



Peppol Academy

An introduction to the Peppol network,
electronic business messaging and how to
improve transactional processes

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Session 1

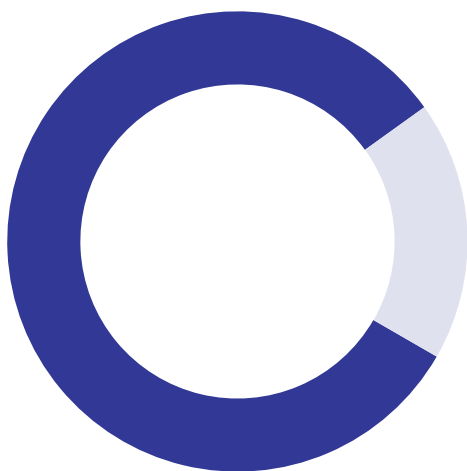
Learn about the basics of electronic business messaging.

Evolving business transactions

Invoicing has transformed remarkably from its traditional paper-based processes to the sophisticated digital networks we see today.

Historically, invoices were manually created, sent, and processed, which was not only time-consuming but also prone to errors. To this day, the vast majority are still paper-based. As businesses sought efficiency and accuracy, the shift towards electronic invoicing — e-invoicing — began.

Furthermore, this development has paved the way for increased digitization of the transactional landscape. A growing number of business messages exchanged between companies are now electronic. Orders, responses, and delivery messages are just a few examples. The impact is vast.



**560 billion
invoices globally**

*Billentis, 2024

☐ 125 billion e-invoices

The evolution of electronic business transactions



1st generation tech:
Distributing documents electronically with EDI

In the late 20th century, the advent of electronic data interchange (EDI) marked a significant leap in how businesses communicated financial transactions. The first EDI message was a shipping manifest sent in 1965 by the Holland-America Line using telex. FTP, The File Transfer Protocol, was introduced in 1975 and enabled easy file transfer via the Internet. In the 80s, large retail and car manufacturing companies started to induce their suppliers to use EDI. The adoption of electronic business messages has increased continuously ever since.



2nd generation tech:
VAN operators act as intermediaries

A Value-Added Network (VAN) is a hosted service that provides companies with capabilities to exchange business messages electronically, data interchange (EDI) documents. VANs act as intermediaries that handle the transmission of data in various formats across different communication protocols. They could offer additional services such as message encryption, transaction auditing, and management reporting, which enhance the data exchange process. Historically, VANs were pivotal in enabling EDI between businesses that may not have direct connections, thus facilitating smoother, more efficient B2B exchange. However, the costs associated with VAN services, and due for example to the lack of international standardization, and need for testing and data transformation between formats, was restrictive. It led to the emergence of more flexible, internet-based solution: the Peppol network.

About Peppol

The network is governed by OpenPeppol, a non-profit organization that maintains standards and ensures that they meet user needs and tech advancements.



3rd generation tech: Peppol network

Both direct EDI and VANs face challenges with flexibility and cost, particularly for small to medium-sized enterprises (SMEs). This has led to the rise of the more modern and open network Peppol, short for "Pan-European Public Procurement On-Line," which offers a standardized, open network that any organization can join. Peppol simplifies the exchange of electronic documents across different systems and geographies without the need for custom setups for each new partner, making it more accessible and reducing overall transaction costs.

Unlike traditional EDI and value-added networks (VANs) that typically require specific, often expensive setup for each trading connection, Peppol is an open network that allows entities across different countries to exchange electronic documents over its standardized network. It simplifies the process by providing standardized using a uniform set of rules and a common legal framework, making it easier, faster, and more cost-effective for organizations to manage their invoicing and other business communications.

Originating in the EU to simplify procurement, Peppol is expanding globally, now including countries like Australia, New Zealand, and Singapore.

For businesses engaged in public procurement, particularly in Europe, Peppol compliance is becoming essential. Upcoming legislation on real-time tax reporting will likely strengthen Peppol's role further.

