LOGISTICS AND FINTECH

NEW TECHNOLOGIES ON THEIR WAY TO NEW MARKETS

EXPLORATORY PAPER APRIL 2017

NEW TECHNOLOGIES ON THEIR WAY TO NEW MARKETS.

Dinalog and Holland Fintech collaborate on innovation in an ambitious program: Logistics and Fintech. Together with several parties we aim to share knowledge and seek collaboration throughout the logistics value chain. For sustainable, collective solutions that support the continued development and application of Fintech in logistics.

WHY

- The world is changing at a rapid pace due to increased use of technology, changes in consumer behaviour, evolving regulations, and more.
- All industries will see competitive upheavals as innovations become increasingly exponential. Logistics is expected to be one of the next industries that will experience this.
- The logistics sector is of enormous economic importance to the Netherlands. EUR 55 billion is generated annually and 813,000 individuals are employed in the sector.
- The Netherlands aims to become the world's best logistics sector by 2020.

EXPLORING OPPORTUNITIES AND CHALLENGES

This study explores the ongoing innovation of financial processes in the logistics industry, also known as financial technology (Fintech) solutions. This study seeks to illustrate where the two domains of Logistics and Fintech meet, addressing recent developments and subsequently identify the most relevant opportunities for both markets. Hereby, market insights were based on in-depth interviews with the following organizations:

FINTECH

Fintech stands for financial technology, initially a much used term for large IT services providers in the financial industry. These large technology firms built gigantic software systems and infrastructures for banks, insurers and asset managers. However, recently the word Fintech was being used to refer to a new group of organizations; the so called Fintech start-ups. These firms are relatively young and small and focus on very specific financial services, offering digital solutions to the financial industry or independently offer financial services to consumers or organizations. Ultimately, Fintech consists of start-up companies and established financial and technology companies trying to replace or enhance the usage of financial services of incumbent companies. Fintech services may not be well-known to the general public, but are already widely used and accepted.

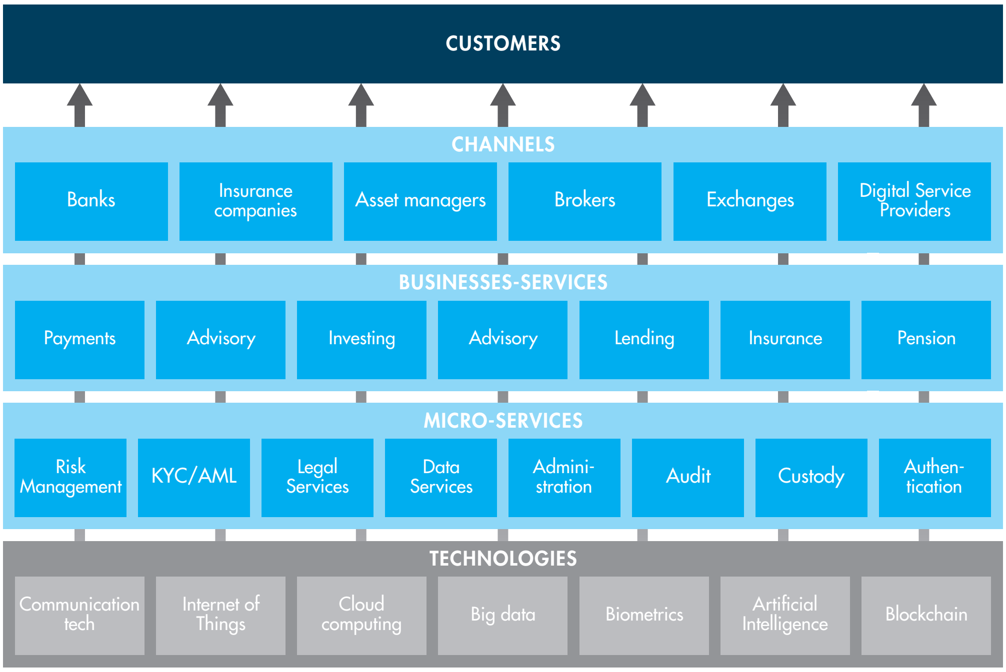
Table 1: Examples of successful Dutch Fintech companies

Ayden	**Five Degrees**
Travelling with Uber or booking your room at AirBnB in Amsterdam, your payment is handled by Ayden. Adyen is a Dutch Collecting Payment Service Provider offering 227 different payment methods to global and local operating companies across 4 continents: Europe, South America, North America and Asia.	Opening a banking account at on-line retail bank KNAB: Five Degrees handles your transactions. Five Degrees is a digital banking platform provider based in the Netherlands offering banks and other financial institutions customer centric banking. High levels of process automation mean Knab's overheads have grown very little compared to its booming customer base.

