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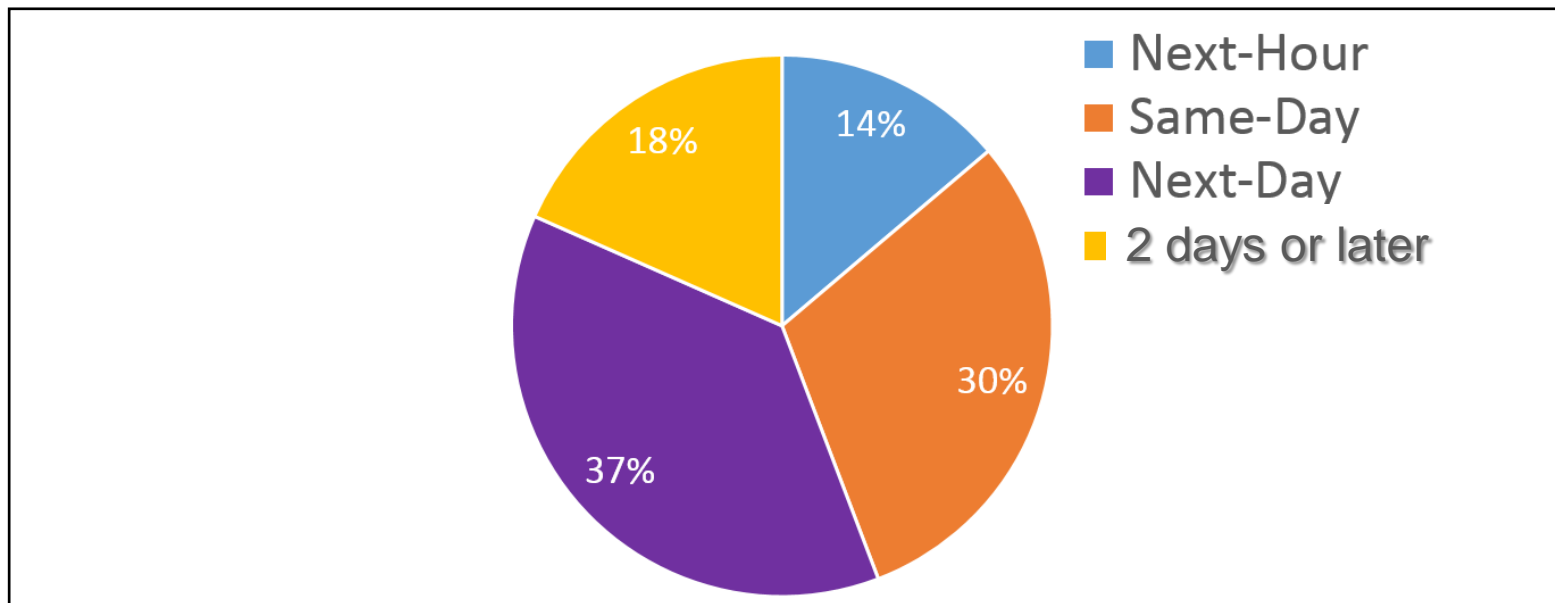
E-commerce & the Physical Internet

Kees Jan Roodbergen

E-commerce

> A big logistics challenge

- Market is growing tremendously fast
- Massive demand peaks
- Many delivery attempts fail
- CO2
- Nuisance in neighborhoods
- Continuous shortening of lead times



E-commerce

> The best place to start with PI?

- Low fill rates of trucks and vans
 - Many suppliers,
 - many consumers,
 - Many returns
- No decade-old habits to overcome
- More flexibility required than most current systems have

Are we going the right way?



Are we going the right way?



Are we going the right way?



My way of measuring PI potential

- > Back in the day, things were
 - Nearby
 - Self-organizing
 - Customized
 - Adaptive

- > But large corporate structures could deliver
 - higher quality
 - lower prices

- > Now it is becoming feasible to have it all

Nearby

Micro-hubs



From warehouse to wareroom





In the future

- > The last-mile will be shorter. Smaller operations nearby customers do the order fulfillment.
 - Exit for micro-hubs?

