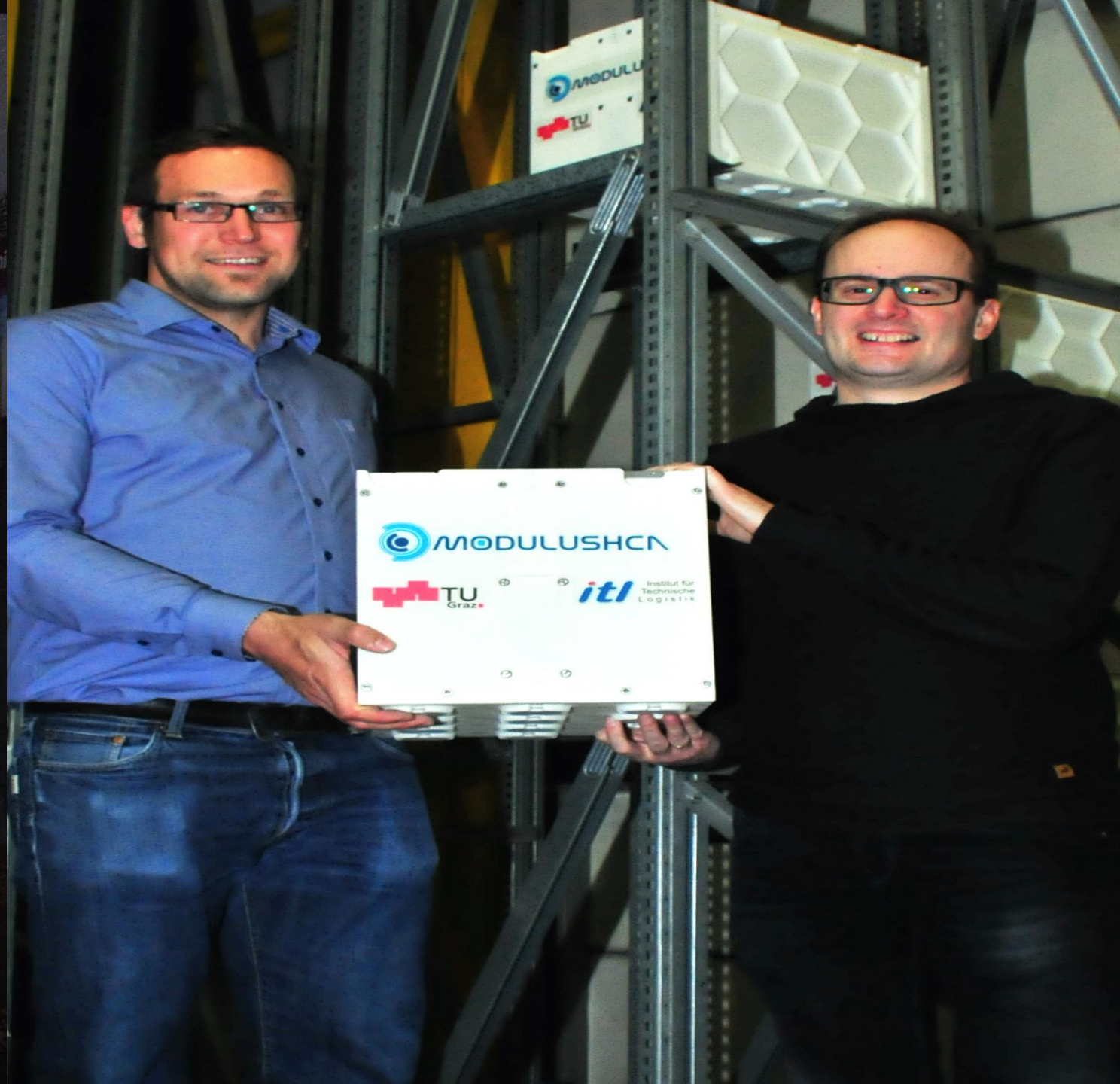



With one BOX!
00:11
01:59


Confirmed by GS1
medium likelyhood
most likely
low likelyhood
Scenario 1
Business Case Negative
Stay in one-way outercases and drive ISO-Modular dimensions and optimal packaging size
Scenario 2
Business Case Positive
for certain product categories
ShaveCare, OralCare, SkinCare
Scale – other SMOs/Customers to join. (UK Boots, PL Rossmann, NA Walgreens & Walmart)
Scenario 3
Business Case Positive
for all product categories
Convince RBUs that 'Orange Box' is needed for DACH Business
Scale - other SMOs/Customers to join.
Engage Shave, Skin and OralCare GBU to create ongoing pilot/first SKUs in boxes

But we want to go global…….2017


CREATIVITÀ
NIENTE
SENZA UN PROGETTO
VIA NIZZA, 152 • 06 8557078
QUALIFICHE PROFESSIONALI UFFICIALI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IPIC 2017

