Internet of Business: standardising financial transactional data

GUIDANCE & MAPPINGS

Result of Activity 2

Co-financed by the Connecting Europe Facility of the European Union

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Executive summary

The Guidelines describes the achievements of the project co-financed by The European Commission, Innovation and Network Executive Agency (INEA), Connecting Europe Facility (CEF), eInvoicing 2019 programme entitled "Internet of Business - standardising financial transactional data". Practical advice is given for developing and adopting the suggested XBRL GL standard and building similar solutions in the other European Union member states.

The major goal of this project was to provide all companies (especially SME-s) one unified approach for recording any of their business transactions, both external and internal, in the same format compliant with the same rules for any data element involved.

Traditionally keeping books, i.e. recording accounting entries has been considered an internal obligation for every company and the external control was applied on the results (reports, documents), not the actual data in General Ledger. Due to traditional approach the entries in General Ledger have been laconic, not containing much info from the original transactional records kept separately in specific ledgers. During the era of manual bookkeeping it was the only reasonable approach as a variety of different transactions made it difficult to gather all records at detail level into one ledger. This approach was cloned in IT-solutions that started from creating separated subsystems to be consolidated into General Ledger at account level. Million-fold expansion of capacity of IT-systems has made it possible to gather more and more detailed data, yet details and general ledger are kept separated as earlier. Most accounting solutions today follow the same old road, and few have started to realize that in many cases it is possible and preferable to utilize the concept of keeping ALL transactional records in one generic general ledger.

The project creates the description for universal accounting entry, provides guidelines for implementing it in modern accounting systems and builds actual services to be deployed based on the concept of Global Ledger.

As one of the most common business transactions in the economic world is selling and purchasing, the act of which is proven by issuing or accepting an invoice, the project team based building a conceptual Global Ledger on this easily understandable case by mapping e-invoice data elements to accounting entry data elements.

The CEF Action's objective is to foster the uptake of e-invoices EN compliant in Estonia and move towards exchanging financial data automatically and in real-time. The Action builds on existing eInvoicing solutions and makes use of the eDelivery Building Block enabling the providers to offer innovative services to their customers in the financial sector. It includes a plan to establish an innovative solution for exchanging transactional data in real-time between businesses, tax authorities and other parties using XBRL GL based data. Therefore, it will enable advanced eProcurement functionalities using the EN.

The new innovative solution, MyCompanyData Service offers technical services to eInvoicing operators and ERP providers to receive and send data in XBRL GL format to different parties as Tax Agency by using distributed ledger technology and to convert the data to EN compliant eInvoices and exchange them over PEPPOL network. One of the project team members Unifiedpost AS existing Access Point is used for the connection and interoperability through the PEPPOL network.

This Guidance and related documentation allow to use the same approach in every business or EU country. The documentation will provide the needed activities and agreements, but also **technical**

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data sets, preferred messaging and other specifications to exchange financial data between different stakeholders. This document is available for public use and lets MyCompanyData Service to be easily implemented (with needed national adjustments) in every EU country to help **standardise transactional data storage and transfer** for data-driven statistics or tax reporting, exchanging details of business transactions, etc.

The guidance document provides the documentation and actions needed for the eProcurement process and how XBRL GL will make the process happen automatically and in real-time over MyCompanyData. MyCompanyData service will be further upgraded after the Action by those companies whose business interest will be to use the service.

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Terms and definitions

Financial data – information about a company that tells you about its financial health and performance. It's used by both internal management as well as outside stakeholders, such as investors and government regulators.

Transaction - an event involving an interchange of goods, money or services between two or more parties.

Business document - Business documents refers to several types of documents which have different sections and content including quotation, purchase order, invoice, delivery note, returns note, credit note, statement etc. When here talk about business documents, we are exclusively meaning electronic business documents, i.e. NOT paper or pdf. Business documents (from product catalogue to delivery receipt) are all defined in the UBL 2.0 or UBL 2.1 standard.

Proof of transaction (Voucher) - a piece of evidence, which proves that a certain event or transaction is carried out.

Entry - a method used to record all individual transactions made by a company into its account in the Accounting Records using Debits and Credits.

Account - a record in an accounting system that tracks the financial activities of a specific asset, liability, equity, revenue, or expense.

API - An Application Programming Interface (API) is a tool set that programmers can use to build interfaces between solutions (ex.: data transfer channels).

B2B - Business-to-Business

B2C - Business-to-Customer

B2G - Business-to-Government

CEF - Connecting Europe Facility

E-invoice - An invoice that does not get any physical form in its lifetime and moves directly from a machine to another machine.

ERP - Enterprise Resource Planning (ERP) is a process used by companies to manage and integrate the important parts of their businesses (ex.: accounting).

KMD – *käibedeklaratsioon* in Estonian, VAT tax declaration

OpenPEPPOL - Pan-European Public Procurement On-Line

Operator - A service provider who provides e-invoice delivery services - from data to platforms.

RTE - Real-Time Economy, a digital ecosystem where transactions between diverse economic actors take place in or near real time. This means replacing paper-based business transactions and administrative procedures (across sectors and borders) by automatic exchange of digital, structured and machine-readable data in standardized formats.

SME - Small and Medium Enterprises, meaning that they have less than 250 employees.

TSD – *Tulu- ja sotsiaalmaksu, kohustusliku kogumispensioni makse ja töötuskindlustusmakse deklaratsioon* in Estonian, Income, social insurance, retirement and unemployment insurance taxes declaration.

TÖR – *Töötamise register in Estonian*, register of employment

UBL - Universal Business Language

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UN/CEFACT - United Nations Centre for Trade Facilitation and Electronic Business

XBRL (GL) - *Extensible Business Reporting Language* (Global Ledger) is XML-based format of representing data in a structured and standardized way, intended for exchanging business and financial information, allowing faster and efficient processing.

