



Payments in an increasingly digital economy

Payments Council Working Group 2

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1 Introduction

1.1 Aim of the report

The aim of this report is to single out and identify payments-related projects from ongoing initiatives on the digital economy. Of key importance are the ICT 2015 project, the projects connected with the Aalto University's Real-Time Economy programme and the Financial Interoperability Backbone project, i.e. the TARU project (2014–2016). The report describes those payments-related projects that are currently underway in these areas. Another aim is to identify potential further projects (related to the national data exchange layer, among others) to which payments can be linked in order to accomplish an effective operational model, to the extent possible.

The digital economy delivers many benefits for consumers, companies, banks and the public sector alike, as more effective use can be made of data in digital form and the reporting burden can be eased. Digitisation enables achievement of large direct cost savings and, ideally, entire value chains can be transformed into real-time processes. According to international evaluations,¹ e-invoicing alone brings savings of 1–2% of company turnover. In the case of Finland, too, savings based merely on e-invoicing and payment automation are assessed to be highly significant: the Confederation of Finnish Industries estimates the savings at EUR 2.8 billion in invoicing between companies, the Association of Finnish Local and Regional Authorities estimates them at EUR 150 million for the local government sector and the State Treasury at EUR 150 million for the central government sector, in addition to which there are benefits for consumers.

If digital data is exploited to the full, a number of other (in part even indirect) benefits and efficiency gains can also be reaped at the level of the economy as a whole: the shrinking labour force will be released from routines to more productive work, the environmental burden can be reduced, risk management can be improved, the grey economy can be effectively combated, development of the single market can be boosted, global standardisation can be promoted, cloud services exports can be increased and new types of business can be created. An essential underlying factor capable of generating this type of development is the linking of payments with the digital economy's various processes as seamlessly as possible. This report looks at the increasingly digital economy, particularly from the viewpoint of payments and the related data.

The ICT 2015 programme incorporates many areas of development directly or indirectly related to payments. These include *e-invoicing, broad-based recycling of structured data, automation of payment and reporting*

¹ www.billentis.com 2013 E-Invoicing/E-Billing the catalyst for AR/AP automation.

processes and development of bank account statements to support accounting automation. In many of these areas, Finland is already far advanced, in part even a model country within the EU and a global trailblazer. It is therefore of utmost importance that this good groundwork not be wasted, and therefore widespread support for these initiatives is a key priority. Prompt action ensures that EU single market development can be steered in a direction that is appropriate for Finland.

Innovative automation solutions, aimed at significant reductions in the administrative burden of companies and the public sector, too, were elaborated in e.g. the RTE programme, and the ICT 2015 project recommends their implementation. This report outlines the possibilities of making use of data generated in connection with payments, from the perspective of enhancing the efficiency of official reporting, among other things; the fact is that until now information generated in connection with payments has barely been made immediate use of, with reporting being carried out ex post as a new work phase of its own.

In switching over to e-invoicing as users of banks' e-invoicing services and other cloud services for financial administration, companies – regardless of size – will have access to real-time economic and financial forecasting tools. In addition to permitting predictions of an individual company's finances, these systems will open up opportunities for more broad-based and real-time prognoses of the economy in the future. As well as companies, this will also benefit the public and the financial sector.

Viewed in the light of history, providers of payment services have contributed to enhancing the efficiency of financial administration, and Finnish banks have played an important role in the automation of companies' processes for financial administration. The 'Statement of account qualifying as a receipt' service standardised in 1991 by the Finnish Bankers' Association (currently the Federation of Finnish Financial Services) in practice removed paper-based receipts and also largely paper-based statements of account. Payment of invoices and the closely related 'Incoming payments with reference number' service constitute an integral element of automatically handled financial administration at companies. In addition, online payment services provided by banks have brought significant cost savings for companies, consumers and banks.

Finnish banks on a broad front were also the first in the world to adopt e-invoicing based on the four-corner model. As a consequence, a large proportion of companies have e-invoicing agreements in place (330,000 agreements with banks in 2013) and the bulk of companies utilise e-invoicing, at least in part. Now that stronger discipline regarding standards is being applied at the request of the ICT 2015 monitoring group, it will be possible to launch piloting in respect of accounting based on statements of account and VAT reporting. These pilot projects will subsequently enable implementation of cash-flow forecast automation and broader reporting automation.

1.2 Definitions and limitations of the report

The digital economy can be defined as an environment where all exchangeable documentation between organisations (e.g. invoices and payments) and reports (e.g. reports to the authorities) are in digital form, increasingly automatically generated and issued in real time, from both the business and the IT point of view. *Production, dissemination and exploitation of structured information and the resultant value added services are at the centre of the digital economy.* Structured information means that information transmitted between organisations is in defined, electronic and machine-readable form.

Projects key to this report were developed in the Real-Time Economy ([RTE](#)) programme. The RTE programme mainly addresses two data flows: e-invoicing and government reporting. *E-invoicing* can be seen as a platform for more effective processes and value added services in the digital economy. The programme focuses on the development of e-invoicing and the promotion of its adoption. With regard to *government reporting*, the focus of the RTE programme is on standardisation and harmonisation of data definitions, e.g. in respect of financial and payroll reporting.