Hyperconnected Pickup & Delivery Locker Networks

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Pickup & Delivery Lockers

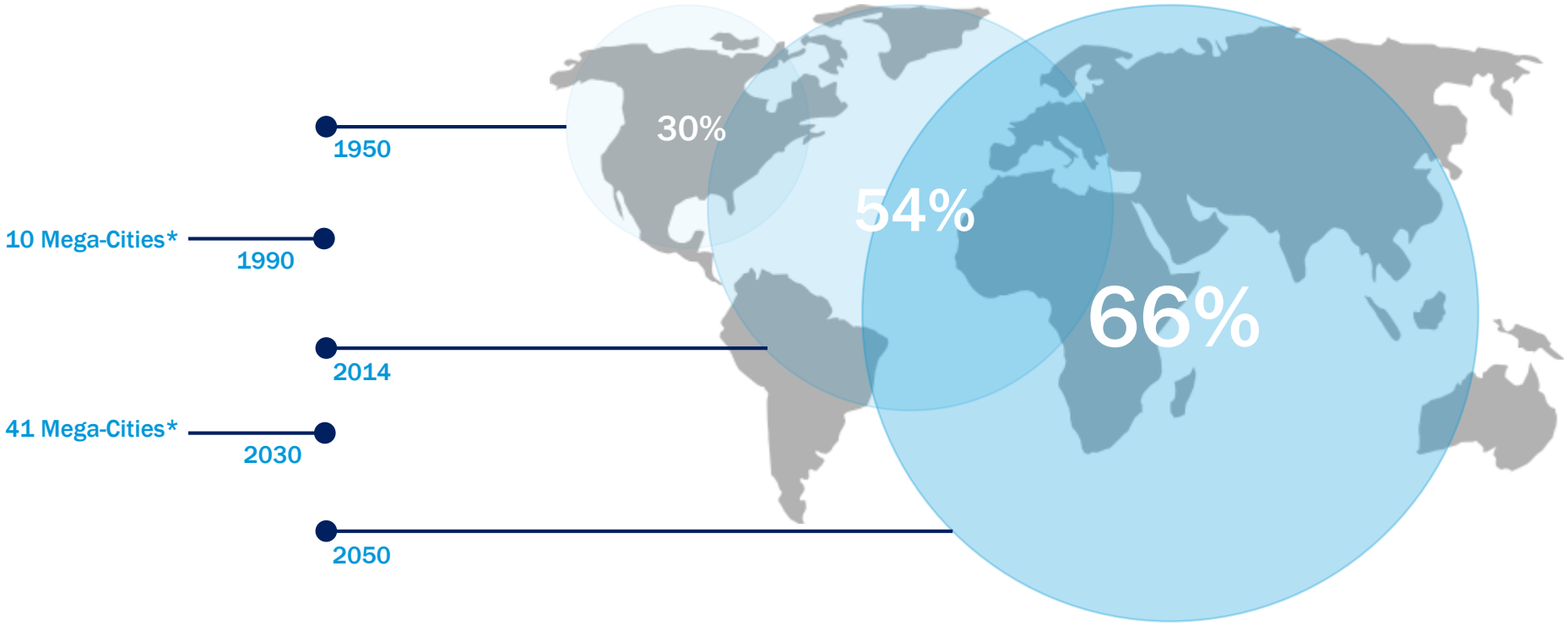
Sources: dhl.com, inpost.pl

Presentation Outline

- Why Pickup & Delivery Lockers?
- Hyperconnected City Logistics
- 4 Incremental Designs for P/D Lockers:
  - Fixed Configuration Smart Locker Banks
  - Exploiting Modular Towers
  - Exploiting Modular Lockers
  - Exploiting PI Handling Containers
- Conclusions

Why Pickup & Delivery Lockers?