XML - *Extensible Markup Language*

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Introduction

The European Commission decided in 2019 to award a grant for the action entitled "**Internet of Business - standardising financial transactional data**".

The major goal of this project was to provide all companies (especially SME-s) one unified approach for recording any of their economic transactions, both external and internal, in the same format compliant with the same rules for any data element involved.

Traditionally keeping books, i.e. recording accounting entries has been considered an internal obligation for every company and the external control was applied on the results (reports, documents), not the actual data in General Ledger. Due to traditional approach the entries in General Ledger have been laconic, not containing much info from the original transactional records kept separately in specific ledgers. During the era of manual bookkeeping it was the only reasonable approach as a variety of different transactions made it difficult to gather all records at detail level into one ledger. This approach was cloned in IT-solutions that started from creating separated subsystems to be consolidated into General Ledger at account level. Million-fold expansion of capacity of IT-systems has made it possible to gather more and more detailed data, yet details and general ledger are kept separated as earlier. Most accounting solutions today follow the same old road, and few have started to realize that in many cases it is possible and preferable to utilize the concept of keeping ALL transactional records in one generic general ledger.

The project created the description for universal accounting entry and provides guidelines for implementing it in modern accounting systems and lets actual services to be built following the concept of Global Ledger based on the XBRL Global Ledger taxonomy framework standard[1], which is the part of the most commonly used business reporting language (XBRL) in the world.

As one of the most common transactions concerning all business entities in the world is selling and purchasing, the act of which is proven by issuing or accepting an invoice, thus being an easily understandable case for building a conceptual Global Ledger. The world has been moving in the direction of replacing invoices in any traditional format (paper, PDF file) with electronic invoices (or e-invoices in short, meaning machine-readable standardized set of data) paving the way to futuristic Real-Time Economy and making it even easier to prove our concept.

The CEF Action's objective was to foster the uptake of e-invoices EN compliant in Estonia and move towards exchanging financial data automatically and in real-time. The Action builds on existing eInvoicing solutions (Estonian X-road integration for connection to public sector, PEPPOL BIS v3 compatibility and EN compliance in e-invoice operators Telema, Eesti Post and Tieto Estonia; PEPPOL Access Point and SMP set up in e-invoice operators Telema and Eesti Post; Invoicegate.com development (PEPPOL and EN compliance) in Unifiedpost Group for cross-border e-invoicing in EU) and makes use of the eDelivery Building Block enabling the providers to offer innovative services to their customers in the financial sector. It includes a plan to establish an innovative solution for exchanging transactional data in real-time between businesses, tax authorities and other parties using XBRL GL based data. Therefore, it will enable advanced eProcurement functionalities using the EN.

[1] XBRL Global Ledger 2015, source at: https://specifications.xbrl.org/work-product-index-xbrl-gl-xbrl-gl-2015.html

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The current Action made five accounting software service providers (BCS Itera, SimplBooks, Skriining, Account Studio, and Columbus Eesti) to update the systems to receive and send data in XBRL GL format for standardised transactional reporting (which includes the whole e-procurement document chain).

In addition, the Action allowed to build a new innovative solution, MyCompanyData Service, which offers innovative services to eInvoicing operators to receive and send data in XBRL GL format to different parties as Tax Agency by using distributed ledger technology and to convert the data to EN compliant eInvoices and exchange them over PEPPOL network. Unifiedpost Group AS existing Access Point is used for the connection and interoperability through the PEPPOL network.

This Guideline is the base for agreements, rules, technical specifications and mapping to start using common standardised language for financial transactional data. It provides guidance for setting up MyCompanyData Service where accounting entries in XBRL GL format are stored, exchanged and selected for the reporting documents automatically and in real-time.

For these purposes, Action's partners have mapped common standards, made detailed analysis and re-used existing knowledge in order to create this guidance with specific documentation. The analysis and the mapping exercise involved external experts to validate the findings and documentation. The experts represented both public sector (e.g. Ministry of Economic Affairs and Communications and Estonian Statistics) and private sector, specifically accountants (members of Association of Estonian Accountants), other e-invoicing operators and larger e-invoice issuers in Estonia which have shown their support and interest on XBRL GL standard and the new services like MyCompanyData Service.

At the initial phase of the project the project team analysed **XBRL GL standard**, **TALTIO** project[2] (as theoretical best case scenario from 2018 prototyping project in Finland), **MyData** concept[3] (for innovative approach) and possibility to use blockchain/distributed ledger technology (for secure data exchange).

[2] TALTIO Proof-of-Concept Documentation, 2018, source at:
https://nordicsmartgovernment.org/sites/default/files/2019-09/taltio_-_test_of_datawarehouse.pdf

[3] Bo Harald, Roadmap for Real Time Economy and MyData for Europe, 2018, source at:
https://www.mkm.ee/sites/default/files/roadmap_for_real_time_economy_and_mydata_for_europe.pdf

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1. Creating Real-Time Economy step by step

According to Nordic Smart Government project[4] (abbr. NSG3) exchange of business documents as invoices, orders and receipts between business partners are still largely done using pdf and paper. The uptake of e-invoicing in B2B has not followed the same speed as in public procurement where there is an EU regulation in place. This situation creates a set of obstacles for further automation, creates lead time in the use of the transaction data for financial overview and external use of data. Adoption of e-invoices, e-receipts and e-orders is a prerequisite for the effects promised by the Real-Time Economy.

NSG 3 suggests specific actions to increase the level of e-invoices in B2B. Special attention is given to the use of product information in e-invoices, e-orders and e-receipts. Classification of products and services traded is one basis for correct bookkeeping, and becomes an important basis for taxation, international VAT and reporting to sectoral public bodies. In addition, product information plays a crucial role when it comes to analysis whether we are talking about market analysis, official statistics or research. The lack of machine-readable product information in invoices substantially reduces the use of the financial data downstream.

