

Mattila, Juri; Seppälä, Timo; Lähteenmäki, Ilkka

Research Report

Who Holds the Reins? – Banks in the Crossfire of Global Platforms

ETLA Report, No. 86

Provided in Cooperation with:

The Research Institute of the Finnish Economy (ETLA), Helsinki

Suggested Citation: Mattila, Juri; Seppälä, Timo; Lähteenmäki, Ilkka (2018) : Who Holds the Reins? – Banks in the Crossfire of Global Platforms, ETLA Report, No. 86, The Research Institute of the Finnish Economy (ETLA), Helsinki

This Version is available at:

<https://hdl.handle.net/10419/201368>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Who Holds the Reins? Banks in the Crossfire of Global Platforms



Juri Mattila

The Research Institute of the Finnish Economy
& Aalto University
juri.mattila@etla.fi

Timo Seppälä

The Research Institute of the Finnish Economy
& Aalto University
timo.seppala@etla.fi

Ilkka Lähteenmäki

Aalto University
ilkka.lahteenmaki@aalto.fi

Suggested citation:

Mattila, Juri, Seppälä, Timo & Lähteenmäki, Ilkka
(2.11.2018). "Who Holds the Reins? – Banks in
the Crossfire of Global Platforms".

ETLA Report No 86. <https://pub.etla.fi/ETLA-Raportit-Reports-86.pdf>

Abstract

Banking and financial services have traditionally been a heavily regulated industry where technology alone has not been a sufficient factor to transform the operating architectures of the industry. The pervasive view in the financial industry has been that digitalization and its integrational development will take place on the platforms of the banks.

Due to the inherent secondary nature of financial services, however, it is more likely that the customer interface of financial services will increasingly migrate towards primary service platforms. As a result, the commoditization of payment processing services is expected to increase. Additionally, the visibility into customer data will become more opaque and the value capturing capabilities of the financial industry will be radically redefined. Furthermore, a strategic impact can also be anticipated on several public institutions, such as financial supervisory authorities, the tax administration and other public registry holders.

Tiivistelmä

Kuka vie ja ketä? – Pankit alustatalouden ristitulessa

Pankki- ja finanssipalvelut ovat perinteisesti olleet vahvasti säännelty toimiala, jossa teknologia yksinomaan ei riitä toiminta-arkkitehtuurien ja tapojen muutokseen. Aikaisemmissa pankki- ja finanssialan murroksissa on tavattu ajatella, että digitalisaation integraatiokehityksen myötä muut toimijat liittyvät toimimaan pankin alustalle. Alustatalouden ja lohkoketjujen kehitys on kuitenkin luonut pohjan keskustelulle sulautetuista, hajautetuista ja avoimista pankki- ja finanssipalveluista.

Finanssitoiminnan sekundääripalveluiden moninaisuudessa kehitys ei välttämättä johda siihen suuntaan, että primääripalveluita tuotaisiin pankkien alustoille. Todennäköisempää on, että finanssipalveluiden asiakasrajapinta siirtyy entistä voimakkaammin primäärisille palvelualustoille. Seurausten osalta voidaan ennakoita, että maksupalveluiden kommoditisaatio kasvaa ja pääsy asiakasdataan vaikeutuu. Myös toimialan arvonsieppauskyvykkyudet määrittävät uudelleen. Lisäksi kehityksellä on vaikutusta myös useiden julkistahojen strategioihin, kuten Finanssivalvontaan, Verohallintoon sekä muihin julkisten rekisterien pitäjiin.

We gratefully acknowledge the contributions of Jan Holmström, Taneli Hukkinen, Matias Hämäläinen, Juuso Ilomäki, Kristian Lauslahti, Kari Smolander towards our “blockchain collaboration” in 2015–2018.

This paper has been drafted as part of the Work and Wealth in the Era of Digital Platforms (BRIE-ETLA) (9/2015–2/2019) funded by Business Finland.

Kiitämme Jan Holmströmiä, Taneli Hukkista, Matias Hämäläistä, Juuso Ilomäkeä, Kristian Lauslahtea ja Kari Smolanderia ”lohkoketju yhteistyöstä” vuosien 2015–2018 aikana.