World's Population Global Urbanization

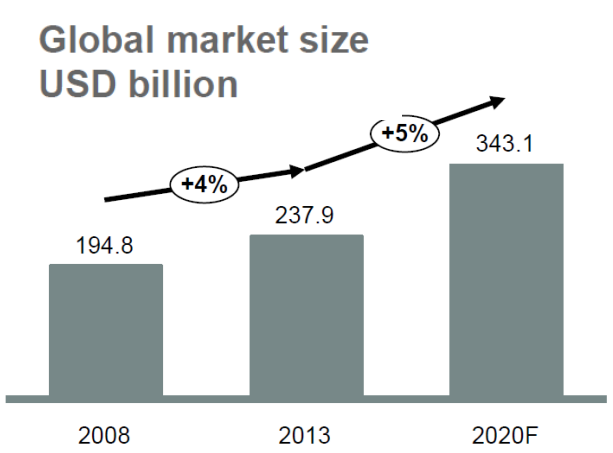


*Cities of 10+ millions inhabitants

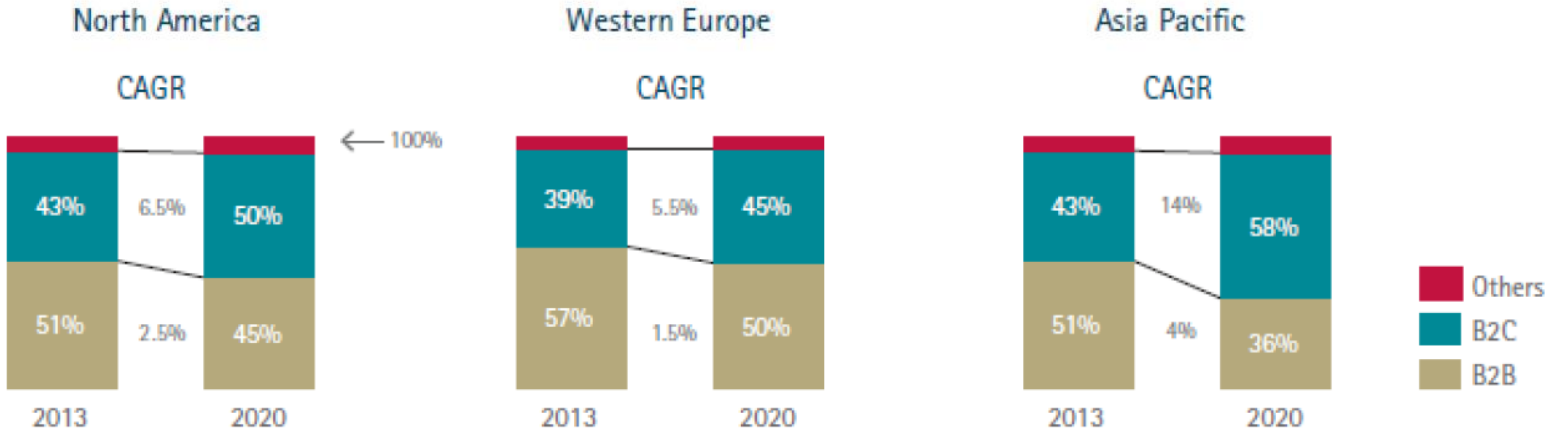
Data from United Nations' World Urbanization Prospects – 2014 Revision (https://esa.un.org/unpd/wup/)

Why Pickup & Delivery Lockers?

Courier, Express & Parcel (CEP) Industry Trends



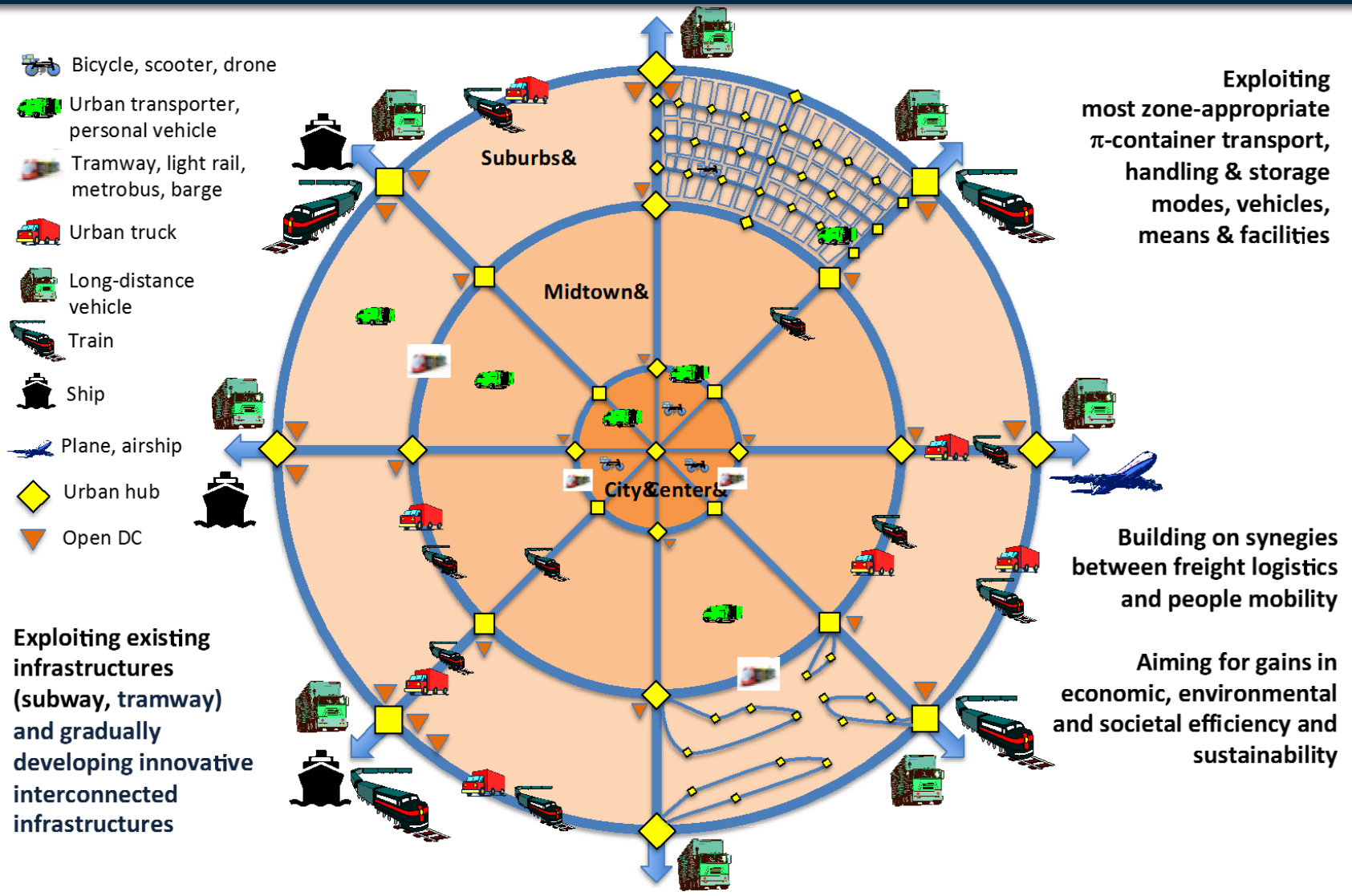
B2B versus B2C versus other volume [3] breakdown