HOW TECHNOLOGY ADVANCEMENTS GENERATE NEW SOLUTIONS FOR EXISTING FINANCIAL SERVICES AND NEW CHANNELS TO REACH THE END-USER.

Most important trends in Fintech:

1. Ever cheaper and more accessible technology
2. Mobile phone to smart phone
3. Credit scoring/analytics
4. Cybersecurity
5. Alternative finance/ crowdfunding
6. Machine learning/Artificial Intelligence

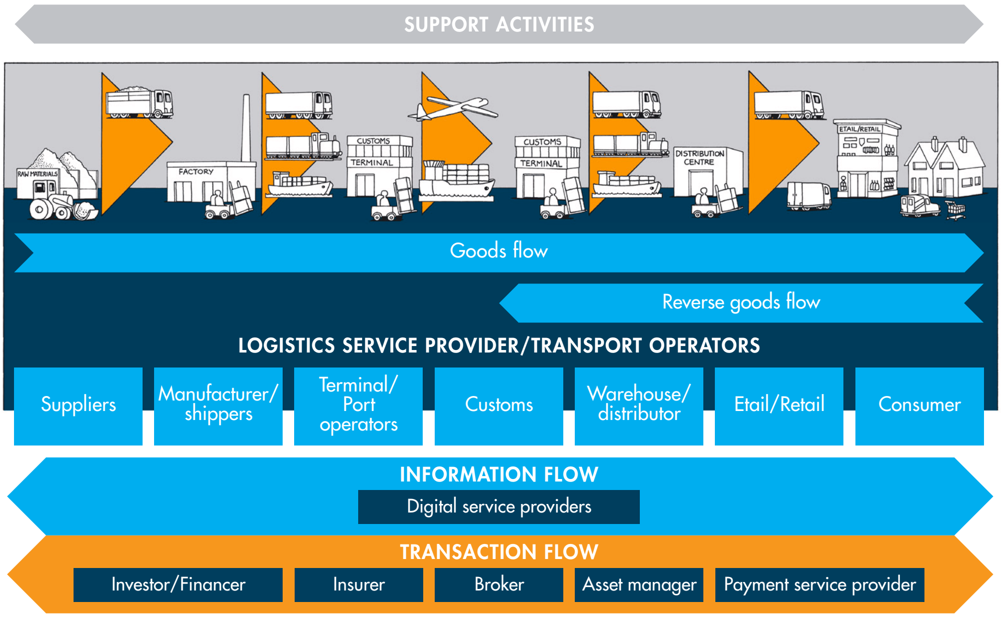


LOGISTICS

The logistics industry can be characterized as an extensive chain of companies where goods are moving from one physical party to another. On one hand, logistic service providers operate on water, air, on the (rail) road and include parties like producers, shippers, warehouses and transporters. Logistics is often described as a fragmentised industry, with a slow adoption for trends. On the other hand, the Netherlands has a good reputation when it comes to logistics. Our country is a major global hub. This creates significant added value, and over 813,000 jobs in the Netherlands. The total production value of Dutch logistics sector adds to € 125 billion a year.