The emergence of the Peppol network marks a significant evolution in the way businesses handle their invoicing and procurement processes, setting a new standard for digital transactions that is likely to shape the future of commerce. As we move forward, adopting networks like Peppol will be crucial for companies looking to stay competitive in an increasingly digital global market.

Transaction method cheat-sheet

The three main methods to exchange electronic business messages.



Direct connection with EDI

- Direct EDI, or point-to-point EDI, enables business document exchanges directly between two trading partners' IT systems without third-party involvement.
- Each partner must establish and maintain individual connections, which can be complex and costly for companies with multiple partners.
- Direct EDI offers quicker data exchanges as information travels directly from sender to receiver, bypassing third-party services.
- It requires mutual agreement on data formats and protocols, and each connection may require unique setup and maintenance, reducing flexibility.



Simplified EDI connection with VAN

- VANs serve as intermediaries for multiple businesses to exchange data, including EDI documents.
- Using a VAN, companies avoid maintaining multiple direct connections, simplifying communication and reducing costs.
- VANs enhance value by providing secure data transmission, translation, transaction tracking, archiving, and other services.
- The primary drawbacks of VANs are ongoing costs from fees and potential delays in data transmission due to intermediary processing.



The open business network Peppol

- Peppol standardizes formats for documents like invoices and purchase orders, improving interoperability and reducing complexity.
- Peppol provides the exchange infrastructure with one common participant catalog
- Peppol allows any organization to join, lowering entry barriers for smaller businesses and boosting competition.
- Peppol uses certified service providers known as access points to ensure secure, reliable document transmission. Just connect and get started.



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Session 2

Overview of general transactions methods.

Assess your current process and identify your next step.

Going from manual to digital

Embracing digital transformation in all financial processes begins with enhancing data quality.

Switching from manual processes to e-invoicing and e-orders can initially seem challenging, requiring significant IT expertise and financial resources. However, adopting Peppol can simplify this transition significantly.

This guide will help you evaluate your current accounts payable (AP) and accounts receivable (AR) processes, identify areas for improvement, and understand how Peppol can streamline your operations.



Transaction methods

What's your process for managing and exchanging transactions?

– Let's deepdive into the most common practices



1 Paper and PDF-based manual process

No digitization has been made, and it might have worked fine for you. With just a few suppliers and customers per month, adopting digital solutions hasn't been worth the investment besides handling PDFs.

However, the method comes with costs and risks.

Typical pain points include manual, monotonous process steps, manual errors, and insufficient analytics capabilities. The process is costly for both suppliers and buyers.

+ No maintenance or updates

- Very challenging to scale

- Increasingly non-regulatory

- High scaling costs

Assessment

- Do I have time to enter my invoices into my ERP manually?
- Does the process create errors?
- What is the regulatory landscape?

Improvement potential

Signing up for a web-based e-invoice management solution with Peppol network access is the easiest and least expensive way to use e-invoices and other electronic business messages.

Transaction methods



2 PDF-based with internal scanning

You are using optical character recognition (OCR) software to interpret supplier invoice information, so you don't need to enter it into your accounting software or workflow manually. A decade ago, OCR was a state-of-the-art technology that was more convenient than handling paper invoices. It is now regarded as a legacy tech with significant downsides compared to modern alternatives.

The main challenge is that OCR can't perfectly interpret the information from PDFs. Image files like PDFs lack the structured normalized data that e-invoices and other electronic business messages contain. Missing or misinterpreted information is a key source of errors in the financial process, which requires ongoing manual attention for quality assurance. Often, only header data is captured, and scanned invoices must be transferred to the ERP.

- + Makes paper and PDF-based processes more efficient
- Time consuming
- High software costs
- Continuous quality risks

Assessment

- Do I have a sufficient process to monitor and ensure quality?
- Is my process scalable?
- What is the cost compared to electronic business messages?