Market	APAC	N. America	W. Europe	Europe Rest	Middle East	S. America	Africa
2013 share	32%	33%	23%	5.7%	3.5%	2.5%	1.5%
2020 share	38%	30%	19%	5.3%	4.1%	2.5%	1.9%
2013-20 CAGR	15%	9%	5%	8%	7%	5%	10%

Sources: "Adding Value to Parcel Delivery", Accenture 2015. https://www.accenture.com/_acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Dualpub_23/Accenture-Adding-Value-to-Parcel-Delivery.pdf

Hyperconnected City Logistics



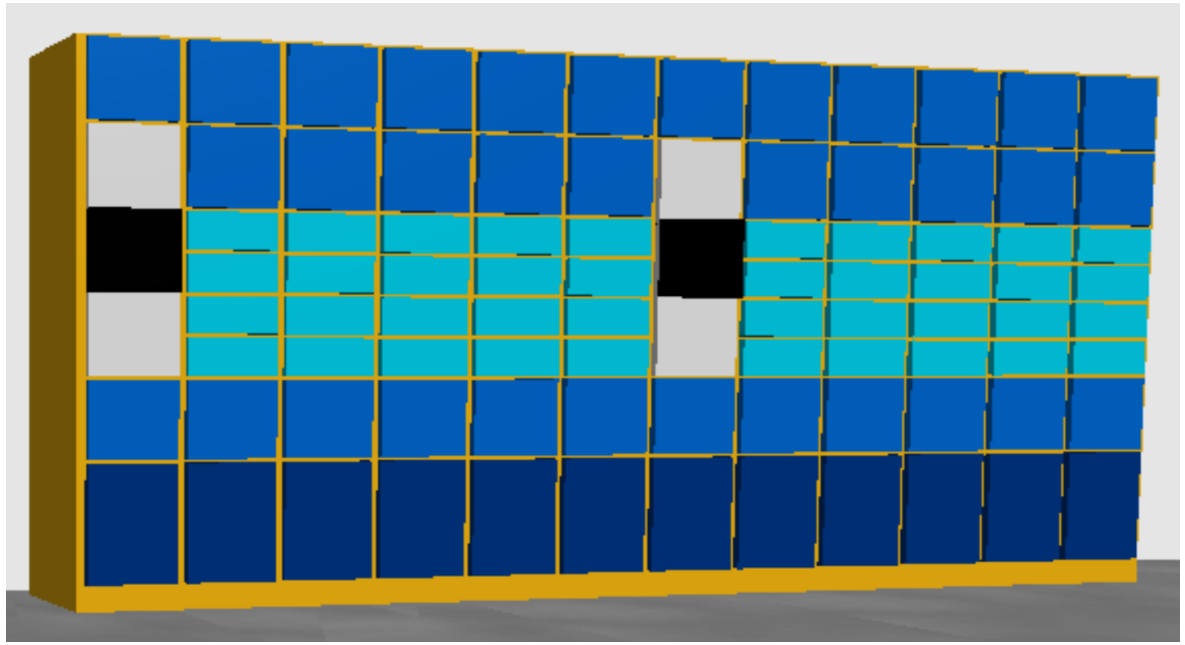
Source: Crainic & Montreuil (2015): "PI Enabled Hyperconnected City Logistics", International City Logistics Conference, Tenerife, Spain.