Most important trends in Logistics:

1 Growth of e-commerce
2 Robotization in warehousing and transport
3 Big data, Blockchain & new business models
4 Energy Transition and Climate Change
5 Security & Compliance



Direct logistics activities

- Added value 55.0 billion euros
- Employment 813,000 FTEs
- Production value 125.8 billion euros

1 Transport and transshipment
- Added value 29.3 billion euros
- Employment 433,000 FTEs
- Production value 67.8 billion euros

2 Storage and warehousing
- Added value 14.4 billion euros
- Employment 212,000 FTEs
- Production value 33.3 billion euros

4 Supply chain management
- Added value 11.3 billion euros
- Employment 168,000 FTEs
- Production value 24.7 billion euros

Indirect logistics effects

- Added value 11.8 billion euros
- Employment 121,000 FTEs
- Production value 17.0 billion euros

3 VAL and VAS
- Added value 2.2 billion euros
- Employment 34,000 FTEs
- Production value 3.6 billion euros

5 Support activities
- Added value 9.6 billion euros
- Employment 86,000 FTEs
- Production value 13.3 billion euros

Profitability in 2016

Domestic transport	+ 0.6%
International transport	- 2.0%

FINANCIAL CHALLENGES IN LOGISTICS

To maintain and extend the competitive position of the Dutch logistics sector new investments in innovations, advanced systems and equipment are essential. As the economy shows signs of growth again and companies are considering new investments, finding additional capital is a challenge. The profitability of the logistics sector has been under pressure for years and capital reserves are low or absent. It is one of the worst industries in Europa with respect to compliance to payment obligations (on average 43 days in 2016). Consequently, companies have difficulty in obtaining loans from banks. This delays new investments and the recovery of profitability and growth of the sector.

Based on the exploratory research we have found that there are several areas in which Fintech and logistics can successfully meet and reap benefits from collaboration. There were three relevant areas deducted from the interviews:

1. Administration, working capital & supply chain finance
2. International business, **cross-border movements** and trust
3. Equipment, inventory and real estate

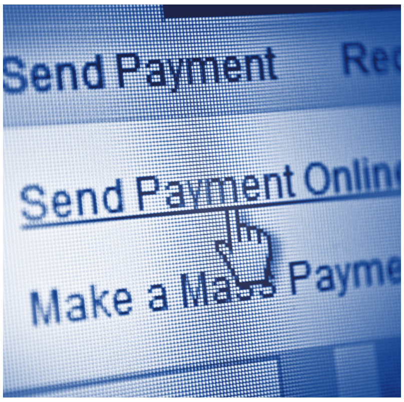
Next, we will explore how technology is making life for all parties down the supply chain easier and how it improves co-operation between parties for mutual benefit.

ADMINISTRATION, WORKING CAPITAL & SUPPLY CHAIN FINANCE

Many logistics organisations are still struggling with their invoicing processes as well as with their payment methods by which they reach out to customers and other supply chain partners. There is much to be gained by reducing administrative hassle, improve insight in how your business and money are doing, speed up payments and to improve financing options.
Fintech companies can help solve many of the financial challenges in the logistics market.
To overcome illiquidity they offer solutions that can broadly be segmented into two categories:

- **Provision of working capital**

  In some supply chains there are large creditworthy buyers who are willing to support SCF arrangements that prevent the insolvency of SME suppliers. Companies like Heineken and Philips steer the improvement process in their chain like this.
  In many supply chains there is not yet room for SCF arrangement to leverage the creditworthiness of big buyers. In those cases logistic companies can solve their capital needs through other supply chain finance schemes. Several banks and Fintechs specifically designed complete packages including a platform, a legal structure and supplier care.



- **Optimizing administrative processes**

  A broad pallet of different solutions has recently come to market to optimize both purchase-to-pay and order-to-cash processes. The inefficient way of collaborating between supply chain partners can be improved effectively through solutions that:

- increase the pace and compliancy of approval processes
- improve the quality of information about delivery
- lead to better matching between invoices and contracts
- share clear and direct information on approval of clients
- create digital connections between companies

Examples:

BLUE ROCK LOGISTICS

SignRequest

BOOZT24 fast forward financing

INVOICE SHARING

valuengineers

INTERNATIONAL BUSINESS, CROSS-BORDER MOVEMENTS AND TRUST

International supply chains are more complex than regular supply chains due to the large number actors involved. Working in multiple jurisdictions, tax regimes and dealing with customs is a hassle, with lots of paperwork. Besides that, the actors further down the line are often unknown and require measures to secure payment, like LC's and guarantees.

