

Implementing the Physical Internet real-world interface: Beyond business models, the devil is in the details

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Executive Summary

The implementation of a PI is bound to allow firms to reach higher levels of efficiency through – among other things – a redefinition of logistical backbones along the value chain (e.g. [Montreuil, 2011](#)). This paper takes a “when-the-rubber-meets-the-road” perspective on the challenges associated to the PI’s implementation. The purpose of this paper is to outline issues for consideration when implementing large-scale PI initiatives since those entail a range of issues that proprietary solutions are not confronted to.

The PI will force firms to adapt to a new competitive reality and, should the costs of implementing PI initiatives be reasonable for firms in light of potential returns, PI initiatives are bound to become mainstream. The PI rests on efficient coordination between firms and individuals as decisions made by intermediaries along the supply chain will affect the senders, the other intermediaries, and the receivers of merchandise with them having minimal or non-existent input in the process. For individual firms to enter in relationships a coordination mechanism will need to exist, markets and networks are the most useful. This means new business models will ensue and contracting will need to be easy and yet manage complex chains of potential liabilities.

As such, PI business models will need robust and distributed IT assets fully integrated and seamless to actors. Data management will be critical since proprietary data risks finding themselves on open source channels. Beyond networking firms and objects, interpersonal interactions and communication (within firms or on an informal basis) will be necessary for PI initiatives to be successful in a mobile and user-centric environment.

Physical border crossings may prove a challenge as border management processes are better geared to deal with proprietary logistical infrastructures rather than open source ones. A PI

infrastructure needs a novel distributed security paradigm in compliance with government requirements.

The future is promising for PI initiatives. PI business models are bound to dramatically reshape government (e.g. eGovernment initiatives) and industry (e.g. automotive, aerospace, mobile telecoms, etc.) as their impacts alter global value chains, firm strategies and more. In light of this paper, an important deduction is that particular attention to infrastructure management and maintenance, value creation and sharing between PI participants, ease of shipping and reception, and real-time tracking will be important drivers for adoption.

References

Montreuil, B. (2011). *Toward a Physical Internet: meeting the global logistics sustainability grand challenge*. Logistics Research, v3no2, 71-87. doi: 10.1007/s12159-011-0045-x