Tämä raportti on osa BRIE-ETLA (9/2015–2/2019) -tutkimushanketta, jonka on rahoittanut Teknologian ja innovaatioiden kehittämiskeskus Tekes / Business Finland.

Keywords: Platform: Embedded banking, Distributed banking, Open banking, Platform, Distributed ledgers, Blockchain, FinTech

Avainsanat: Sulautetut pankkipalvelut, Hajautetut pankkipalvelut, Avoimet pankkipalvelut, Alustatalous, Hajautetut tilikirjat, Lohkoketju, FinTech

JEL: G2, L2, L22

Contents

Background.....	4
Traditional banking services in the face of the platform economy	5
New legislation entails strategic choices	5
Open compatibility challenges existing value chain structures.....	6
“The Rebundling of a Bank” – From vertical structures to horizontal cooperation?.....	7
Bibliography	9

Background

Banking and financial services have traditionally been a heavily regulated industry (Vesala, 1993). Studies suggest that in heavily regulated industries, technology alone has not been a sufficient factor to transform the operating architectures of the industry (Hannan & McDovell, 1984; Llewellyn, 1999). Instead, legislative reforms as well as new modes of thinking—for both customers and service providers—have also usually been necessary for moving forward (Kane, 1980; cf. Chander, 2014).

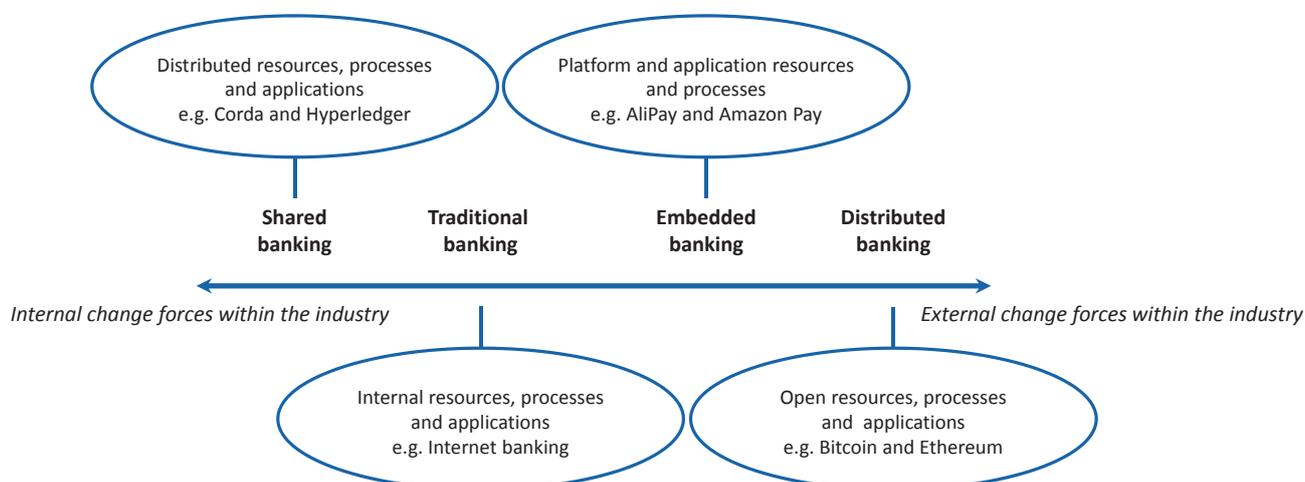
The first steps to deregulate modern banking and other financial services in Finland were taken in the mid-1980s. Despite the alleviation, finance remains one of the most heavily regulated industries in this country. While the advent of the World Wide Web in the early 1990s appeared to increase the availability of financial services (Jayawardhen & Foley, 2000; Luarn & Lin, 2005), its impact on the bigger picture of banking was modest. The scope, content and value promises of financial services remained unchanged. The only notable change was improved access to services, as banking affairs could now be handled by the means of ATMs and the Internet, without the need for time-consuming visits to bank offices. Institutionally, however, everything continued as before: customers handled their banking business in the banks' closed service architectures, on the terms determined by the providers of financial services.