Examples:

PAYVISION Global Card Processing

TransDocLink

EQUIPMENT, INVENTORY AND REAL ESTATE

Changing technologies and changes in the use of assets have their impact on the financing needs and risk management of companies in transport and logistics. The equipment required to fulfil logistic processes required special attention as it can be highly specialised or active across the globe. Also the needs for warehousing and fulfilment require different solutions for financing (like lease) or insurance.

The increase of available data (especially when equipment and shipments are connected by the Internet-of-Things) provides investors and insurance companies with more and more accurate data about logistics processes, logistics assets and financial and operational risks. This allows financial institutions or investors to generate more thorough risks analyses of companies or business opportunities. The increase of insights in the particular situation of customers allows Fintech service providers the opportunity to delivery customer-specific or asset-specific financial arrangements.

Examples:

ABN·AMRO SPARKHOLDER nbk

NEW DEVELOPMENTS

The next generation of Fintech services that will contribute to the Transport & Logistics industry is already on its way. Fintech companies, research institutes, government and the industry itself are exploring how new technologies and concepts like Blockchain and Data-pipeline can be applied in new uses cases. Furthermore, the industry itself takes steps in improving and modernizing information exchange in the suppy chain (iShare) and creating new opportunities and data for Fintech services.

Blockchain – working on proof of concept

Potentially, blockchain is the perfect way to store all shared information of a completely open supply chain, whereby everyone relies on independent and correct information. However, blockchain is only a technological innovation, the real social innovation still needs to appear. Only when chain partners are willing to trust each other they can be successful in collaboration. Some enhancements have been made on this topic. There are some relevant Dutch logistics pilots which attract much attention worldwide.

iShare - standardisation of information exchange in logistics

iSHARE is a co-created project developed to incentivize data sharing, boost cooperation within the logistics chain and to scale up, accelerate and effectively connect existing initiatives on digital data exchange with a solid digital infrastructure. The project looks to establish an open data scheme shared between public and private business partners within the transport & logistics sector share their digital information with whom and what they want. After the first trials an interconnected group of companies will go live in January 2018 demonstrating the use of shared company data triggering wider adoption across the sector.

Information Pipeline in Trade & Customs Management

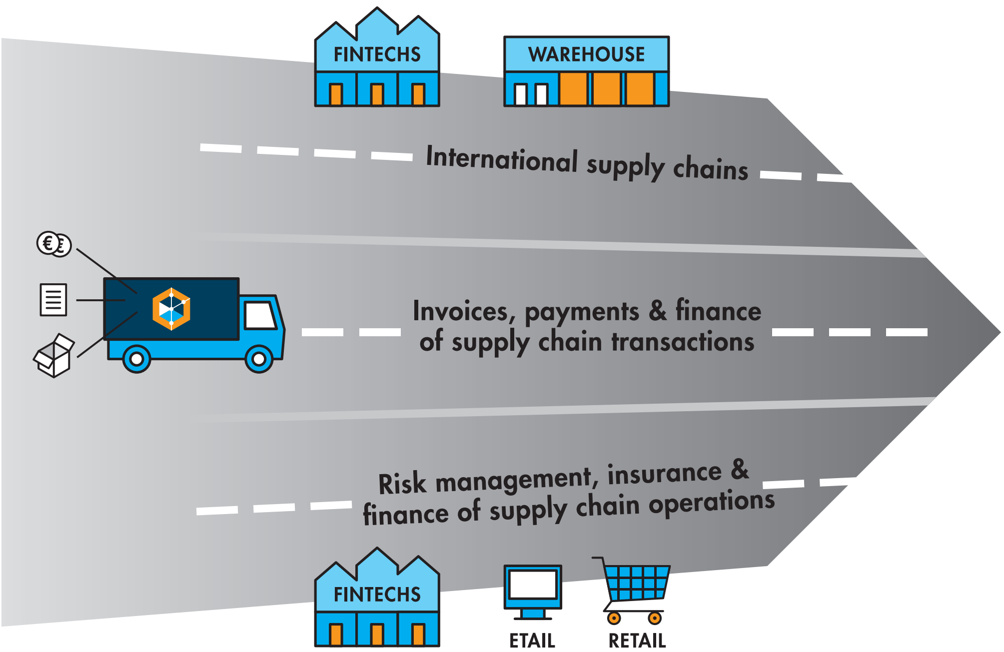
Customs is responsible for the enforcement of the fiscal integrity and security of EU cross-border movements of goods. At the same time, Customs is expected to make a contribution to the economic competitiveness of The Netherlands and the European Union by providing support and furthering the implementation of measures that promote trade. As a result, Customs fulfils a dual role: Customs both inspects and stops goods if needed and allows other goods to pass through without hindrance.