Access to real time financial transactions is a big issue today. There are several examples of new innovative services e.g. between banks and accounting systems. The services require near real time access to customers' accounting systems; however, *technical interoperability* is still a problem. A regulation is required to ensure that business systems can be accessible *(legal interoperability)*. While in banking after Payment Services Directive 2 (PSD2)[5] there is standardized access to bank account information in real time, the same is not the case for financial data.

Sharing data across organisations requires clear and unambiguous interpretation of the data. The lack of this common understanding leaves room for misunderstandings, wrongful decision making and makes portability difficult. This goes for business documents, transactions and aggregated reports. Common understanding (*semantic interoperability*) is achieved by standardizing the content and meaning across countries and formats. In addition, national registries must be commonly understood for the information to be interpreted correctly. Furthermore, the status of the data must be clearly understood, e.g. if an invoice is received, accepted, has entered bookkeeping or books have been closed.

Financial data available in real time calls for secure and robust infrastructure for accessing the data, and makes sure confidentiality, integrity and availability is taken care of. Protecting the data calls for understanding what transactions include trade secrets and personal information and making sure only authorized users have access to these data. It also requires robust national building blocks for authentication and authorization with Nordic interoperability and using this when accessing the SMEs data in the business systems. Sharing of SMEs data will need the ability to control the access, and hence user consent to the sharing of transactions, but also to retract the consent. The data must not be compromised in any way, and unauthorized and unintentional change of the data must be avoided.

[4] Roadmap for realisation of the Nordic Smart Government ecosystem, 2020, source at: https://nordicsmartgovernment.org/sites/default/files/2020-11/Samlet%20NSG%20roadmap%20og%20appendix_0.pdf

[5] PSD2 directive opens services for three actors; the Payment Initiator Service Provider (PISP), the Account Information Service Provider (AISP) and the Card Based Payment Instrument Issuer (CBPII). It is only the AISP analogy of PSD2 that is relevant here, i.e. that a third party can access bookkeeping information from a business system.

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Furthermore, the availability of present and historical data must be ensured. Also, as a part of security, all changes must be recorded since decisions will be made based on the data.

SMEs are obligated by law to report to the governments. Currently financial reporting (annual report and tax- and vat-reporting) is not fully automated, but the more machine-readable business documents becomes the more ability there will be to automate the reporting. When it comes to reporting to other public agencies, much more can be automated especially when product information is available. Reporting formats across Nordics should be harmonized and using an international standard like XBRL should be used.

Analytical functions over transactional data includes an SME benchmarking itself against its sector, official statistics, and research which often requires historical data from the SME. Currently the availability of analytical data use is very sparse, and in practice is reduced to analysing historical annual accounting or tax reporting data. Making micro-aggregates of the transactions is a prerequisite for answering hypotheses on days and weeks old data. Micro-aggregates must also be able to filter out sensitive data.

1.1. The Process of gathering and use of financial information

Nordic Smart Government sees the gathering and sharing of financial information basically as a three-stage process[6]:

- getting the digital business documents (e.g. invoices, receipts and orders)
- manage and share the detailed transactions (e.g. for bookkeeping, use of product information, and accounting)
- manage access to aggregated data ("micro aggregates") for reporting, statistics and analytics

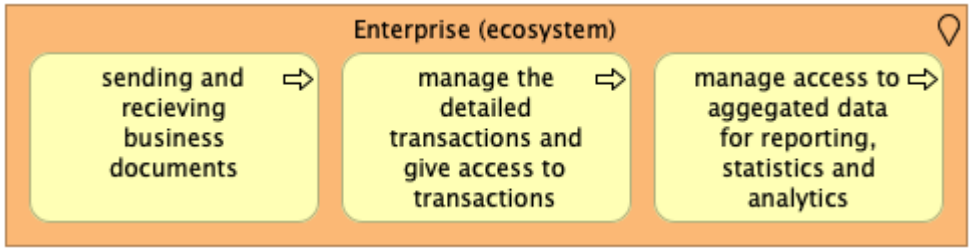

Figure 1 - simplified data flow process
Source: Roadmap for realisation of the Nordic Smart Government ecosystem, 2020.

NSG has brought out capability areas which were important to address also in the CEF project:

1. Digital business document adoption - the standardisation, acquisition of the invoices, receipts and bank account statements and the adoption of them, and ensuring that the digital business documents have high quality, integrity is maintained and that they are valid, e.g. to prevent fraud.
2. Availability of transaction level information - in order to support portability, sharing data with partners, and audit.
3. Common understanding - common representation of data.
4. Data protection - restricting access, safeguarding data, maintaining availability and providing traceability.

[6] Roadmap for realisation of the Nordic Smart Government ecosystem, 2020.

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5. Reporting and Analytics - reports and access to aggregated data and understanding the data across businesses.

2. Standardising financial transactional data – extended accounting entry

Traditional accounting entry or record in General Ledger depicts any business transaction or accounting adjustment as postings to specific accounts described in the Chart of Accounts and sometimes expanded with analytical classification tags for more detailed reporting. Typically, such an accounting entry does not contain specific details of transaction or adjustment, this data is stored with the original document and records in sub-ledgers (e.g. Sales Ledger or Purchase Ledger which contains invoice details).

This approach was practical in the very beginning of modern accounting and at early stages of computerization when data storage had to be carefully managed. Most of the accounting software in use today follows such a modular structure as functionality available to the end user is focused on specific actions which typically create accounting entries automatically in the background. Thus, separate records are kept for an invoice with all the data about the client, items sold, etc. and accounting entry with revenue and debt postings.

Considering vast improvements in information technology and the fact that most business entities are small and mid-sized enterprises with limited amount of transactions and expectations to keep their administrative burden as low as possible it is reasonable to combine all data only into General Ledger records. An accounting entry is expanded with the details from the original document or adjustment. Such records in standardized format are the basis for all relevant reporting and allow easier sharing of detailed data with third parties.