4 Incremental Designs for P/D Lockers

- Urban density more and more critical for efficiencies
- A growing B2C market
- Hyperconnected City Logistics framework
- P/D Lockers expanding worldwide

What design makes sense for a pickup & delivery locker bank?

Fixed Configuration Smart Locker Bank



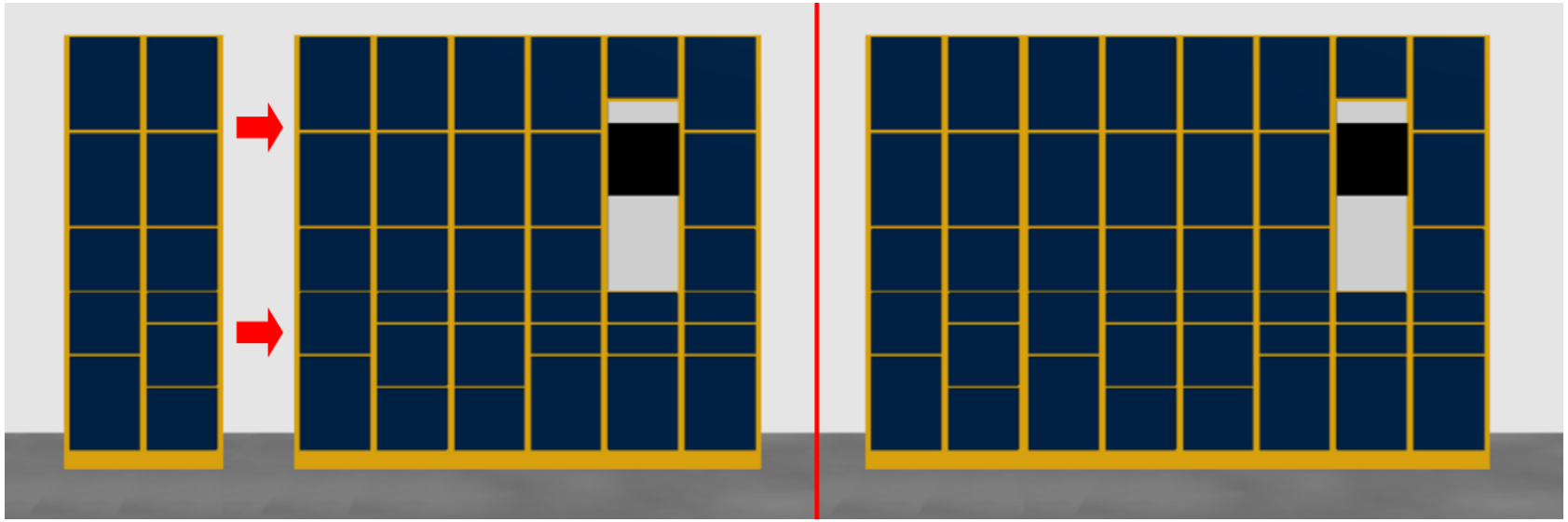
Main advantages:

- One-time implementation
- Opportunities for economies of scale (manufacturing standard units)

Main disadvantages:

- Rapid obsolescence in growing / declining markets
- Cannot adapt to variation of delivery patterns (fixed configuration of locker sizes)

Exploiting Modular Towers



Main advantages:

- Can adapt its global capacity over time
- Advantageous in highly seasonal markets (e.g. capacity requirements doubling before Christmas)

Main disadvantages:

- Requires inventory management and distribution systems for modular towers
- Requires capacity management policies (frequency etc.)
- Can be difficult to nicely adapt to variation of delivery patterns