The RTE programme's key work blocks constitute the [ICT2015 programme](#) path 2 package. Path 2 makes large reporting flows related to payment services, as specified by the RTE programme, available via the data exchange layer in respect of four focal areas. Of these, two are already well underway:

- *Real-time notification of salary payments and a national income register.*
- *Introduction of the XBRL² standard, built on a national set of reporting codes, in financial statement reporting.*

Concrete additional input is still required in two other areas of focus:

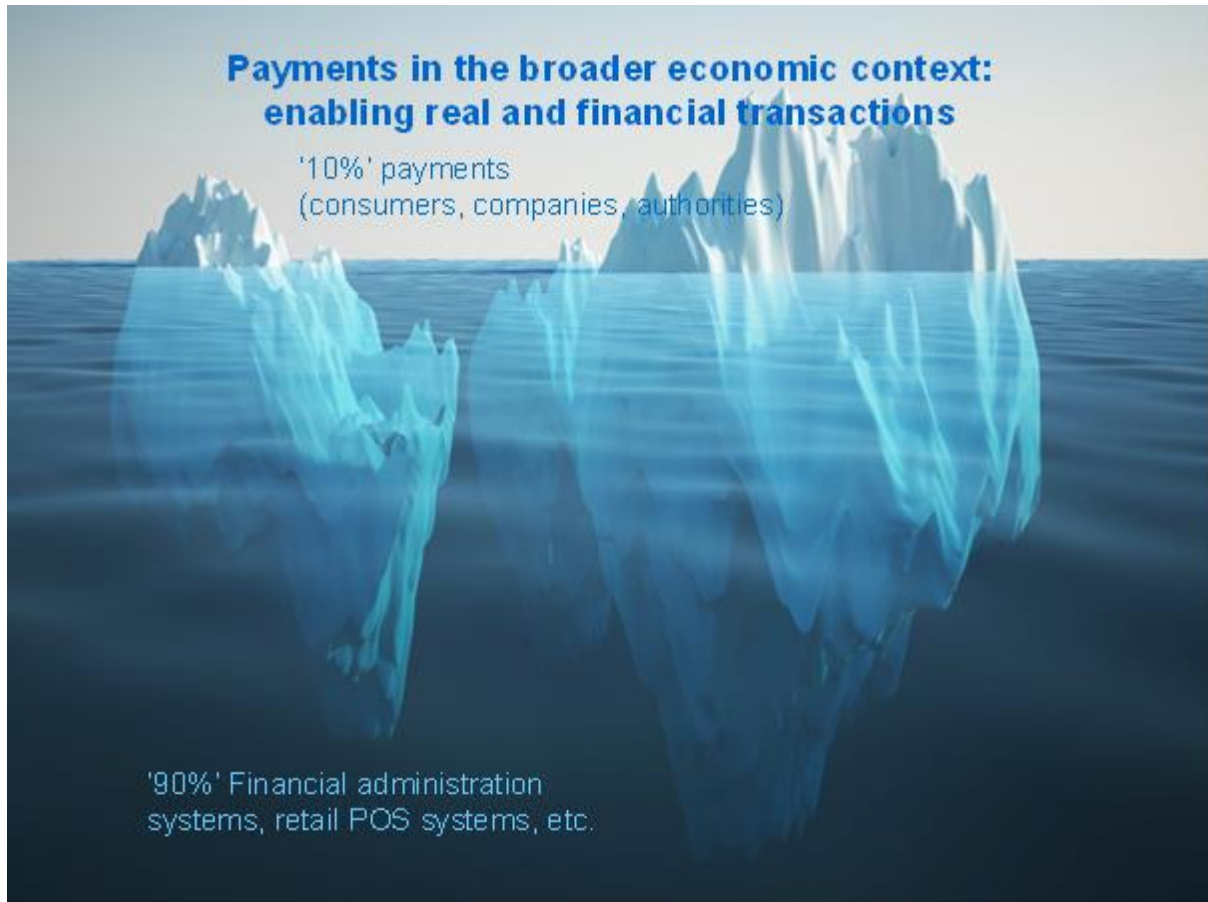
- *Exploitation of data contents of electronic invoices e.g. in VAT reporting and combating the grey economy.*
- *Development of statement of account services for automation of accounting.*

These priorities are analysed more closely in the sections below.

Chart 1 illustrates with an iceberg the close link of payments to the operation of the economy as a whole. Payments represent the tip of the iceberg in the big picture of the economy: an efficient and reliable execution of payments is essential to a smooth conduct of real and financial transactions and is closely linked with 'the underwater part of the iceberg', i.e. with companies' financial administration systems and retail cash systems, among other things. This report concentrates on this underwater part, with particular emphasis on ongoing projects on the digital economy.

² XBRL = eXtensive Business Reporting Language, i.e. a standardised reporting language designed to bring greater efficiency to government reporting.

Chart 1. Linking of payments with economic processes



2 Projects on the digital economy

Like many other reports, the barometer on digitisation³ published in February 2014 clearly highlights the excellent preconditions Finland has for creating new types of digital ecosystems, but how poorly it has tapped or been able to tap this potential. This imbalance applies equally to private companies and public administration.

Digitisation of processes, automation and structured and real-time processing of information are still limited, taking into account that almost all information is already in digital form. The degree of automation in companies' support functions, such as financial and human resources management, marketing, sales and logistics could be considerably higher than is presently the case. Of public administration functions, too, the bulk is knowledge-based work and thus capable of being digitised.