In the face of transitions, the pervasive view within the financial industry has been that the integrational development of digitalization will take place on the platforms of the banks in one way or another. This line of thinking is still very much in evidence even in the most recent development trends, such as the the Open API Banking specifications introduced by the second Payment Services Directive (PSD2). However, the recent evolution of digital platforms and the emergence of new collaborative IT architectures call into question the current paradigm of industrial service architectures in banking and their industry-specific regulation.

A wide range of new tools and methods are currently available for the banking and financial sector. However, innovation in banking and finances is complicated by the difficulty of perceiving the combined impact of new market players, technologies, architectures, regulation and other drivers of change. In recent years, Internet platform giants, such as Google, Amazon, Baidu and Tencent, have risen to challenge the traditional structures in banking and financial services, to a large extent due to their clear-minded grasp on this bigger picture.

The change in the service architectures of banking and finance described in this report lends support to the view that systemic service layers based on new technologies are emerging parallel to the existing system architectures of the industry. However, the reconciliation of these new service architectures with the existing processes may

Figure The diversity of Banking and Financial Services - Is the development of the industry dominated by internal or external forces of change?



continue to pose problems in the short term. Be that as it may, as banking and financial services diversify, the question arises whether development will continue to take place along the old lines of thinking or whether the terms of change are dictated by external players (see figure on the previous page).

Traditional banking services and the platform economy

Banking and financial services can be perceived as having always operated on “platforms”, in the wider sense of the term. For example, the branch office assembled all of the bank’s service offerings onto a single platform, insurance and real estate brokerage included. Online banking carried on this platform-based service concept, as did mobile banking and other financial service applications later on. Similarly, the idea that banking platforms could serve as a basis for more extensive service offerings transcending the finance industry was born with online banking and portal thinking. An electronic banking platform is a place that nearly all consumers as well as corporate customers use to handle their banking business. Thus, all corporate customers could, in theory, complete transactions with other companies and individual customers directly on the banking platform.

However, one thing common to the platform thinking in the banking industry is that the business model has remained a vertically integrated value chain, closely controlled by the bank. As a result, the traditional approach to developing services in the banking and financial sector has been based on a *proprietary* model. In this business model, the bank owns the technology, the platform, the products and the distribution channels related to the service development, also including customer data. However, the assumption that the banking platforms will be able to retain their leading position as the providers of day-to-day banking and financial services should be approached with scepticism. The reasoning for this is simple: financial services are hardly ever prioritised by customers when they set their goals and evaluate value creation processes. Instead, the role of financial services tends to be instrumental –in other words, they exist as secondary services to complement and facilitate other processes, goals, and

services. Although financial services (e.g. payment transactions and access to financing), without a doubt, are of utmost importance in achieving objectives, in the eyes of the customer, they tend to be inherently void of any intrinsic value in themselves.

Recent developments in platforms and mobile applications are making it increasingly easy to integrate financial services into primary service offerings. As a result, determining where financial services are produced and by whom will increasingly be determined by primary service platforms in the future. At the same time, financial service providers are faced with the challenge that a banking platform of a few local financial operators is not attractive to third party developers, because it fails to provide access to global markets.

In this regard, global digital platforms for primary services pose a major challenge to the traditional, vertically integrated business models of the banking and financial industry. Key players in this respect are the GAFA platforms (Google, Apple, Facebook and Amazon) in the West and the BAT trio (Baidu, Alibaba, and Tencent) in the East. While these platform operators themselves do not necessarily produce any financial services, they are able to incorporate banking services seamlessly into their own core business by adopting the *banking-as-a-platform* business model. Moreover, in the business models of the digital platform giants, financial services are usually free of charge or extremely low-priced, which poses a threat to the profits and price-setting strategies of the traditional players. Digital platforms are also redefining the service experiences of customers, thus raising their expectations regarding the ease of use and compatibility, and even the automatic integration of various services.

New legislation entails strategic choices

Financial legislation may speed up the process of adopting a third-party-innovation-based platform model, and even compel the banks to do so. For example, the recent Second Payment Services Directive (PSD2) of the European Commission stipulates that banks with accounts must open interfaces to third parties and, by the consent

of a customer, give them access to the customer's account information. As banks are complying with the new legislation, open innovation and service development is becoming a key element in their strategy.