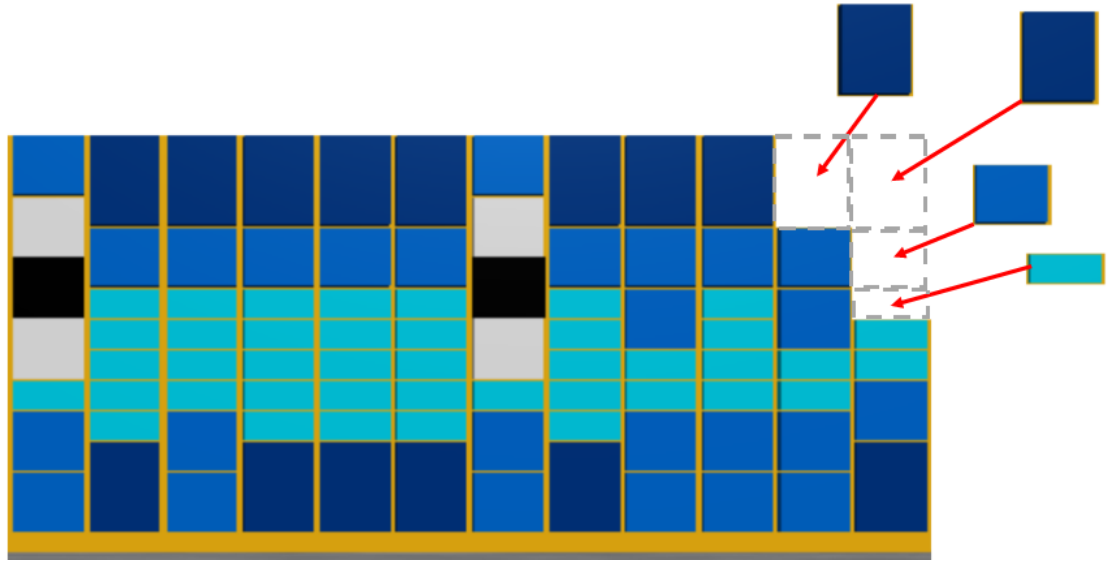
Exploiting Modular Lockers

Main advantages:

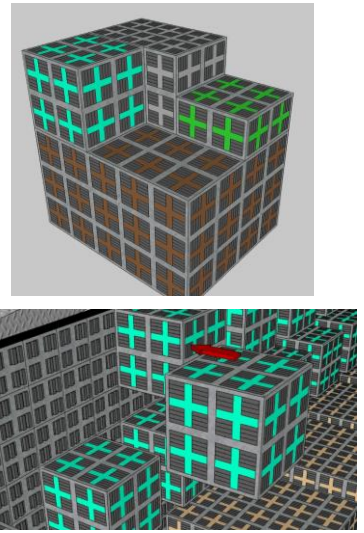
- Can adapt its global capacity over time
- Can adapt to variation of delivery patterns

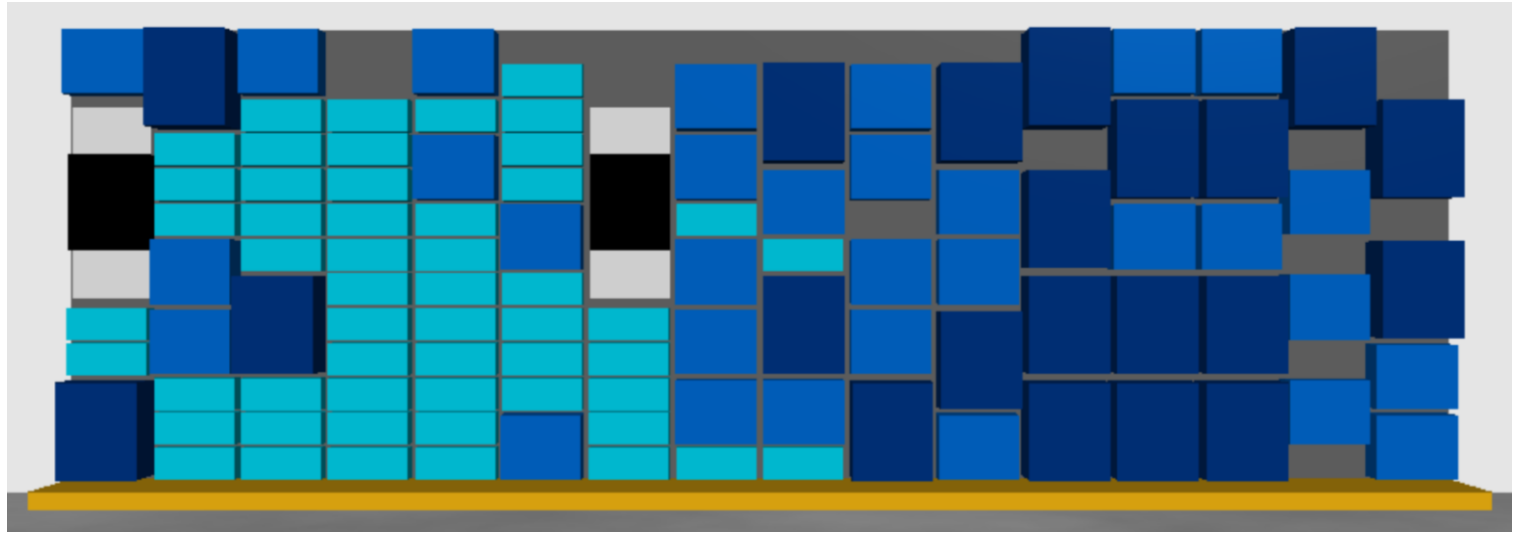
Main disadvantages:

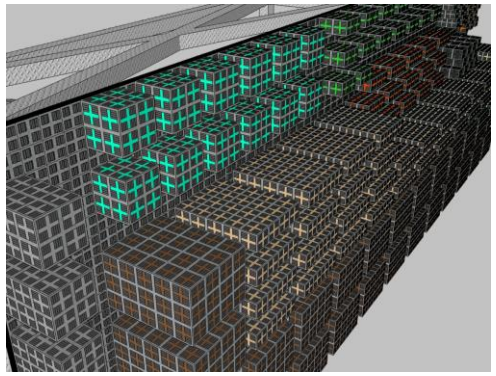
- Requires inventory management and distribution systems for modular lockers with a variety of modular sizes
- Spare modules inventory
- Requires capacity management policies (frequency etc.)