- > Of course, the company may be large. But the size of the operation matches the size of a street or neighborhood.
 - Also more opportunities for small companies or individuals.

- > Logistics operations become as visible in cities as stores are now.

In the future

- > There will be no stock for purchase in stores.
 - All purchases will be delivered (instantly if desired).
- > Stores will disappear, except for showrooms.
- > With a PI-based delivery network, there will be no single-brand pick-up points.

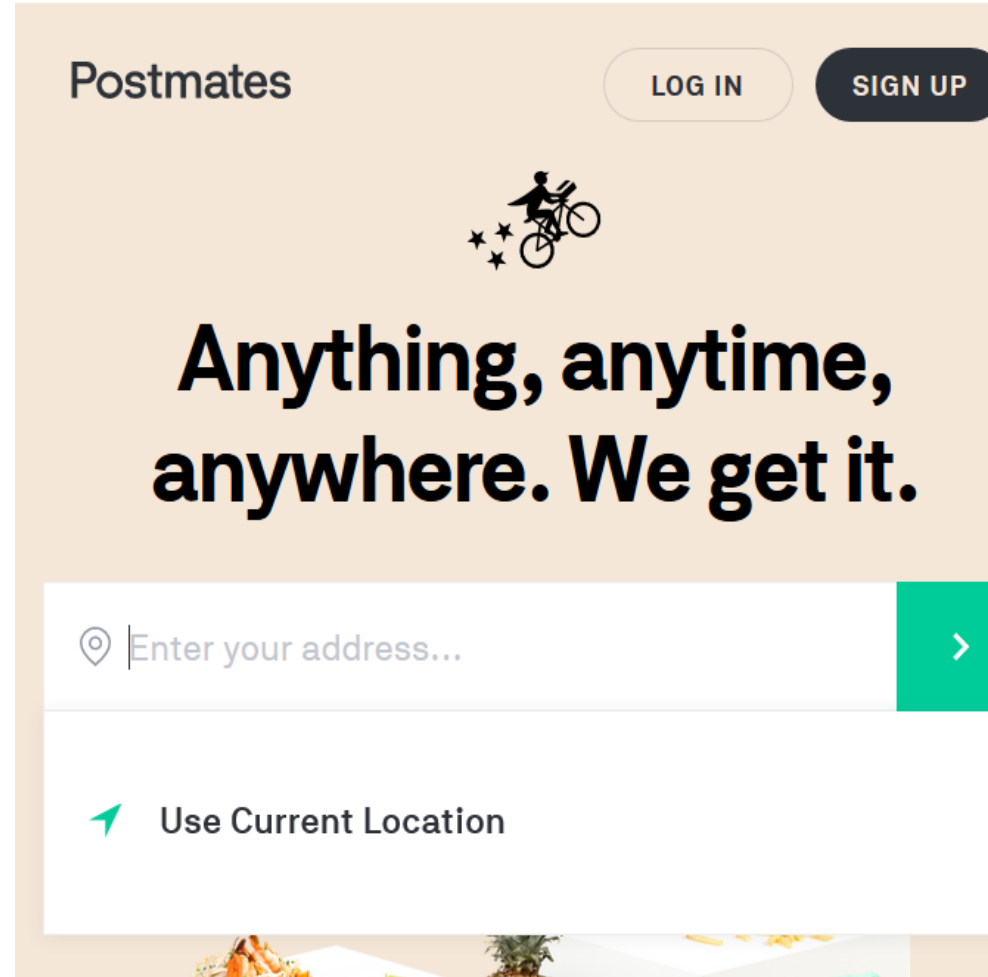
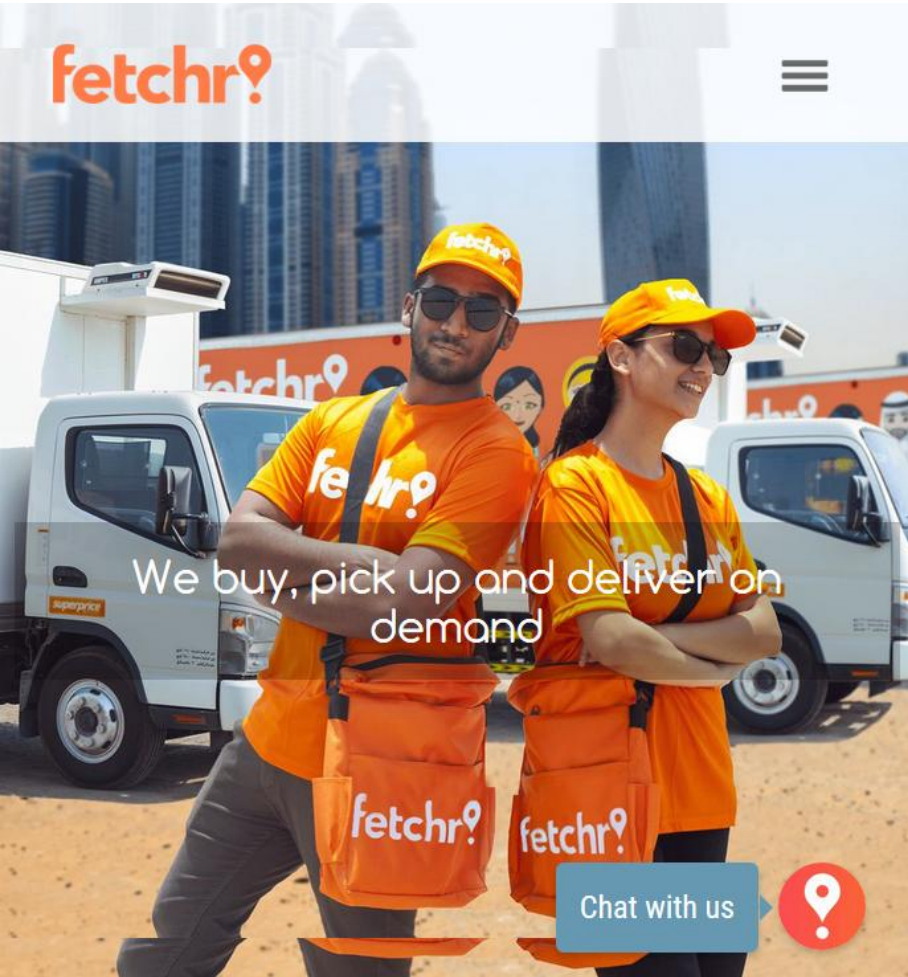