So far, the business models and strategies of different banks have been very similar to one another. The services, distribution networks and other aspects of these business models have lacked distinctive features that would allow customers to choose a financial service provider according to any clear-cut criteria. However, the legislation compelling traditional financial service providers to open interfaces seems to be pushing them to diverging strategic paths. For instance, the approaches adopted by the OP Financial Group and Nordea both make use of collaboration with start-up companies. Yet, the collaborative efforts of OP Financial Group – at least up until recently – clearly have aimed to expand beyond traditional banking to health care and mobility services.

Nordea's policy, in contrast, suggests a strategic choice of remaining at the very core of banking. On Nordea's open banking platform, third parties can develop service applications by making use of the platform's test data. To activate a finished application, the customer

only needs to allow access to his or her account information. With its open banking platform, Nordea seeks to achieve a leading position in Scandinavia in platform cooperation with start-up companies. However, a persisting problem with both approaches is that, once again, the open banking platform of a single local financial operator is not attractive enough for third parties engaged in global operations.

Open compatibility challenges existing value chain structures

The growth of the platform economy has also given rise to discussion on shared and distributed banking services. Shared banking services refer to a trend reflecting internal drivers for change within the industry, characterised by consortium-based distributed database structures. Distributed banking, in turn, refer to fully open platform structures, such as those facilitated by blockchain technology, representing external drivers for change.

Distributed ledger technology (DLT) refers to a collection of methods by which several operators can maintain a shared distributed database more consistently and transparently than in the past. In the financial industry, distributed ledgers are perceived to offer potential efficiency benefits in various kinds of transactions, operations, and processes. One typical area of banking in which experimentation with distributed ledgers has been carried out is payment processing services. Other experiments have been related to e.g. crowdfunding, securities clearing, accounting, international trade services and financing. One such development project in the financial industry is the Corda platform, developed by the R3 Consortium. It can be described as distributed database technology for facilitating data flows which transcend the boundaries of organisational silos. Although Corda makes use of some of the elements of blockchain technology (e.g. the UTXO transaction model), it does not utilise the features normally associated with blockchain technology more extensively.

Blockchain technology refers to a method of creating distributed IT architectures without any single service provider exercising unilateral control. The technology itself consists of several components, such as peer-to-peer networking, public key encryption, cryptographic tokens of value, algorithmic incentive structures, a cryptographically concatenated data structure, and distributed multiversion concurrency control. In the early days of blockchain technology, the term 'blockchain' was only used to refer to the cryptographically concatenated data structure of the system. Later on, a much broader meaning became associated with the term, in reference to the distributed blockchain platforms at large, in various configurations and on various levels of discussion. The best-known application of blockchain technology is the Bitcoin cryptocurrency network. Despite its name, Bitcoin is strictly speaking not a currency because the generated tokens lack an official issuer or guarantor. Instead, the system can be characterised as an amalgamation between a payment processing network and a new type of an asset class.

Great hopes have been pinned on distributed ledgers in the banking and financial industry – perhaps due to the fact that the term ‘blockchain’ is often misused in the context of development projects. In reality, the concepts piloted in the industry can be described as drawing inspiration from the concept of blockchain technology at most. Although it is already ten years since the first blockchain application was adopted in the form of the Bitcoin cryptocurrency, the actual utilisation of blockchains in banking and finance is, at best, still in the experimental stage.

Despite this, the narrative of blockchains and distributed ledgers seems to have served as a catalyst that has given an impetus to more conventional distributed system development, something that was sorely needed in the banking and financial industry. In the old vertical operating environment, and in the absence of acute pressures for change, it was difficult to justify system updates and digital integration schemes. In reality, however, the development inspired by the narrative of the external drivers for change mostly still reflects the old internal drivers, and the earlier siloed practices, albeit in a wider context. There is little evidence that any real efforts have actually been made to determine how to make use of open banking services and developer communities in the processes of the existing industry.

Traditionally, drawing upon the resources of open developer communities in the context of service architecture development is usually associated with software development. Gradually, however, ways of making use of open service architectures and developer communities are also being identified in other domains. If the novel and more collaborative approaches are widely adopted by the financial sector, traditional operators may find themselves competing not only for customers, but also for the resources of the developer communities.

