24

**Contribution of Physical Internet Containers to mitigate the risk of cargo theft**

Yanan Yang¹, Ph.D., Eric Ballot¹, Professor, Ph.D., and Miguel Gastón Cedillo-Campos², Ph.D.

1. Mines ParisTech, PSL, 2. Mexican Institute of Transportation

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**Context: Cargo Theft**

Definition: Criminal taking of any cargo including, but not limited to, goods, chattels, money, or baggage that constitutes, in whole or in part of a commercial shipment of freight moving in commerce” (FBI).

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**Existing solutions (Burges 2012):**

1. Enhance physical security, i.e., using hard protective cover trailers.
2. Enhance information security, i.e., using sensors and alarm system.
3. Insurances and law enforcement.

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**How innovative pooled goods encapsulation solutions mitigate cargo theft risks? Physical Internet Containers (PICs) as an example**

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**Major differences of using PICs**

1. Modularity and Physical Protection
2. Mix of products in each shipment

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**Results Analysis & Conclusions**

- **Average percentage savings per item delivered**
- **PERCENTAGE OF SAVINGS: BEST SCENARIO**
- **Asset Utilisation in best scenario**

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**5 main levers for PICs**

- **More secured distribution**
  - Interlocking property of modular boxes
  - Mixed and unknown cargoes reduce the effectiveness of illicit resale channel
  - Enhanced traceability with sensors
  - Electronic seals

- **Improved cube utilisation**
  - Less space utilisation by modularity
  - Stackability
  - Capability of containing different products

- **Efficient reverse logistics**
  - Reduced transportation costs by standardisation of boxes

- **High handling productivity**
  - Less non-value adding operations
  - Efficient automatic picking system
  - Shelf-ready delivery

- **Lower environmental footprint**
  - Reduced raw material consumption
  - Less CO2 emission by reduced transportation cost