Exploiting PI Handling Containers







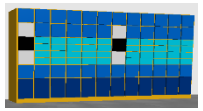
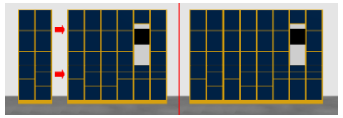
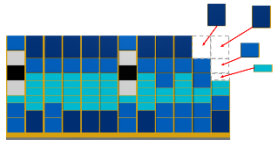
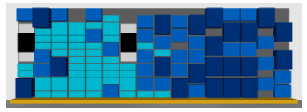
Main advantages:

- Handling dynamics and security of goods
- Highly flexible capacities
- PI-boxes are managed globally (resource not specific to smart lockers)

Main disadvantages:

- Requires full implementation of PI-containers as a mean of transportation, handling and storage
- Requires Physical Internet Hyperconnectivity of logistics networks to ensure dynamic circulation of PI-containers
- Technology challenges

Conclusions

	Option	Main advantages	Main disadvantages
	**Fixed**	• Implementation costs • Economies of scale	• Adaptation to demand variability
	**Modular Towers**	• Adaptation to global demand variations	• Adaptation to delivery patterns variations • Spare modules inventory • Capacity management • Special distribution equipment
	**Modular Lockers**	• Adaptation to global demand variations • Adaptation to delivery patterns variations	• Spare modules inventory • Capacity management • Special distribution equipment
	**π-Boxes as Mobile Modular Lockers**	• Highly flexible configuration and capacity • High P/D efficiency	• Relies on emerging PI containers • Technology challenges

Comments and Questions

Thank you!

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Modular Solutions for Mobile Hospitals

A Physical Internet Consideration

Stephen Spulick, Grainne Lynch, Changliang Liu, Suzanne Marcotte
IPIC 17
Graz, Austria

Disasters, Healthcare and Preparedness

- Employment
  - Planned
  - Unplanned
    - Preparedness - Repair - New Construction (Military/Civilian)
    - Humanitarian (Military/Civilian/NGO)
    - Contingency (Military)

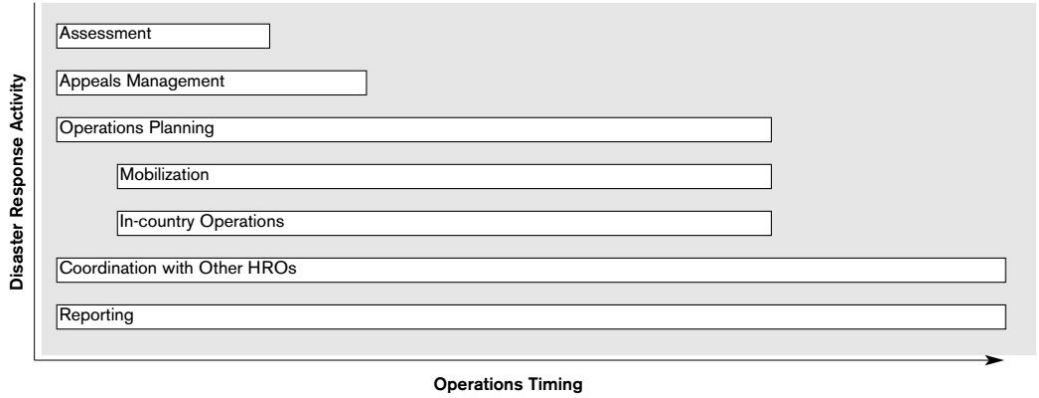
Disasters, Healthcare and Preparedness

- Brief History
  - US Civil War (1863-1865)
    - Ambulance Corps (Surgeon General Hammond)
    - Evacuated >9,400 wounded from Antietam battlefield in 1 day
  - WWII (1939-1945)
    - US Army COL Carroll modularizes and shrinks hospitals for mobility in the Pacific Theater (25 beds/29 staff/Man-portable/lacks full-functionality)
  - 1950s
    - Ambulances begin change to mobile hospital-like capabilities after the 1952 UK Harrow and Wealdstone train disaster (112 dead/ 340 injured)
  - Modern Day
    - 1st Remote controlled Telesurgery - “the Lindburgh operation” (Surgeons in New York, gallbladder patient in Strasbourg, France)