In the CORE Project, Dutch Customs, Flora Holland, Seacon, TNO, TU Delft and IBM are demonstrating the data pipeline that facilitates smooth exchange of information between the actors in the supply chain and provides access to relevant data by public organisations.

CONCLUSIONS AND NEXT STEPS

There is a big potential for Fintech solutions to improve administrative processes, provide access to alternative finance and to professionalise risk management in the logistics sector. Within the logistics chains, information is often exchanged via paper documents which are depending on human signatures and stamps (invoice, bills of lading, letter of credit). Moreover, many logistics companies still make use of legacy technology systems that lag behind current state of the network society. Compared to other industries, logistic services (data & transactions) are not fully aligned with existing digital infrastructures (e.g. cloud software, smartphones, etc.).
It can be argued that the logistics sector is relatively untouched by digitization and innovation in general. In terms of innovation the logistics industry currently is in the phase of pre-awareness. This especially holds for most small and medium-sized companies. The 'usual suspects', leading logistics services providers and large shippers such as Ahold, Unilever and Procter & Gamble do have the resources to invest in technology and subsequently are at the forefront of potential change. Fintech provides an extra business case for investment in technology.

Not only newcomers and start-ups are available with their innovative (Fintech) solutions, also incumbents (multinationals, banks) deploy innovative solutions to solve logistic business. In order to guide logistics organizations through the maze of Fintech and innovative tech solutions, a dedicated network/consulting party has to help.



Next steps

The fragmented and dynamic arena of Fintech products and services is expected to increase in volume and complexity in the coming years. Holland, with its' well-developed Fintech landscape, can become a strong partner for the logistics sector if the logistics parties are willing and able to share their challenges with the Fintech sector and to join forces in finding innovative solutions. To encourage collaboration between logistic companies and innovative Fintech solution providers, Holland Fintech and Dinalog:

- Create awareness and mutual understanding between parties by sharing comprehensive knowledge in an accessible platform (site, social media and public events)
- Invite logistics companies, startups, banks, insurers and all others to explore together relevant new solutions and their application in logistics specific use cases
- Support matchmaking and set-up of pilots or other collaboration initiatives to test the application of Fintech solutions in logistics
- Engage stakeholders in identifying existing challenges and new ambitions (described in a white paper).

These efforts are aimed to trigger action from within the industry in order to enable The Netherlands to become **the world's best logistics sector by 2020.**

About Logistics & Fintech: The Logistics & Fintech Programme, established through a collaborative effort between Dinalog & Holland Fintech, aims to create sustainable, collective solutions that support the continued development of fintech in logistics.

About Dinalog: The purpose of Dinalog is to accelerate innovation in the logistics industry. This is accomplished with 40 ongoing projects between corporates and knowledge institutes. All the fundamental, industrial and experimental research of Dinalog is aimed at the one and only mission of the Dutch Topsector Logistics initiative: in 2020 we want to be the best logistics sector in the world.

DINALOG
Dutch Institute
for Advanced Logistics

About Holland Fintech: Holland FinTech is an independent ecosystem that provides all members equal opportunity to do business in the ever evolving financial value chain. Holland FinTech services provide access to knowledge and network to for business development, technology sourcing, investment, regulations and talent. Since 2014, Holland Fintech brings together people and organisations who believe that creating a level playing field in the financial industry will drive innovation and hence better solutions for customers. With over 300 member companies, Holland Fintech supports and connects mature players to innovative startups across borders and industries.

HOLLAND
FINTECH

For further questions please contact:

Don Ginsel | Holland FinTech | +31 6 2475 8130 | don@hollandfintech.com