The administrative burden for companies from public administration's reporting requirements has been measured in many different connections. It is difficult to present any monetary estimate but, clearly, the burden is significant, especially when several types of reports are prepared even from the same database for submission to different parties. If the reported data were in structured form, execution of payments and reporting could be automated and updated and separate reporting phases could be minimised. The use of data could also be automated, in addition to the fact that the usability of data in general and the real-time and even proactive deployment of data could be substantially improved. Accordingly, the key objectives of projects aimed at digitising the economy are better exploitation of data and a reduction of the reporting burden.

The Real-Time Economy (RTE) programme, with its different stages, modelled the value chains for financial administration and described the real-time economy as follows:

Real-Time Economy is an environment where all transactions between organisations are in digital form, increasingly automatically generated and occurring in real time, from both the business and the IT point of view. For companies, public administration and citizens, this means, for example, that orders, order confirmations, invoices and payments move from one system to another without delay. This would enable migration to electronic filing, electronic accounting and automated financial administration and standardised, structured and automated

³ Source: <http://digibarometri.fi/files/2014/02/Digibarometri-2014.pdf>. Publishers: DIGILE Oy, Teknologiateollisuus ry (Technology Industries) and Verkkoteollisuus ry (Internet Industry Finland).

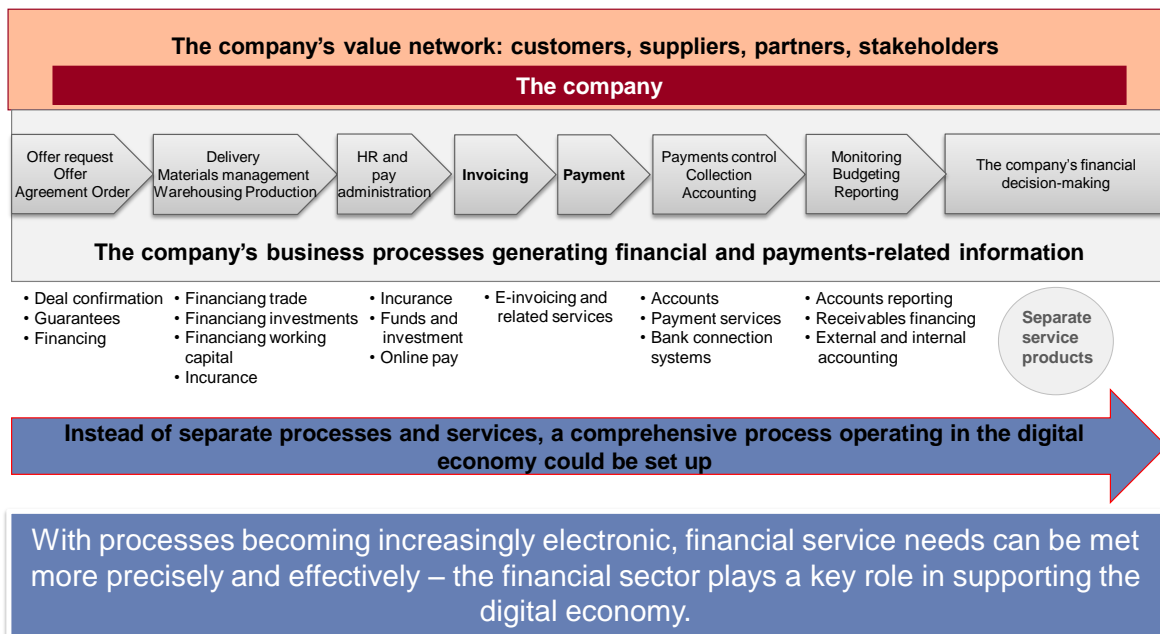
reporting. The benefits for society at large would be enormous from the perspective of productivity, environmental protection and new business opportunities alike.⁴

Opportunities to make use of digital data in companies’ business processes

In the field of payments (invoicing, payment and account information), the dissemination of information in companies’ value networks plays a key role, but various types of information have already been generated elsewhere in the companies’ processes. Financial information is created in the different processes of a company’s business, starting from offer requests to orders, from production to payroll administration, and finally from invoicing to payment. This information helps build tools not only for accounting but also for other monitoring and forecasting, on the basis of which companies take financial decisions.

Chart 2. A company’s business processes and opportunities to make use of digital data

Information needed for making payments flows through a company’s entire delivery chain and value network – potential still largely untapped



The chart above illustrates a company’s usual business processes. These different business processes generate information that is exploited in other processes and on the basis of which e.g. financial market participants

⁴ The RTE competence center at Aalto was established in collaboration with Aalto University and Tieto Corporation in 2006. Since then, RTE has grown to a national development programme with over 100 organisations contributing to the various development projects.

provide services to companies. The chart shows those financial services for which real needs arise at certain phases of business processes. As a result, and often in the light of historical data, e.g. separate financial products are offered for which a company perceives a need only at the end of the chain of processes and for which the need is estimated and the service negotiated with the bank, using other than digital procedures.

Information flowing in the chain of a company's business processes could be harnessed more effectively for the benefit of the company's financial decision-making. Electronic chains of business processes would make it possible to identify and foresee future needs at an early stage of the chain. Digital (financial) services in support of a company's business could be combined into an integral element of the company's processes.

The simplest consequence of this for companies would be that business financing needs could be forecast better on the basis of information available at the beginning of the delivery chain. Currently, for example, Finnish companies' most important financing need is the *need for working capital*, which is due to the different timing of purchases and receivables based on invoicing and the resultant low level of liquid assets. In an electronic chain of business processes, the cash position and future cash shortfalls, among other things, could already be predicted at the offer-order stage. Similarly, a company's inventories and staff could be insured precisely on the basis of real-time inventory and staff levels, in contrast to the current practice of making these assessments on the basis of past point-in-time and 'manual' forecasting.