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2.1. Conceptual model for recording business transactions

The definitions above is described with the following relations (to be read from left to right)

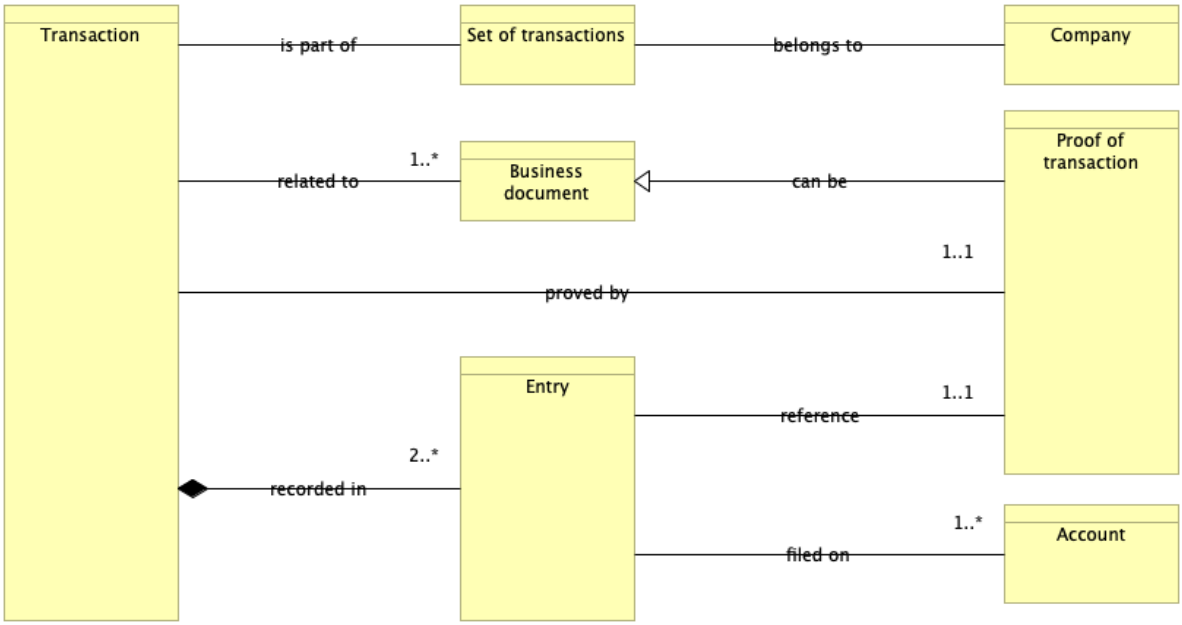

Figure 2 – Relations between main components describing recording of business transactions
Source: Roadmap for realisation of the Nordic Smart Government ecosystem, 2020.

2.2. Original document and accounting entry

Accounting regulation generally requires all business entities to keep their books and record all business transactions according to the schema depicted on Figure 2. All transactions and adjustments are related to original documents and recorded as accounting entries. For adjustments the basis might be some contract or agreement, internal order or even accounting guidelines in a business entity. That forms a foundation of MyCompanyData Service which is basically a storage of accounting entries recorded in standardized format, no matter how specific accounting or ERP software handles the data internally.

For reporting purposes, accounting entry records contain lots of information traditionally kept in subledgers or even separate systems – e.g. dates of employment, changes in job positions or contract conditions, or ending the contract, etc. Such specific data is represented by relevant EntriesType tags/classification items. For providing the required evidence, the accounting entry record contains reference to source/original documents (link in DocumentLocation field).

The full list of XBRL GL elements in use is provided in an additional file „Accounting Entry Data Elements “. MyCompanyData Service follows XBRL Global Ledger 2015 standard.

Classification items/tags for various reporting purposes is described in chapter 4.

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3. Mapping of accounting entry to invoice

3.1. E-invoice standard: accounting

E-invoice is one of the best examples of a machine-readable business document. Invoices are the most common and numerous original documents for most business entities. Invoices contain details for various taxation and statistical reports, therefore the automation of creating accounting entries in XBRL GL format brings substantial advantages to all stakeholders – reduced administrative burden for business entities and faster data collection for the authorities.

Recording a business transaction into the financial accounts of an organization is one of the main objectives of the invoice. According to financial accounting best practice and VAT rules every Taxable person shall keep accounts in enough detail for VAT to be applied and its application checked by the tax authorities. For that reason, an invoice shall provide for the information at document and line level that enables booking on both the debit and the credit side[7].

Core invoice model contains all necessary information for detailed accounting entry:

- information at document level that enables the identification of the Payee, if different from the Seller;
- information at document level that enables booking on both the debit and the credit side;
- information at invoice line level that enables booking on the debit side;
- Buyer-specific booking information (account numbers).

3.2. Mapping of accounting entry in XBRL GL to invoice in UBL 2.1

One of the most important steps while creating MyCompanyData Service was mapping the accounting entry in XBRL GL and e-invoice in UBL 2.1 to be compliant with EU norm. As a reference the working group used NSG TALTIO similar mapping as our aim is to keep MCDS aligned with initiatives creating similar solutions in Europe to facilitate cross-border applications in business-to-business (B2B) and business-to-government (B2G) segments.

UBL 2.1 is the most commonly used format in e-invoicing. UN/CEFACT acceptance was solved in e-invoicing service providers' systems by re-using Internet of Business project 2016 (2016-EU-IA-0120) outcomes as well as Invoicegate.com project (2018-EU-IA-0058) outcomes.

EU e-invoice standard (EVS-EN 16931-1:2017+A1:2019/AC2020) documents all possible data elements with business rules (semantic model). The working group mapped all relevant data elements of e-invoice in EU norm compliant UBL 2.1. format to accounting entry data elements in XBRL GL format. The mapping is available in an additional file „The mapping between EN UBL 2.1 e-invoice and XBRL GL accounting entry data standard ".