“The Rebundling of a Bank” — From vertical to horizontal

Traditionally, the IT systems of companies in the financial industry have been heavily siloed and centrally governed. Consequently, the threat posed by the new forms of competition is evident if more efficient operating models are

adopted by the industry at large. In such a case, at least the following significant implications can be anticipated to impact the traditional operators within the financial industry, in terms of management and administration:

1. The customer services interfaces will migrate beyond the traditional financial sector. Consequently, the ownership of the customer relationships will increasingly be transferred to the primary service providers.
2. Access to customer data will become more restricted. The ability to perceive the full scale of services in use and the service data involved will increasingly become the prerogative of primary service providers and other parties with more defined ownership of the customer relationship.
3. The secondary role of financial services will become more highlighted, leading to increased commoditization of the more basic financial services.
4. The competition over customers and developers will become global. The value capturing capabilities of financial companies will be reconfigured according to their ability to harness the new global processes and mechanisms for value creation. Shared, embedded and distributed banking service structures portend this change.
5. The multi-dimensional integration currently underway requires the implementation of new practices and new expertise in the banking and financial services industry. Additionally, the importance of acquiring, enriching and refining data will become highlighted as a competitive factor in service production.

With the prospect of a diversification in secondary financial services in sight, more and more discussion is emerging on the “unbundling of banking.” Similar developments have already been witnessed around platforms in other industries. However, industries that have been subjected to the disruption from digital platforms earlier are now undergoing a rebundling of their service concepts. Uber, for instance, having revolutionised transport services, is now expanding into the delivery of meals and the rental of electric scooters. Thus, it may be prudent to already now consider what the potential rebundling of

Table The ways of providing secondary services are diversifying

	Traditional banking	Shared banking	Embedded banking	Distributed banking
Description	Company as a portal for banking and financial services	Consortium's shared secondary services platform for banking and financial services	Banking and financial services integrated into the primary services platform	Open secondary service platforms produced on a fully distributed basis
Market potential	Market potential as a limiting factor (narrow customer base)	Restricted opening of market potential in enterprise networks (limited customer base)	Market potential eliminated as a limiting factor (large customer base)	Market potential eliminated as a limiting factor (unlimited customer base)
Interface to other services	Fully internal process	Primary services integrated to secondary platform	Secondary services integrated to primary platform	Fully external process
Examples	E.g. OP Financial Group, Nordea	E.g. MarcoPolo (Corda); We.Trade (Hyperledger); Mercury (Corda + Hyperledger)	E.g. Alipay, Amazon Pay, Apple Pay, PayPal	E.g. Ethereum, Bitcoin, Monero

Primary services will not necessarily migrate to banks' platforms. On the contrary, it is more likely that financial services will increasingly migrate to primary service platforms.

banking and financial services will look like. For example, would the assimilation of the secondary services offered by the banking and financial industry into a larger body of the secondary services offered by the public sector and other such players provide an answer?

One reason that may explain why the customer interface has so far remained on the banking platform is that customers usually access the platform following strong authentication of their identity. As the secondary financial services become more diversified, one might ask what the implication for the banks' customer relationships would be if the primary service platforms also started offering strong authentication services? In such a case, would the banks' service ecosystem be overrun by platform giants, or would the requirement to authenticate one's identity diminish the appeal of primary service platforms? Are the incremental innovations of the banking and financial industry enough to reclaim the customer interface back onto the banking platforms?

Broadly speaking, the integration of primary and secondary services and the transfer of the ownership of customer relationships will also impact the other elements of the business models applied in banking and finance, such as the information system architecture, strategic and operational management capabilities and expertise, as well as organisational structures. It should also be pointed out that the described revolution of digital architectures in industry are not specific to banking and financial services. A similar transformation is taking place in many other fields, such as the value chains of the food and pharmaceutical industries. Additionally, this trend may have implications for the strategies of several public institutions (e.g. the financial supervisory authorities, the tax administration and other holders of public registers).