Improvement potential

E-invoices and other electronic business messages are the natural progression from analog formats.

Transaction methods



3 PDF-based with scanning service provider

You rely on PDFs but use a service provider to scan paper formats and do the OCR. It makes internal processes more efficient and automatically scales according to your transaction volumes.

Regardless of whether the work is done outsourced or in-house, OCR has the same technology issues. PDFs do not provide the structured, normalized data found in e-invoices and other electronic business messages. This regularly leads to errors due to missing or incorrectly interpreted information, necessitating continuous manual oversight to ensure data quality. Furthermore, the dependence on an external part for manual work in critical processes exposes you to additional risks like missing invoices and late deliveries. High costs per transaction and support make, in general, these services expensive.

+ Scalable solution

- High costs
- Outdated technology
- Continuous quality risks
- Continuous service delivery risks

Assessment

Does the service provider have a sufficient process to monitor and ensure quality?

Do I have a sufficient process to monitor and ensure quality?

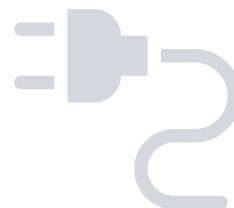
Is my process scalable?

What is the cost compared to electronic business messages?

Improvement potential

E-invoices and other electronic business messages are the natural progression from analog formats.

Transaction methods



4 Point-to-point EDI managed inhouse

Electronic Data Interchange (EDI) is the collective term for establishing and maintaining unique connections between two business partners. Once set up as point-to-point, the connection is hardcoded and robust. The practice uses fully digital formats, lossless transmission, and machine-readable normalized data.

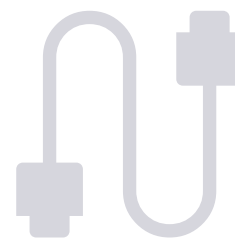
Connecting new suppliers is a substantial IT undertaking. Custom conversion and mapping between data formats efforts alone demand 40-80 hours of work. Any modifications to the ERP system on either side often necessitate a complete redo. This setup also requires continuous maintenance, demanding a high level of internal IT expertise.

- + Suitable for small networks with very high transaction volumes
- High implementation cost
- Extensive IT expertise needed
- Vulnerable to changes
- No scalability

Improvement potential

The Peppol network enables the next-generation technology for EDI. Its open participant directory and standardized Peppol BIS formats radically simplify connections and maintenance.

Transaction methods



5 Point-to-point EDI managed by service provider

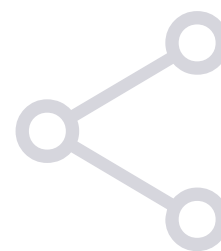
Using a solution provider for point-to-point EDI connections is convenient compared to setting up and maintaining connections with internal IT resources. The service provider takes care of all technical aspects, integrations, and file transformations which makes handling easy, but the costs for implementation and support, as well as fixed and volume-based transaction fees, are often considerable.

- + Suitable for small networks with very high transaction volumes
- High costs
- 3rd party dependency

Improvement potential

The Peppol network enables a competitive and modern alternative to solutions from EDI service providers. The open participant directory and standardized formats offers an infrastructure for businesses of all sizes. The ease of use makes business messaging via Peppol accessible for smaller companies, which support the digitization throughout the supply chain.

Transaction methods



6 VAN service providers

VAN service providers, also called operators, provides a more convenient solution compared to business messaging using point-to-point EDI by enabling access to of the Value-Added Network (VAN). By using a four-corner model, VAN offers a connection to the customer's ERP, and/or a complementary web-based portal, and maintain connections and interoperability with other VAN operators. Incoming business messages are transformed to the customer's inhouse format, the so-called canonical format. The VAN operator makes the necessary transformations for outgoing messages.