Self-organizing

Autonomous vehicles



Social networking solutions



In the future

- > A fine-grained delivery system will evolve.
- > Will a self-organizing, decentralized system be providing service to everyone?
- > As with public transport, will subsidies be required to maintain service in remote areas?
- > Or will the self-organizing system find a way to solve this?
 - Neighbors may develop a system based on bartering.

Customized

Custom packaging

- › Custom packaging threatens the use of PI containers.
 - Custom packaging is more space efficient.
 - But only as long as retail packaging does not change
 - After that, no need for custom packaging, enter PI container



Customized delivery

- > Often we do not know the delivery person.
 - Perfect planning,
 - Perfect service according to company standards,
 - Not personal, not customized.
- > Personal means
 - it is the same employee every time.
- > Customized means
 - service is perfect according to the customer's definition.



Living room logistics



WEBSHOPS

VIAPUNTEN

TRACK & TRACE

OVER ONS



Verbind je buurt en verdien wat bij

Neem je ook vaak pakketjes aan van de buren?

Wil je meer contact met de wijk?

[Word ViaPunt >](#)

In the future

- > Now typically the shipper chooses the delivery company.
 - Consumers may be offered a few pre-specified options.

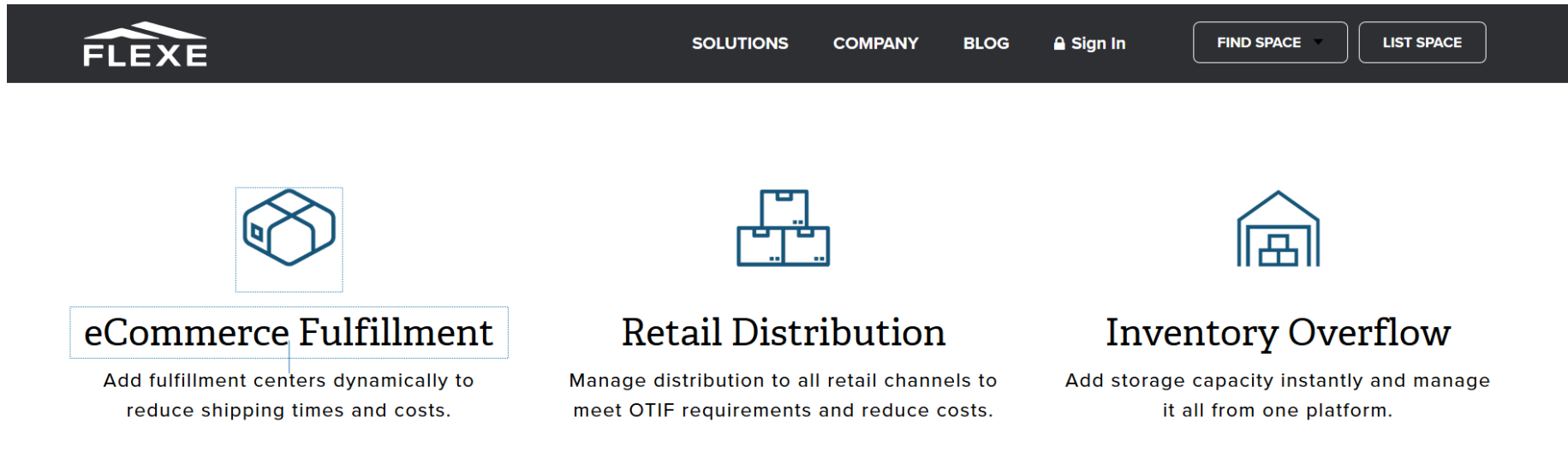
- > In PI, the consumer may have his/her own delivery agent for the last-mile.
 - The shipper arranges for the first part of transport

- > This implies control may be shifted from shipper to consumer during transport.

Adaptive

Sharing economy

- > Sharing is not only for consumers, also for companies.
 - Storage space sharing
 - Truck sharing



The screenshot shows the FLEXE website header with navigation links: SOLUTIONS, COMPANY, BLOG, and Sign In. There are also buttons for FIND SPACE and LIST SPACE. Below the header are three service cards:

- eCommerce Fulfillment**: Add fulfillment centers dynamically to reduce shipping times and costs. (Icon: three boxes)
- Retail Distribution**: Manage distribution to all retail channels to meet OTIF requirements and reduce costs. (Icon: two boxes on a truck)
- Inventory Overflow**: Add storage capacity instantly and manage it all from one platform. (Icon: a warehouse)

In the future

- > All inventories will according to current definitions qualify as “rolling stock”.
 - Stock will be moved more often than currently.

- > Role of wholesalers
 - Currently they are being cut out of many supply chains.
 - In PI it is easier to achieve inventory pooling advantages across locations.
 - A revival for wholesalers?

You want it now? We'll deliver it now!

Introducing Fetchr **NOW** Delivery

Say hello to our newest and coolest service: NOW. We'll pick up your package in less than 45 minutes and deliver it anywhere immediately! Whether it's food, cheques, documents, gifts, keys..etc. You name it, we'll take care of it. All you have to do is choose the "NOW" option, and the nearest driver to the pickup location will be there ASAP to get the package and deliver it; no stops. It's the fastest courier service available and it's only a few taps away!



In the future

- > **PI is better for the environment**
 - For e-commerce also because consumers use their car less for shopping.

- > **Threat from e-commerce**
 - single-item delivery by AGV, or via the pizza-model
 - Single-stop routes are not as good as multi-stop routes

- > **Need for micro-scale PI networks, that allow for ride-sharing of parcels even when there is no time.**
 - Connect and disconnect while moving?

Conclusions

- > Are we moving towards PI already?

- > PI check list
 - Nearby
 - Self-organizing
 - Customized
 - Adaptive



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