For companies, this would mean a higher level of financial management and cost efficient and timely financial and insurance services. Electronic financial processes would shorten the length of the order-delivery chain, diminishing the possibility that the length and inefficiency of financial processes could lead to an unnecessary financing of daily working capital needs. Resources and finance could be allocated to genuine investments and growth. For providers of financial services, the real-time economy would give an opportunity to reconstruct and transform their service models from separate, product-specific and non-real-time models to precisely defined, real-time models capable of functioning in the digital economy. This would help improve credit and network risk management.

Opportunities to make use of digital data for streamlining of reporting

Companies' different business processes create information that needs to be reported to the authorities in different formats as separately compiled reports. This reporting burden is currently very heavy.

Companies are required to prepare several statutory reports on a monthly basis. Reports to the Tax Administration include supervisory notifications of VAT and employer payments, VAT summary notifications regarding intra-EU trade in goods, annual employer notifications and annual employee-specific reports.

Companies need to report their sales to Statistics Finland on a specific form and are required to submit Intrastat

import and export notifications to the National Board of Customs. In addition, there are employment and annual notifications for pension insurance companies, and KELA (The Social Insurance Institution of Finland) and other, for example, pay surveys to which companies are expected to respond. Full use of digital data could considerably reduce this reporting burden (Chart 3).

Chart 3. Reporting to authorities and opportunities to make use of digital data

Effective utilisation of the opportunities created by the digital economy alleviates companies' administrative burden considerably. Structured data enables automation and streamlining of reporting required from companies. For example, users (KELA, tax authorities, insurance companies and pension providers) of income data submitted for an income register could access real-time data and would not need separate reports from companies. In general, the need for separate reports prepared by companies could be reduced significantly. This would improve the related practices applied by both issuers and users of reports.

2.1 National Architecture for Digital Services programme

The National Architecture for Digital Services programme is designed to build an interoperable infrastructure for digital services that will permit easy exchange of data between organisations. The programme outlines a national service platform (data exchange layer), common service views for citizens, companies and authorities, a new national electronic identification scheme and national solutions for managing the roles and authorisations of organisations and natural persons.

The aim of the programme is:

- To simplify and facilitate communication of citizens, companies and entities with the authorities and to make it safer.

- To promote the transparency of public administration and to improve the quality of services provided by public administration.
- To achieve cost efficiency in electronic services.
- To improve joint use of information and interoperability of information systems.
- To foster companies' access to public administration's databases and services.
- To support the national economy by making public administration more efficient and by generating new potential for business in the private sector.

The service platform is a data exchange layer defining how data and services are transmitted between different information systems. The data exchange layer is an information transmission service through which public administration and companies can access other services and databases linked to the layer. The data exchange layer will be technically implemented on the basis of the concept and principles of the X-road solution (data exchange platform) used in Estonia.

The data exchange layer is also other than technology, as it is aimed at:

- enabling a cohesive service and database infrastructure;
- enabling a standardised, safe and controlled environment;
- lowering thresholds for data exchange; and
- enabling new types of models for operation and implementation.

The data exchange layer and service architecture act as catalysts for a faster generation of new services and for an efficient deployment of existing information in public administration. It will become easier to link databases to the layer and especially for them to be more widely utilised, as standardised practices and techniques will be in use.

The two key components of the service architecture are the data exchange layer and electronic identification (eID). The Ministry of Finance has furthered the planning of these areas in broad cooperation with public and private sector stakeholders. The aim is to launch the data exchange layer for production in early 2015 by opening basic registers (e.g. the population register) via the layer for use by citizens and other parties entitled to access the registered data. Public databases, such as the Business Information System (a joint business information system of the Finnish Patent and Registration Office and the Tax Administration), the Trade Register maintained by the Finnish Patent and Registration Office and the electronic invoice address book provided by TIEKE – The Finnish Information Society Development Centre – would also be accessible via the data exchange layer in order to ensure as easy utilisation as possible of their data contents in companies' business processes. These databases

would also offer companies the possibility of using the data for new purposes, thereby generating new business in Finland.

Introduction of the data exchange layer will expand in autumn 2015 so that one log-in from one location enables users to view and avail themselves of services provided by the authorities. Electronic identification has reached the stage of a Government draft bill amending the Act on strong electronic identification and electronic signatures. If the bill is passed, it will mean that, instead of numerous currently applied methods of identification based on different customer relationships, one and the same identifier will provide user access to all services requiring strong identification and signature. Those benefiting most from this change will be providers of electronic services, who will need to make an agreement with only one party providing the identification service.

2.2 Income register

The heaviest reporting burden for companies arises from the payment of wages and salaries and the related obligations. The reports are often prepared in connection with salary payment as a separate work phase, separately for each party requiring such reports. Even reporting periods differ. Part of the reporting is still based on paper.

For example, employers annually issue more than 60 statutory notifications or reports concerning wages and salaries paid by them. Earnings data reported by employers to different parties include overlapping information, which is stored in several separate databases. The parties needing income data (e.g. Kela, Tax Administration, insurance companies) have no possibility of reviewing this data on a real-time basis and must also still process it on paper.⁵

The establishment of a national income register is proposed as a means of reducing the administrative burden of reporting and making up-to-date income data accessible. The income register would allow citizens, in particular, to monitor wage and salary notifications and the accuracy of such reporting and to easily access up-to-date information on their own income.