Response Speed

Supply/Material Velocity

- ❏ A Supply Chain bridges Readiness and Response
- ❏ Capability expense requires pre-planning
- ❏ Transportation to affected area may be extremely limited (Asset availability and infrastructure damage)



1. <24 hrs Assessment team launched
2. 36 hrs Appeals made - no supplies = no relief
3. Scarcity drives up costs
4. Political and environmental assessments ongoing

Response Variability

- Each requirement is unique
- Pain Points drive responses for Humanitarian Relief Organizations (HROs)
    a. Donor scrutiny of funding flow
    b. Organizational culture and turnover
    c. Lack of institutional learning
    d. Little pre-event collaboration
    e. Ineffective technology leverage

Facts

- Current shipping configurations do not optimize cube for Mil/Civ or NGO
- Manufacturers have little incentive to design and package healthcare material for PI use
- Equipment/material requirements are tied to capability (Operating Room, Intensive Care Unit, Intensive Care Ward etc.) and are known
- Certain capabilities are used more frequently

Research Questions

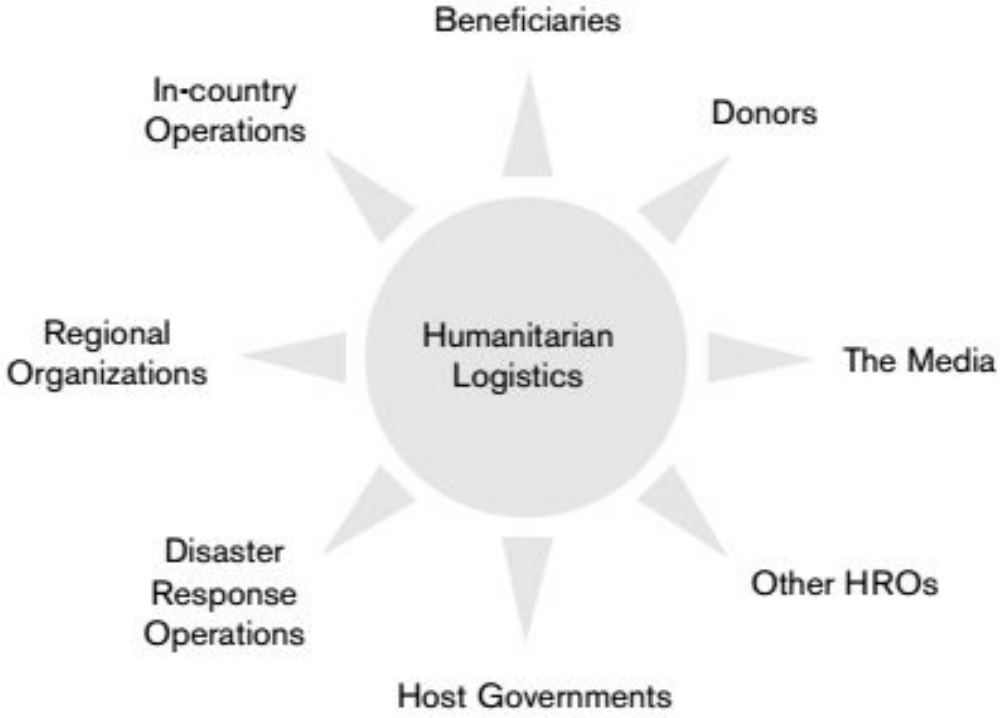
Qualitative-

- ❏ What mobile hospital material and equipment is most inefficient in cube use?
- ❏ What are the greatest standardization challenges for PI shipping principles?
- ❏ Will organizations share storage/configuration to optimize fast response? (Strategic Dispersion)
- ❏ Can ISO assist in worldwide standard development for critical equipment?
- ❏ How likely will changes occur?
- ❏ What impetus is required for change to occur?
- ❏ Who would make the change decision to use PI principles?
- ❏ Where is optimal location of shared materiel/equipment

Hypotheses

- A Community of Practice is possible between Mil/Civ and NGO mobile hospital capability deployers
  - Specialized conferences and publications will be attended
- Medical Equipment acquisition will incorporate PI storage and clinical viability
- Medical Material storage configuration can be standardized based on PI Standards
- Medical Equipment will be shared among participating capability deployers and tracked by PI identified for accountability
- Communicating with one voice to donors, suppliers, and logistics service providers will induce change to PI practices and methodology
- Competent logistics managers can be hired and retained

Stakeholders



Non-Sector Partners:
Corporate Logistics
Fritz Institute
Academia

Research Concerns

- Commercial Off the Shelf (COTS) Medical Equipment is subject to shock, humidity, heat cyber-security challenges to maintain viability
- Capability positioned correctly to respond to disaster type requiring specialized equipment
  - Cold/hot weather
  - Urban/rural
  - Mountainous/ sea level
- Interoperability between participating organizations (ISO)
- Design for emerging delivery technology (Drone, UAV, driverless)