VAN operators act as gatekeepers to a semi-open network, which contribute to high transaction costs. One message includes fees for the sending party, the receiving party, and for transformations in both ends.

Traceability is also a limiting factor, as VAN operators only can provide information about processed messages. Support is needed every time a user wants to investigate if a sent business message has been received.

- + Simplified EDI
- + Greater reach
- High cost
- Gatekeeper position
- Lack of traceability

Improvement potential

The Peppol network enables a competitive and modern alternative to VAN. The open participant directory and standardized formats offers an infrastructure for businesses of all sizes. The ease of use makes business messaging via Peppol accessible for smaller companies, which support the digitization throughout the supply chain.

Transaction methods



7 Peppol network via service providers

Peppol is a game changer in electronic business messaging. Instead of building connections point-to-point or utilizing VAN, companies can connect directly using a common participant directory, exchange infrastructure, and standardized formats for sending and receiving most types of business messages: e-invoices, e-orders, e-catalogs, punchout, responses, and much more.

It requires one setup with a so-called access point to reach the entire network. Peppol is well-established in Europe, and increasingly countries in Asia and America are getting connected.

Standardization facilitates simplified use and reduces costs throughout the supply chain. Although it is a new technology and lesser known than the alternatives, most companies using electronic business messaging today already have access through their VAN operator or EDI service provider.

- + Most cost-efficient method
- + International compliance
- + Highly scalable
- + Transparent participant directory
- + Continuous development
- New and fairly unknown
- Incomplete support for complex messages

What is data transformation?

Transformation is often necessary to make business messages such as e-invoices compatible between ERPs and other systems. The process involves conversion and mapping the original file.

- Conversion refers to the process of changing the format of data from its original form into another. For example, converting an XML-based invoice to a JSON format.
- Mapping involves aligning data fields from the source format to the corresponding fields in the target format. For example, changing field names or structure.

Transaction process cheat-sheet

1	Paper and PDF-based manual process	Pros: No maintenance or updates required. Cons: Difficult to scale, non-compliant with modern regulations, high scaling costs. Key considerations: Time-consuming manual entry, prone to errors, limited analytical capabilities.
2	PDF-based with internal scanning (OCR)	Pros: Improves efficiency over manual processes. Cons: Time-consuming, high software costs, continuous quality risks. Key considerations: Inaccuracy in data capture, requires significant manual quality assurance.
3	PDF-based with scanning service provider	Pros: Scalable solution. Cons: High costs, reliance on outdated technology, continuous service and quality risks. Key considerations: Dependency on external parties, ongoing manual oversight needed.
4	Point-to-point EDI managed inhouse	Pros: Suitable for small networks with high transaction volumes. Cons: High implementation and maintenance costs, requires extensive IT expertise, non-scalable. Key considerations: Significant IT resources required, vulnerable to any changes in system or partners.
5	Point-to-point EDI managed by service provider	Pros: Handles technical setup and maintenance. Cons: High costs, dependency on third-party service providers. Key considerations: May be restrictive and expensive for businesses with fluctuating transaction volumes.
6	VAN service providers	Pros: Simplified EDI, greater reach within the network. Cons: High costs, acts as gatekeeper, limited traceability. Key considerations: Necessary for businesses needing broad network access but costly and less transparent.
7	Peppol network via service providers	Pros: Cost-efficient, compliant internationally, highly scalable, transparent participant directory. Cons: Relatively new and unknown, may not support complex messages fully. Key considerations: Offers a standardized and simplified system, but lesser known compared to traditional methods.



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Session 3

Learn about the Peppol network, its infrastructure, message types and what makes it different.

Business messaging networks: the basics

For decades, operator networks have been the dominant infrastructure for the electronic exchange of e-invoices and other business documents between businesses and organizations.

These networks connect various service providers, known as e-invoice operators or Value-Added Network (VAN) services, facilitating access to business messaging. We call it the **closed network setup**.