The establishment of an income register is aimed at ensuring that income data can be reported for entry into a centralised register upon payment of wages and salaries, pensions, benefits and other income. Consequently, real-time income data would be available to those in need thereof

⁵ Memorandum, issued jointly by the Ministry of Finance, the Tax Administration, Kela and Sitra (The Finnish Innovation Fund), concerning the administrative burden of reporting and an income register planned for its reduction.

from one location. Another aim is to achieve as high a degree of automation as possible in the reporting and use of income data.⁶

The income register would reduce multiple reporting of income data, thus improving the operation of the private and the public sector. It would also facilitate and speed up the handling of matters for citizens. Employers would be released from employee-specific annual and monthly reporting requirements, as the relevant notifications could be delivered immediately upon payment of wages and salaries.⁷

The income register would support the Government programme objectives related to the improvement of productivity in public administration, the promotion of compatibility between public information systems and prevention of the grey economy. The income register would require changes in its participants' information systems, among other things, but this would also be an investment with multiple potential benefits relative to the money invested.

The income register would be another effective new tool for combating the grey economy. In accessing the register, the Tax Administration and other authorities could verify in real time the employee-specific pay data reported by employers for the register. The register would permit a considerably easier and faster verification of various failures to comply with employer obligations. Going forward, all employee-specific data needed for combating the grey economy could be obtained from the income register with no need for other separate data flows in this respect.

Data on wages and salaries paid to foreigners subject to limited tax liability in Finland would also be entered into the income register. Such information could be made use of in the supervision of compliance with various employer obligations regarding labour coming to Finland from abroad and in the assessment of employees' own tax status. At the same time, other exchange of information related to international labour mobility would become considerably more effective and up-to-date.

The income register is aimed at implementing an automatic processing of income data and a real-time flow of information, by payment transaction, from the provider of income data to those making use thereof. The target state is that income data would be transmitted via the data exchange layer to the income register and from the register to parties entitled to use the data.⁸

In connection with the payment of wages and benefits, the company's financial administration system or the company's service provider would compile the data for the income register. This would eliminate the company's

⁶ *ibid.*

⁷ *ibid.*

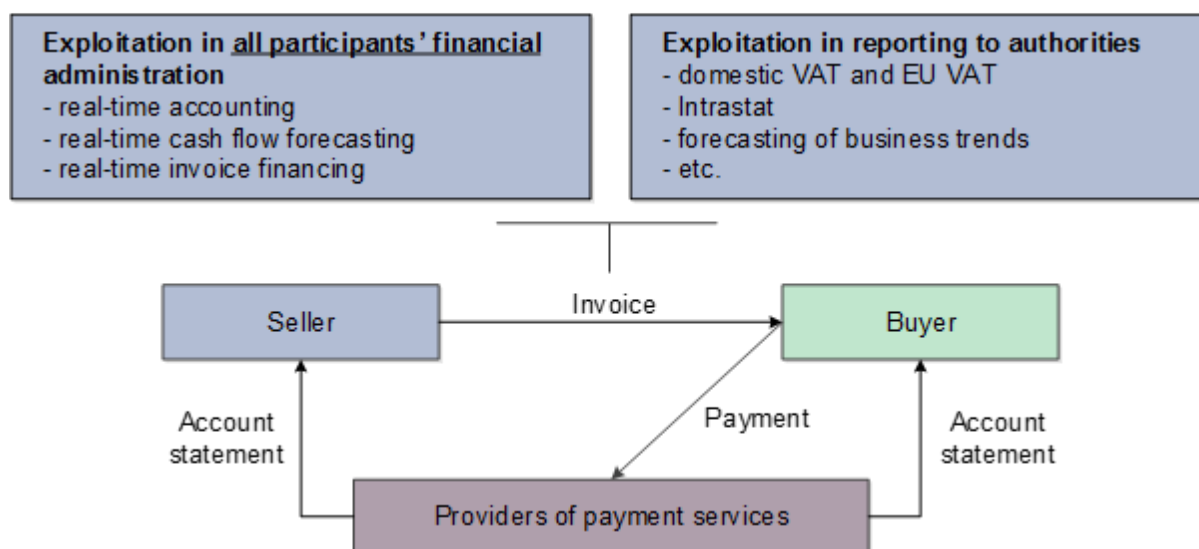
⁸ *ibid.*

need to report the payment of wages and salaries in any other manner to various authorities, thereby alleviating its administrative burden.

2.3 Exploitation of data contents of electronic invoices

Making use of the structured data of electronic invoices enables automation of financial administration processes and official reporting. Exploitation of the data contents of electronic invoices can be illustrated by Chart 4.

Chart 4. Exploiting data content of electronic invoices



Structured e-invoicing and electronic financial administration make it possible to automate buyer and seller business processes. Thanks to automation, companies can prepare real-time cash-flow forecasts, among other things. Compilation of official reports can also be automated with the help of structured data.

Finland's choice for a model electronic invoice was based on XML rather than PDF and scanning. This decision has been instrumental in allowing an automatic processing of structured electronic invoice data and a further exploitation of the data contents of electronic invoices in e.g. cash-flow forecasting. Although the adoption of electronic invoices was initially slow, companies have reaped and will continue to reap significant benefits from the selected solution.