[7] Electronic invoicing – Part 1: Semantic data model of the core elements of an electronic invoice, source at: https://www.evs.ee/et/evs-en-16931-1-2017+a1-2019-ac-2020

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4. Data driven reporting

Concept of data-driven reporting is based on making the structured, standardized data at adequately detailed level available for the authorities and eligible third parties (banks, insurance companies, etc.) instead of traditional aggregated reports. In Estonia as one of the results of the zero-bureaucracy initiative[8] started in 2015 was initiating Reporting 3.0 project[9] aiming at replacing some common statistics and taxation reports with collecting datasets by the state authorities containing records of detailed accounting entries. XBRL Global Ledger taxonomy framework was chosen by the Reporting 3.0 working group as the basis for representing and formatting transactional data into machine-readable files that can be exchanged automatically between a business entity's and the authorities' information systems. Outcome of the Reporting 3.0 project was making it available to send in "Salary and labour report" as a set of records instead of traditional report[10].

4.1. Understanding the concept

Data-driven reporting raises several questions as does this allow the authorities to start pulling data directly from business entities' accounting and ERP systems, is it paving the way to VAT clearance models or how to guarantee cyber security for making detailed data available for the third parties. The answer is why the MyCompanyData Service has been built – to act as a middleware between businesses' and governmental or third parties' IT solutions, letting the legitimate owner of the company (business entity) to control what and to whom specific data is made available on the same terms which govern traditional reporting or queries. Although MyCompanyData Service could be technically utilized for establishing VAT clearance model it requires a lot of preparatory efforts to build consensus on the topic even before starting to change the legislative framework. Traditionally in the EU member states the businesses declare the taxes or send in other reports after the fact at regular intervals (monthly, quarterly, yearly).

Data-driven reporting allows replacing most aggregated reports based on accounting data with sending in the data sets, including the most common tax reports (VAT, Social- and income tax), customs and statistics reports (EKOMAR in Estonia). As the authorities have already separate registers for different activities (e.g. TÖR in Estonia is the mandatory system for recording all changes in employment contracts for all business entities), then combining the data from various sources lets the authorities get a better picture of the health of the economy without insisting for more reports, thus reducing the administrative burden of businesses.

In practice it requires more attention to guarantee the accuracy of the details stored in accounting, demanding better control and monitoring in accounting and ERP systems in use. Although MyCompanyData Service technically validates the accounting entries and provides lists of correct and updated classification items, the correctness of using specific tags on any entries lies on the business entity.

[8] Bürokraatia vähendamise rakkerühma aruanne vabariigi valitsusele, 2018, source at: https://www.mkm.ee/sites/default/files/burokraatia_vahendamise_rakkeruhma_aruanne_vabariigi_valitsusele.pdf

[9] Aruandlus 3.0, source at: https://www.emta.ee/et/ariklient/tulu-kulu-kaive-kasum/mta-statistikaameti-ja-eesti-panga-uhisprojekt-aruandlus-30

[10] Vajalikud materjalid tarkvaraarendajale, source at: https://www.stat.ee/et/vajalikud-materjalid-tarkvaraarendajale

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In general, introducing the concept of data-driven reporting at large scale, member states must review the reporting requirements and consider the value of what exchanging transactional data technically in real-time might bring to the whole society.

4.2. Mapping XBRL GL accounting entry vs statistics report

The project team mapped accounting entry's XBRL GL data elements and elements of "Salary and labour report" of Estonian Statistics as an already available service built by Reporting 3.0 project. Technically the mapping suits for any new reports to be introduced in data-driven format, including VAT and Social- and income tax reports (KMD and TSD in Estonia), thus the project team provides these mappings as an additional files "ANNEX III The mapping between Tax and Customs Board KMD and accounting entry data standard - final version.xlsx" and "ANNEX IV The mapping between Tax and Customs Board TSD and accounting entry data standard - final version.xlsx".

4.3. Data quality - classificators

One of the most important factors ensuring the outcome of the MyCompanyData Service is data quality. The most reliable way of achieving this result is to make available and use classification lists. Data elements are required to contain only items provided in the list. Generic data elements form combinations of three, e.g. AccountSub, AccountSubID ja AccountSubType – description of subaccount, code of subaccount and type of subaccount respectively (called typically "dimensions" in ERP software). This allows in principle to present an unlimited number of characteristics for one entry depending on reporting requirements. As in practice the same accounting entry might be providing information for different reports collected by different institutions, then applying all tags addressing the needs of all report collectors the business entity can send in multiple "reports" just by making its data set available.

Classifications are established by the authorities according to the unified rules-set and are managed by specific institutions (Estonian Statistics, Tax & Customs Board, other governmental institutions). Specific classification lists for specific data elements are administered by XBRL GL taxonomy framework's coordinator or by the MyCompanyData Service provider. The most important aspect is that for collecting the same data, different organizations use the same classifications list for the same data element or combination of generic data elements. This guarantees that businesses must apply specific characteristics only once while recording accounting entry and do not have to waste time on rearranging the data for different institutions collecting basically the same data in slightly different form or aggregation level. In the future the amount of traditional reports is reduced to the level where i is not possible or feasible to enrich the accounting entries with additional details.

The description of "Salary and labour report" data elements and classification lists done by the Reporting 3.0 project team is provided in the Appendix 1 and additional file "AA3_TAKSONOOMIA_PALK_TÖÖJÕUD_20201201_SA_MTA.XLSX ".

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5. Technical specifications

Functional overview, technical specifications and documentation for solution providers building links to or applications for MyCompanyData Service is provided in additional file „MyCompanyData service specification and mapping documentation“.

6. MyCompanyData Service (MCDS) sustainability

Project team has agreed to establish a consortium to keep the currently developed service alive, continue communication with strategic stakeholders like new service providers and state authorities as well as discuss the possible next steps on developing the MCD service further. Project team welcomes new service providers as members of the MCDS consortium.