The closed network setup

The traditional closed network setup has been somewhat problematic, creating barriers to faster adoption of e-invoicing. Typically, companies have had to navigate through these steps:

1. Both the sender and receiver of the business message must have separate agreements with a VAN operator.
2. The sender's and receiver's operators must have an interoperability agreement to process their e-invoices.
3. The operators must set up, test, and maintain technical configurations to enable e-invoices and other business messages to be processed.

4. Additional format conversion is often required to allow further processing of the e-invoice within the company's ERP.

This gatekeeping by traditional operators has maintained a “closed network” structure, built barriers to innovation, and kept e-invoicing costs high for users. However, this practice is changing.



How the Peppol network improves business transactions

The emerging open network Peppol enables companies and organizations to quickly exchange e-invoices and other business messages using their Peppol Participant Identifier (Peppol ID). This process is as simple as sending an email.

Peppol simplifies e-invoice and business message management for companies, organizations, and the public sector. It stands for Pan European Public Procurement Online and provides both an infrastructure for message exchange and standardized formats for procurement processes.

Background

Peppol's message formats, called BIS, and open infrastructure promote digitalization in B2B commerce. Following an EU e-invoicing directive, many European

public entities now require e-invoices for new contracts.

Managed by OpenPeppol, the network is expanding globally, with countries like Australia, New Zealand, and Singapore joining. Messages are exchanged via Peppol service providers, using the recipient's Peppol ID to ensure delivery. The e-invoice format is called Peppol BIS Billing.

The building blocks of Peppol

- **Standardized message formats (BIS)** for various parts of the procurement process, such as e-invoices, e-orders, e-catalogs, and response messages.
- **A common digital infrastructure** for sending and receiving messages between companies via their business and financial systems or specialized apps.
- **A central registry** that simplifies the identification of and contact with business partners connected to Peppol, showing how e-commerce can be conducted with them and what messages they can handle.
- **Common guidelines for cooperation** between business partners and their service providers, including rules for information and service levels.
- **OpenPeppol**, a European organization with a local presence responsible for the development, maintenance, and support of Peppol-related matters.

Access and onboarding

Getting access to Peppol

To exchange e-invoices within the Peppol network, business partners need to sign up at a certified Peppol access point, also called a Peppol service provider, often an e-invoicing solution or an operator of business messages.

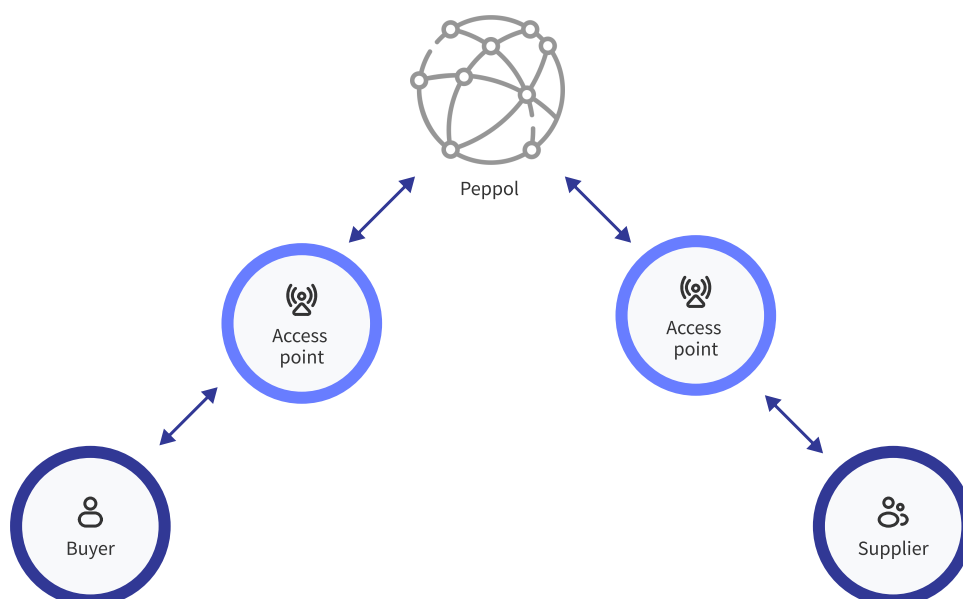
E-invoices and other business messages can be easily created and exchanged by integrating your ERP with an access point or using an online solution from a Peppol service provider.