The Federation of Finnish Financial Services has, together with Tieto Oyj, defined ISO 20022 Tax Report message descriptions. The message enables transmission to the tax authorities of VAT data collected from the data contents of electronic invoices.

The data contents of electronic invoices can also be used in combating the grey economy. For example, the construction sector has defined a common identifier for new building contracts. The identifier is indicated on the electronic invoice, meaning that the party who has ordered the contract work can report the contract prices, specified by agreement and construction site, to the tax authorities. Such a report can also be compiled automatically on the basis of electronic invoice data.

2.4 Exploitation of bank statement information

E-invoicing, in combination with account statements, lays the basis for automating the financial administration of small and medium-sized enterprises (SMEs). The bulk of these already use e-invoicing. All SMEs have a payment account from which electronic account statements can be obtained. Electronic invoice data can be linked with electronic ISO 20022 account statements and other account transactions, making it possible to automatically compile an SME's or other organisation's accounting data.

TIEKE – The Finnish Information Society Development Centre – and Suomen Taloushallintoliitto ry (Association of Finnish Accounting Firms) have jointly prepared an accounting transaction file known as TALTIO. This file defines the necessary data for accounting entries, making automation of accounting possible.

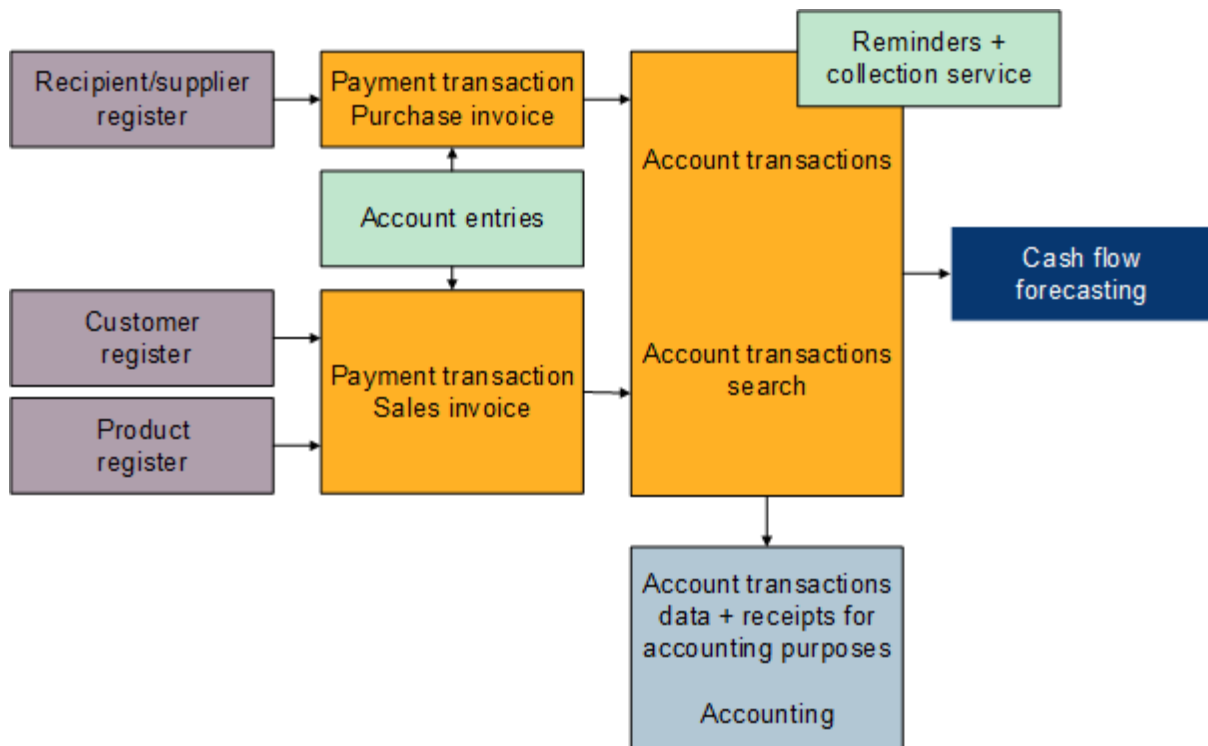
As all business transactions for an accounting period are available in the TALTIO transaction file format, electronic financial reports (XBRL) can be easily compiled. Such a standardised file format will also enable automated auditing and tax inspection, as the data can be readily traced back to original business transactions.

The aim of automatic accounting is to facilitate accounting for small businesses (such as farmers), housing corporations and other organisations. Automatic accounting is based on small businesses using cash accounting schemes. The EU Council has also issued a recommendation for a cash accounting scheme in its Directive on value added tax 2010/45/EU amending Directive 2006/112/EC, which states: 'Member States should have the option of allowing VAT to be accounted using a cash accounting scheme'.⁹

Looking ahead, use of the TALTIO transaction file format and harmonised reporting codes will also enable independent notification and payment of income tax withholdings, based on electronic reporting.

⁹ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0045&from=EN>.

Chart 5. Exploitation of statement of account information



2.5 Transmission and exploitation of information on purchase transactions

Currently, information on purchase transactions cannot be fully exploited e.g. in accounting. The next stage in automating accounting procedures is to define how information on payments made by company cards could be provided in electronic form directly to the buyer. At present, the information on purchases (travel, etc.) made by company cards needs to be entered manually into the company's accounting books.