Project team has agreed that MCDS should be in use as a distributed ledger service where one service can be a part of an ERP or eInvoicing service provider's system. Besides providing service for their clients, these service providers can also provide the service for ERPs who do not have the MCD service developed inside their systems. All distributed services can exchange data between different MCD services, with state authorities or send and receive data from other market players, e.g. e-invoices exchanged over PEPPOL network.

The source code for the MCD service uptake and integration is published as open source code in the GitLab: https://gitlab.com/internetofbusiness/mcds. The owner of the source code is the same project consortium established for the current project. Interested parties are welcome to take the service in use in their systems, test their developments with current project team and deploy new possibilities for their customers, but the project team expects that new service providers integrating the service will take contact with the project team in order to develop new features together and commonly as well as base on the same terms and conditions about the data security, privacy and interoperability. This is needed for the service to be standardised, commonly used and further developed in different MCD services across sectors and borders. New classification is expected to be developed by the state authorities and the project consortium is foreseen to take the new classification elements in use in the MCD service. It is expected in the near future (at least in Estonia) that all reporting to the state should be done using a data-driven approach similarly as used in the new MCD service, meaning, in few years' time not only financial reporting data, but also sector-specific business data will be submitted to the state using data-driven approach coming from entrepreneurs business software's (accounting, supply chain, storage system, customer relations, etc software).

For the service to be used in a complete manner, there needs to be developed a common transportation layer and addressing logic. This activity is planned as the next step after the current project. Until that time, the existing MCD service will use the existing e-invoice operator to exchange e-invoices over PEPPOL network and reports will be sent over national X-road to the state authorities. Thus, data exchanging between different MCD services is not yet possible but will be developed in the future.

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Conclusions

The major goal of CEF project „**Internet of Business - standardising financial transactional data”** was to provide all companies (especially SME-s) one unified approach for recording any of their business transactions, both external and internal, in the same format compliant with the same rules for any data element involved.

As a result of the project specific middleware application, MyCompanyData Service was developed and tested with five accounting and ERP software vendors and one international e-invoicing operator, which provides functionality to convert accounting entry into EU compliant e-invoice and vice versa. Testing included sending in a data-driven report “Salary and labour” to Estonian Statistics. MyCompanyData Service can be deployed as a separate service offered by accounting software vendors or by any business entity interested in making it available commercially. Deploying the service requires close co-operation with governmental institutions which must guarantee the legal environment supporting data-driven reporting and IT solutions capable of receiving and processing the data sets prepared by MyCompanyData Service.

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Appendix 1 - Juhised klassifikaatorite kasutamiseks

Dokument on koostatud klassifikaatorite kasutamise täpse juhise andmiseks TÖRiga (Töötamise registriga) liidestuvatele infosüsteemidele. TÖRiga liidestunud infosüsteemid saavad aruandluseks vajalikku infot edastada masin-masin liidestuse kaudu.

Organisatsioonid liidestavad oma infosüsteemid - milleks on peamiselt finantsjuhimis- või raamatupidamistarkvarad - TÖRiga, milles nad haldavad oma töötajaid. Liidestamine tähendab Statistikaameti ja EMTA hallatavate klassifikaatorite kasutamist oma infosüsteemis. Liidestuvad infosüsteemid loovad kasutajarakenduse, et liidestuvate klassifikaatorite tunnuseid saaks oma infosüsteemis kirjeldada samatähenduslikult (sama semantikaga), mida kasutavad EMTA ja SA. Liidestunud infosüsteemid (1) impordivad klassifikaatorid (st klassifikaatori väärtused) ning (2) ekspordivad loodud kirjed, mis on kasutanud nende klassifikaatorite väärtusi, TÖRi. Selliselt eksporditud kirjed ongi klassifikaatoreid kasutava aruandluse aluseks. Vähemalt ühel juhul, milleks on ametite klassifikaator, on lisaks selle klassifikaatori väärtuste kasutamisele võimalik ja osal juhtudel vajalik lisada vabaväljaline väärtus.

Käesolevas dokumendis on kirjeldatud ainult klassifikaatorite liidestamise sisulisi aspekte.

A. lehel ANDMEKOOSSEIS on loetletud andmeesitaja esitatav andmekoosseis, mille hulgas on järgmised 13 klassifikaatorit

	klassifikaatori nimetus	tähis
1	Tööjõukulu liigid	TKL2017ap
2	Maksustatavate väljamaksete liigid	VALJAMLIIK2017ap
3	Deklareeritud summade liigid	SUMMALIIK2017ap
4	Tõendi A1(E101) väljastanud riik	A1_E101RIIK2017ap
5	Töötamise liik	TOOTLIIK2017ap
6	Töötamise asukoha riik	RTK2T2013ap
7	Töökoha asukoht	EE_ADS
8	Ametinimetus	AK2008ap
9	Kande tüüp	KANDETYYP2017ap
10	Töötamise peatumine ja lõpetamine	TOOTPEATLOPALUS2017ap
11	Muu info	MUUPTJINFO2017ap
12	Majanduslik sisu	et-gaap_2017-01-00
13	(Algus-)kuupäev/Lõppkuupäev	SYNDMUS2017ap
	** tähed 'ap' klassifikaatori tähise lõpus tähendavad seda, et klassifikaator on aegpidev; aegpidevus tähendab, et klassifikaatori elementidel on kehtivus ning kehtetuid väärtusi ei eemaldata vaid märgitakse nende kehtivuse lõppkuupäev ning uusi elemente lisatakse regulaarselt*	

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B. lehel KLASSIFIKAATORI STRUKTUUR on kirjeldatud, milline on eksporditavate ja imporditavate klassifikaatorite struktuur ja väljade tähendused.

Väljade kasutamine on klassifikaatorite kaupa erinev ning kasutamine on kirjeldatud iga klassifikaatori juures ning lisatud on elementide juures vajalikud lisaselgitused nende kasutamise kohta.