Bibliography

Ailisto, H., Collin, J., Juhanko, J., Mäntylä, M., Ruutu, S. & Seppälä, T. (toim.) (2016). Is Finland about to miss the platform economy train?; Publications of the Government's analysis, assessment and research activities, No. 19.

Ailisto, H., Mäntylä, M., Seppälä, T., Collin, J., Halén, M., Juhanko, J., Jurvansuu, M., Koivisto, R., Kortelainen, H. & Simons, M. (2015). Finland – The Silicon Valley of Industrial Internet, Publications of the Government's analysis, assessment and research activities, No. 4.

Basole, R. & Patel, S. (2018). Transformation Through Unbundling: Visualizing the Global FinTech Ecosystem, *Service Science*, Vol. 10, Issue 4, pp. 1–18.

Chander, A. (2014). How Law Made Silicon Valley. *Emory Law Journal*, Vol. 63, Issue 3, pp. 39–694.

Hannan, T. & McDowell, J. (1984). The determinants of technology adaptation: the case of the banking firm, *Rand Journal of Economics*, Vol. 15, No. 3, pp. 328–335.

Jayawardhena, C. & Foley, P. (2000). Changes in the banking sector – the case of Internet banking in the UK, *Internet Research*, Vol. 10, Issue 1, pp. 19–31.

Kane, E. (1980). Accelerating Inflation, technological Innovation and the Decreasing Effectiveness of Bankin Regulation, *The Journal of Finance*, Vol. 36, No. 2, pp. 355–367.

Lauslahti, K., Mattila, J. & Seppälä, T. (2016). Smart Contracts – How will Blockchain Technology Affect Contractual Practices?, *ETLA Reports*, No. 57.

Lauslahti, K., Mattila, J., Hukkinen, T. & Seppälä, T. (2018). Expanding the Platform: Smart Contracts as Boundary Resources, In: Smedlund A., Lindblom A., Mitronen L. (eds) *Collaborative Value Co-creation in the Platform Economy*. *Translational Systems Sciences*, vol 11, Chapter 4, pp. 65–90. Springer, Singapore.

Llewellyn, D. (1999). *The New Economics of Banking*, Suerf Studies, No. 5.

Luarn, P. & Lin, H.-H. (2005). Toward an understanding of the behavioral intention to use mobile banking, *Computers and Human Behavior*, pp. 873–891.

Lähteenmäki, I. (2006). *The Development of the Finnish Banking Industry from a Partnership Perspective*, *Acta Universitatis Ouluensis, series G Oeconomica*, No. 23, Oulu University.

Mattila, J. (2016). *The Blockchain Phenomenon – The disruptive potential of distributed consensus architectures*, *ETLA Working Papers*, No. 38.

Mattila, J. & Seppälä, T. (2015). *Blockchains as a Path to a Network of Systems: An Emerging New Trend of the Digital Platforms in Industry and Society*, *ETLA Reports*, No. 45.

Mattila, J. & Seppälä, T. (2018). *Distributed Governance in Multi-sided Platforms: A Conceptual Framework from Case: Bitcoin*, In: Smedlund A., Lindblom A. & Mitronen L. (eds) *Collaborative Value Co-creation in the Platform Economy*, *Translational Systems Sciences*, vol 11. Springer, Singapore. Chapter 10, pp. 183–205.

Pisano, G. P. & Teece, D. J. (2007). *Shaping intellectual property and industry architecture*, *California Management Review*, Vol. 50, Issue 1, pp. 278–296.

Rajala, R., Hakanen, E., Mattila, J., Seppälä, T. & Westermund, M. (2018). *How Intelligent Goods Shape Closed-Loop Systems?*, *California Management Review*, Vol. 60, Issue 3, pp. 20–44.

Vesala, J. (1993). *Retail Banking in European Financial Integration*, *Bank of Finland Studies*, D:77.

ETLA



Elinkeinoelämän tutkimuslaitos

**The Research Institute
of the Finnish Economy**

ISSN-L 2323-2447,
ISSN 2323-2447,
ISSN 2323-2455 (Pdf)

Tel. +358 (09) 609 900
www.etla.fi
firstname.lastname@etla.fi

Arkadiankatu 23 B
FIN-00100 Helsinki