In addition to purchases by company cards, other card purchases could also be capable of conveying the information on purchases to the buyers (e.g. guarantee certificates). Obtaining such information electronically would also ease consumers' everyday life.

The requirements and limitations related to card purchases will necessitate more precise definitions, as there are several parties to card purchases. The 'receipt' for a purchase transaction could move in structured form directly to the buyer's card company and be attached to the forthcoming electronic invoice, either directly as part of the invoice or as an appendix. Submission of larger information content in connection with actual debiting will require closer analysis, which should be started without delay

2.6 Split payment and reporting

Electronic invoices include pre-completed information, in addition to buyer and seller details, such as the VAT amount and its basis. On the basis of electronic invoice data, the buyer and seller can automate the updates of VAT calculations in their own financial administration systems. This makes VAT reporting easier.

Ideally, in connection with the payment of an invoice, the payer could pay both the net amount due to the seller and the VAT amount due to the tax authorities (split payment). In this area, it is advisable to proceed with harmonised approaches at EU level. However, several companies perceive a need for also splitting payments other than tax-type payments. Accordingly, financial administration systems should incorporate a facility to disseminate payment details to several payees. Such a functionality would contribute to streamlining invoicing processes.

2.7 Real-time economic and financial forecasting

Broad-based electrification of order-delivery chain information will enable increasingly real-time economic and financial forecasting in the future. Currently, larger companies already have in place effective systems for liquidity forecasting. By contrast, such systems are not yet in widespread use among SMEs.

With companies migrating to e-invoicing as users of both banks' e-invoicing services and other cloud services for financial administration, tools for real-time economic and financial forecasting will become available to companies of all sizes. In addition to permitting predictions of an individual company's finances, these systems will open up future opportunities for more broad-based and real-time prognoses of the economy as a whole.

Banks, in particular, could have an important role to play in the development and dissemination of these services because of their key position in the economy's value chain. For example, in the future banks could offer almost real-time forecasts for the development of a certain sector and Finland's economic outlook. Corresponding indicators are already offered by e.g. SWIFT (Society for Worldwide Interbank Financial Telecommunication), whose SWIFT Index service, drawing on interbank payments, provides information on GDP development in individual countries and groups of countries.

With e-invoicing becoming more widely used, changes in the economic situation can be identified earlier than previously. There would therefore be a good case for considering whether, on the part of the authorities, such information could be exploited in forecasting economic and business trends.

3 Concrete proposals for action

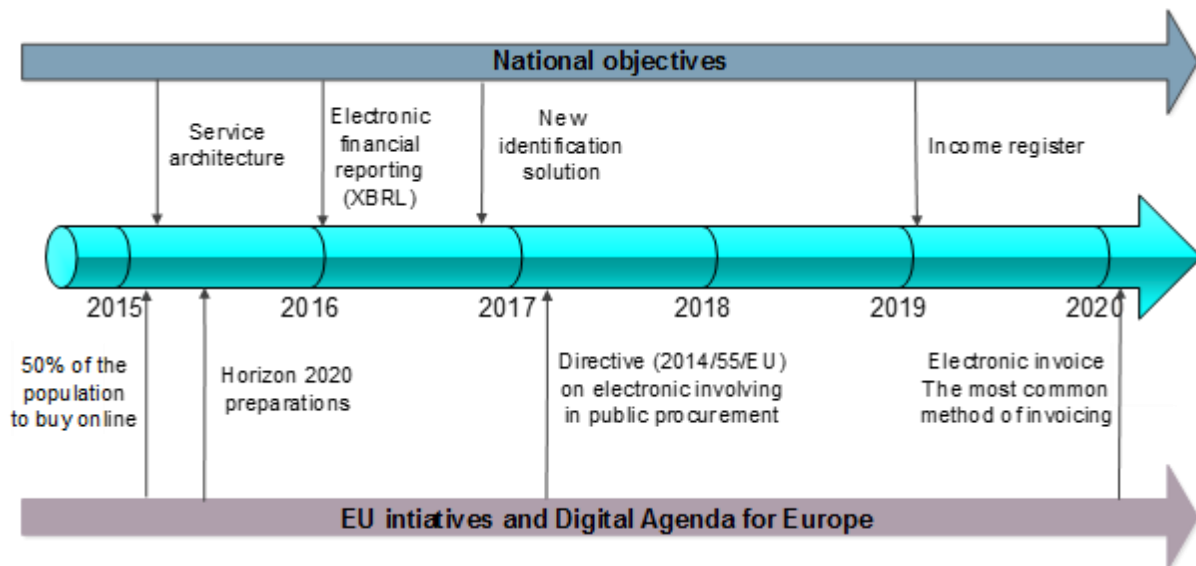
In an increasingly digital economy, payments must be seen broadly as part of the entire spectrum of economic processes, not as isolated functions: for companies as part of the order-invoicing process, for consumers as part of a service experience. Payments will become more closely integrated with companies' business processes existing in electronic form throughout the whole value chain. This sort of development requires that the information used in the processes be structured and up-to-date.

Structured information means that information elements transmitted between the parties concerned are clearly defined. This ensures that the information is in machine-readable form and its processing can be automated. Up-to-date information, in turn, means that information generated in connection with an individual business transaction is immediately usable in the company's other business processes and in official reporting, too.