C. iga KLASSIFIKAATORI kohta on oma leht, millel on toodud selle klassifikaatori näidis

D. lisaks on sellest failist eraldi kättesaadavad kõik klassifikaatorid kas:
   - TÖR liidestuse APIs (.json vormingus)
   - klassifikaatorite publitseerimisrakenduses (.XML vormingus) (aeg, mil need on seal publitseeritud, tuleb veel kindlaks määrata)

Klassifikaatori struktuur

Elemendi kood	Elemendi kirjeldus
Päise osa 1 kord klassifikaatori kohta	
codeListCode	Klassifikaatori kui terviku kood, mida on vaja, kui edastatakse mitme klassifikaatori andmeid
codeListName	Klassifikaatori nimetus
Elemendi kirjelduse osa iga elemendi kohta (klassifikaatorite kaupa on väljad väärtustatud eri ulatuses)	
code	Klassifikaatori elemendi kood
parentCode	Hierarhias kõrgemal oleva selle elemendi grupi kood
level	Hierarhilise klassifikaatori taseme kood
selectable	Klassifikaatori element on valitavuse tähis (0 = ei kasutatata; 1 = kasutatakse)
name_ET	Elemendi nimetus eesti keeles
name_EN	Elemendi nimetus inglise keeles
name_RU	Elemendi nimetus vene keeles
explanation_ET	Elemendi kohta esitatud kirjeldav või selgitav tekst eesti keeles
explanation_EN	Sama, mis eelmine, inglise keeles
explanation_RU	Sama, mis eelmine, vene keeles
included_ET	Lähedased või sünonüümsed elemendid, mõnes klassifikaatoris esitatud ka kui näited, eesti keeles
included_EN	Sama, mis eelmine, inglise keeles (NB! Sünonüümide osas pole keelelist üks-ühest vastavust)
included_RU	Sama, mis eelmine, vene keeles (NB! Sünonüümide osas pole keelelist üks-ühest vastavust)
included_extra_ET	Väli jääb täitmata
included_extra_EN	Väli jääb täitmata
included_extra_RU	Väli jääb täitmata
excluded_ET	Lähedased või sarnase nimetusega elemendid, mis aga liigitatakse muudesse rühmadesse
excluded_EN	Sama, mis eelmine, inglise keeles
excluded_RU	Sama, mis eelmine, vene keeles
unitCode	Klassifikaatori sellel elemendil kasutatava mõõtühiku kood
unit_ET	Sama, mis eelmine, mõõtühiku tähis eesti keeles

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unit_EN	Sama, mis eelmine, mõõtühiku tähis inglise keeles
unit_RU	Sama, mis eelmine, mõõtühiku tähis vene keeles
validFromDate	Elemendi kehtivuse algusaeg (YYYY-MM-DD)
validUntilDate	Elemendi kehtivuse lõppaeg (YYYY-MM-DD)

Appendix 2 – SUBJECT MATTER OF THE AGREEMENT

ARTICLE 1 – SUBJECT MATTER OF THE AGREEMENT

The Commission has decided to award a grant, under the terms and conditions set out in the Special Conditions, the General Conditions and the other Annexes to the Agreement, for the action entitled "**Internet of Business - standardising financial transactional data**" ("the action"), action number **2019-EE-IA-0016** as described in Annex I

ARTICLE I.1 – SCOPE AND OBJECTIVES OF THE ACTION

The Action's objective is to foster the uptake of e-invoices EN compliant in Estonia and move towards exchanging financial data automatically and in real-time. The Action builds on existing eInvoicing solutions (Estonian X-road integration for connection to public sector, PEPPOL BIS v3 compatibility and EN compliance in e-invoice operators Telema, Eesti Post and Tieto Estonia; PEPPOL Access Point and SMP set up in e-invoice operators Telema and Eesti Post; Invoicegate.com development (PEPPOL and EN compliance) in Fitek Group for cross-border e-invoicing in EU) and makes use of the eDelivery Building Block enabling the providers to offer innovative services to their customers in the financial sector. It includes a plan to establish an innovative solution for exchanging transactional data in real-time between businesses, tax authorities and other parties using XBRL GL based data. Therefore, it will enable advanced eProcurement functionalities using the EN.

The Action will update the systems of 5 accounting software service providers (BCS Itera, SimplBooks, Skriining, Account Studio, and Columbus Eesti) to receive and send data in XBRL GL format for standardised transactional reporting (which includes the whole e-procurement document chain).

In addition, the Action will build a new innovative solution, MyCompanyData, which will offer innovative services to eInvoicing operators to receive and send data in XBRL GL format to different parties as Tax Agency by using distributed ledger technology and to convert the data to EN compliant eInvoices and exchange them over PEPPOL network. FITEK AS existing Access Point will be used for the connection and interoperability through the PEPPOL network.

Activity 2: Pre-analysis, mapping and agreements
The main purpose of this activity is to create the base for agreements, rules, technical specifications and mapping to start using common standardised language for financial transactional data. The beneficiaries will update their existing systems to be compliant with XBRL GL standard as the most commonly used business reporting language in the world. They will also create the MyCompanyData service where XBRL GL data is stored, exchanged and selected for the reporting documents automatically and in real-time. For these purposes, Action's partners will map common standards, make detailed analysis and re-use existing knowledge in order to create a guidance book with specific documentation. The analysis and the mapping exercise will involve external experts as well to validate the findings and documentation. The experts that will be involved are coming from the banking sector

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(e.g. Swedbank and LHV Bank), public sector (e.g. Ministry of Justice, Ministry of Finance and Ministry of Economic Affairs and Communications, Tax and Customs Board and Estonian Statistics), accounting sector (ERK members), other e-invoicing operators (e.g. Telema) and also bigger e-invoice issuers in Estonia (e.g. Telia and Eesti Energia). They have shown their support and interest on XBRL GL standard and the new future services like MyCompanyData.