Digital economy solutions, if successfully implemented, can bring highly significant direct cost savings and plenty of other benefits for consumers, companies, financial service providers and the public sector alike. Exploitation of up-to-date information helps improve the management and predictability of the economy, enables faster reactions and reduces red tape in official reporting. All these increase agility and flexibility in the economy, thus also providing scope for new business. To enable broad-based utilisation of the opportunities offered by the digital economy, the working group lists at the end of the report its proposals for measures to promote such objectives.

In seeking to foster projects on the digital economy, account should be taken of the 'development environment' both in Finland and at EU level (Chart 6). This chart illustrates the development environment of the digital economy as a timeline from the perspective of both Finland and the EU. The aim is to give an overall picture of the operating environment and those projects that will take centre stage in the coming years.

Chart 6. Overall picture of the development environment of the digital economy



The working group considers that successful broad-based exploitation of the opportunities offered by the digital economy requires

1) Common commitment and collective will

The working group has described the most important payments-related projects from among ongoing development initiatives on the digital economy. Of utmost importance is the *National Architecture for Digital Services* programme (see point 2 below for more details). Other significant projects and development targets identified by the working group include the *income register*, *exploitation of data contents of electronic invoices*, *utilisation of bank statement information*, *transmission and reuse of information on purchase transactions*, *split payment and reporting* and *real-time economic and financial forecasting*. In order to ensure implementation of these projects and to reap the benefits from them, all stakeholders need to commit themselves to working together. The aim is to create a strong national will for completion of the projects.

2) Development of national service architecture

The main project for Finland's digital economy infrastructure is the development of the National Architecture for Digital Services. This will make it possible to significantly improve and enhance the efficiency of interoperability between organisations and information systems, covering the whole of public administration (central government and local government) and, where applicable, the private sector. The aim is to ensure that information is as widely and easily available to citizens as possible and accessible to companies for supporting current and new business and that the administrative burden for all participants diminishes and productivity grows in public administration, too.

Implementation of the national service architecture will not, as such, mean the creation of new services, but it will be a catalyst for the provision of these services in a new and more flexible way. The service architecture will also permit real-time utilisation of newly generated information directly at source and the automation of processes using the information, meaning that the income register, for example, can be built more easily under this framework.

Exploitation of the service architecture will not advance on its own, but will require strong cooperation between public administration and business enterprises allied to a visionary overall view, collective will and objectives, assumption of responsibilities and decision-making that can boost the creation of new services and guide ICT development in the use of shared infrastructures.

3) International compatibility and influence

The EU's Digital Agenda lays the basis for Europe-wide development work in the area of the digital economy. Single market harmonisation within the EU is a key objective for Finland, and exerting influence at European level is among the main priorities.

The e-invoicing dealt with in this report and closely linked with payments is also strongly promoted at EU level. Finland's forerunner status and influence in the context of the work by the EC Expert Group on e-Invoicing and the Multistakeholder Forum in the same area and on other European forums enable Finland's assumption of an important role in the implementation of the EU's Digital Agenda.¹⁰ In the field of tax reporting, the RTE programme developers, in cooperation with the Federation of Finnish Financial Services and supported by the Bank of Finland, created global ISO20022 standards for VAT reporting, among other things. In defining the tax reporting message, account was taken of the EU's ongoing VAT development projects. The message could be used on a Europe-wide basis in reporting VAT data, which would contribute to faster EU harmonisation.

Moreover, paths 1 and 2 of the ICT2015 programme constitute an integrated whole, which can be elaborated into an EU standard, together with Estonia and possibly Sweden, by the help of Horizon 2020¹¹ financing. This is a key objective in the Financial Interoperability Backbone project TARU, focused on developing digitisation and automation of financial administration.

¹⁰ The Directive (2014/55/EU) on electronic invoicing in public procurement includes a request that a European standardisation organisation develop a common European standard for e-invoicing (EN). The EN standard under this Directive will be developed by the European Committee for Standardization (CEN) at the request of the European Commission. The standard will set out and describe the core elements of an electronic invoice, and it must be compatible with existing standards on payments in order to enable automatic payment processing. The Federation of Finnish Financial Services and Tieto participate in the work for defining the semantic data model. The standard should be completed within the period of time defined in the Directive, however no later than 31 March 2017.

¹¹ The EU Research and Innovation programme for 2014–2020 <http://www.tekes.eu/en/horizon-2020/>.

Proposals for action

The working group proposes that the Payments Council form a common understanding of the promotion and timing of the projects and areas of development dealt with in this report. In other words, what our national objectives should be in the development of companies' financial administration and official reporting requirements and what Finland's target state is.

Another proposal of the working group is that the areas mentioned in the report be fostered as joint projects and that responsible parties (e.g. ministries) be designated to guide these development projects. This ensures that allocation of resources for these projects and the necessary legislative changes can be effected in a timely manner.

Finally, the working group proposes that Payments Council members and their organisations contribute to advancing the projects on the digital economy highlighted in this report, both in Finland and in international contexts.

4 Appendix: composition of the working group

Pirjo Ilola	Federation of Finnish Financial Services
Mirjami Laitinen	Sitra – The Finnish Innovation Fund
Vuokko Mäkinen	Taloushallintoliitto (Association of Finnish Accounting Firms) / Hawcon
Hanna Äijälä	OP-Pohjola Group
Bo Harald	RTE programme
Markus Hautala	Tieto Oyj
Riku Jylhäkangas	Ministry of Finance / JulkICT (Public administration ICT)
Esko Penttinen	Aalto University
Kari Kemppainen	Bank of Finland