This activity is composed of the following tasks:

Task 2.1. Pre-analysis
This task aims at pre-analysing XBRL GL standard, TALTIO project (as theoretical best case scenario), MyData concept (for innovative approach) and possibility to use blockchain/distributed ledger technology (for secure data exchange) and how to integrate XBRL GL with needed secure user-driven approach.

Task 2.2. Mapping of XBRL GL standard based on TALTIO and Reporting 3.0 projects outcomes as reference.
The task aims at:
- mapping XBRL GL vs UBL 2.1 to be compliant with EU Norm - UBL 2.1 is the most commonly used standard in e-invoicing. UN/CEFACT acceptance is solved in e-invoicing service providers' systems by re-using IoB project 2016 (2016-EU-IA-0120) outcomes.
- mapping XBRL GL vs tax and statistics reporting documents in Estonia.

Task 2.3. Guidance document development and scalable vision for the new ecosystem.
This task aims at creating guidance and documentation to use the same approach in every business or EU country. The documentation will provide the needed activities and agreements, but also technical data sets, preferred messaging and other specifications to exchange financial data between different stakeholders. This document will be available for public use and easily implemented (with needed national adjustments) in every EU country to help standardise transactional data storage and movement for tax reporting, business transactions, etc.

The final guidance document will provide the documentation and actions needed for the eProcurement process and how XBRL GL will make the process happen automatically and in real-time over MyCompanyData. MyCompanyData service will be further upgraded after the Action by those companies whose business interest will be to use the service.

Activity 3: Update of existing service providers' systems to be compliant with XBRL GL standard
The main purpose of this activity is to update the existing service providers' (Fitek) and the accounting software providers systems (Account Studio, Simplbooks, BCS Itera, Columbus Eesti and Skriining) to be compliant with XBRL GL standard for transactional data in order to decrease the need for manual alterations in every system. The activity will use the outcomes of activity 2 on the mapping documentation.

Task 3.1. Analysis
The beneficiaries will use the mapping documents from Activity 2 but will also conduct internal technical analysis and preparing specifications to define required tasks to integrate XBRL GL standard into their existing systems architecture.

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Task 3.2. Development
The task aims at binding the existing systems with XBRL GL and implementing the standard. Technical solutions necessary to generate, consume and exchange XBRL GL documents will be added to existing software, according to outcomes of Activity 2.

Development phase might be different and depends on specific system, but development activities are foreseen as e.g.:

- Underlying data structures (registers, setups, mappings, logs etc.) and according UI;
- Database migrations;
- Business logic to convert ERP transaction into the XBRL GL transaction;
- On-the-fly data migrations to XBRL GL;
- Issue business transactions in XBRL GL format;
- Issue statutory reports in XBRL GL format;
- API services;
- Technical documents and software manuals will be available;
- Automated tests;
- Data communication and other technical sections necessary.

Task 3.4 Deployment
The task aims at deploying the functionality for each service provider's system to export data in XBRL GL, either to the service provider or to a public institution (including tax and statistics reporting).

The functionality and documentation added as outcome of Task 3.2 will be made available to ordinary users of the involved software systems. This includes software/service upgrades to each client, manuals/guides/tutorials to end-users, possibly training, live tests and validation etc.

The purpose is to make it possible for end users to export their data (invoices to start with) in XBRL GL format after project deployment.

Activity 4: MyCompanyData service for businesses
The main purpose of this activity is to create the MyCompanyData service, where all business transactions are standardised and move automatically and in real-time. The service is mostly targeting businesses (especially SMEs) to bring them new value with new services and to make their business transactions move automatically, without manual alterations.

In Estonia, the e-invoicing format is already standardised in EU Norm and integrated commonly used connections (PEPPOL and X-road) to be interoperable with the EU. Within the Activity 3, the financial transactional data (XBRL GL) will be also standardised in existing systems (e.g. e-invoices + accounting posting, e-reporting). Therefore, by using all these described connections and standards a real-life example of a real-time ecosystem where transactional data will move automatically between public and private entities will be possible. The Action's scope is to start exchanging invoice and reporting data through MyCompanyData. The services created within the Activity 4 can be extended and utilized to support the whole eProcurement process after the end of the Action and by the Action's partners own resources.

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This activity is composed of the following tasks:

Task 4.1. Development of MyCompanyData service

- Analysis - technical analysis and preparing specifications for MyCompanyData service.
- Development - developing MyCompanyData solution and creating services for end-point services (REST API and/or x-road services).

Task 4.2. Existing systems Integration with MyCompanyData

- Analysis - internal technical analysis and preparing specifications to define required tasks to integrate service providers (service providers who are included in Activity 4 - Fitek AS, Account Studio, BCS Itera, Columbus Eesti) systems to MyCompanyData solution (Tieto Estonia is directly only in the role of system developer of MyCompanyData in current project, not e-invoices operator);
- Development - service providers systems integration to MyCompanyData solution.
- Testing - testing will take place between project partners in Activity 4 to show the conversion of the data into EN or sending reporting documents for Statistics and Tax and Customs Board. Testing will be divided into three different paths:
    - Software providers will send data in XBRL GL file to MyCompanyData;
    - MyCompanyData will send the e-invoice data in XBRL GL file out to e-invoicing operator who will convert the document to EN and send out to receiver using PEPPOL or X-road;
    - MyCompanyData will send the reporting document data to Estonian Statistics and/or Tax and Customs Board using X-road.
- Deployment - standardised transactional data exchange (e-invoice service and e-reporting service) readiness automatically and in real-time.

Task 4.3 - technical documentation (incl. DLT) about MyCompanyData

- Detailed technical documentation and specifications about MyCompanyData service created within the project.
- Technical description and architectural view of MyCompanyData ecosystem in large scale - how MyCompanyData services used and provided by different services providers will form an ecosystem and interact inside with each-other using distributed ledger technology. To carry out distributed ledger technology one probable way is to use blockchain (or similar hash-based technology). The actual technical setup of usage of distributed ledger will be decided during the project technical analyses.

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