Unlike VAN, agreements or custom setups between access points are not needed; business messages can be exchanged across the network much more easily and cost-efficiently.

The next step is to obtain a dedicated Peppol ID, required to receive Peppol e-invoices and other e-documents within the network. However, sending e-invoices within the Peppol network does not require a Peppol ID.

Depending on your setup, the operator may provide tools for managing messages, commonly through a web-based interface or integration into your ERP. Fees for registering and exchanging e-invoices may vary, but some providers, like Qvalia, offer free sign-up and transactions.

Free tools for small businesses are crucial for digitizing a greater part of the supply chain and support the digitization of all parts.





Peppol ID: Your unique address

A Peppol ID consists of two parts: an initial four-digit code specifying the identifier type and a unique identifier number for a particular company or organization, divided by a colon. For example, the code for a Swedish organization number is “0007”, making Qvalia’s Peppol ID “0007:5567321707”.

Exchanges within Peppol can also use GLN numbers to direct e-invoices and other documents to the right recipient. For companies using GLN numbers, the code “0088” is followed by 13 digits, e.g., “0088:1234567891234”. These codes differ between countries.

With Peppol, there is no need for local network operators with Peppol Access Point status to make specific setups in advance. Most e-invoice operators today are access points, minimizing the risk of transaction issues.

Benefits of Peppol

Interoperability: Seamless data exchange across different systems and platforms.

Efficiency: Simplified technical setup and no need for separate operator agreements.

Cost-effectiveness: Reduced maintenance costs and free transactions with some providers.

Compliance: Strict controls and validations ensure technical accuracy and compliance with EU invoicing rules.

Message types in Peppol

Peppol BIS Billing

The e-invoice format in Peppol. The message must include buyer reference or purchase order reference, and invoice lines can contain products or services, quantity, net amount, buyer accounting reference, time period, order reference, etc.

Peppol BIS Billing Credit Note

The credit note/credit invoice message in Peppol. It is a Peppol BIS Billing 3 profile using negative amounts on a document level.

Peppol BIS Invoice Response

BIS Invoice Response enables communication throughout the invoicing process, for example, informing about the status of an invoice.

Peppol BIS Order Only

BIS Order Only is a profile for a simplified e-order message process. It can include information, for example, on products and services, accounting information, values and amounts, and VAT. In addition, the message supports inventory information when orders are based on catalogs.

Peppol BIS Ordering

BIS Ordering is a profile for an extended e-order message process. It includes all capabilities of BIS Order Only but allows, for example, sellers to accept or reject orders or provide changes.

Peppol BIS Advanced Ordering

BIS Advanced Ordering is the most advanced profile for sending e-order messages in Peppol, enabling two-way communication between customer and supplier.

Peppol BIS Order Agreement

BIS Order Agreement enables agreements between suppliers and customers. Suppliers can provide documentation about a purchase or accumulate multiple purchases within a framework agreement. ated to business events.2

Peppol BIS Catalogue With/Without Response

BIS Catalogue Without Response is a product and service catalog message. Suppliers can provide customers with pricing and product-related information such as descriptions, associated frameworks, packaging, and tax classes.

Peppol BIS Despatch Advice

BIS Despatch Advice is a notification message in the transaction fulfillment process. The message enables information and activities for transport, ordering, and receiving goods. Scenarios with various endpoints and outstanding goods are supported.

Peppol BIS Punch Out

Punch Out is a dynamic shopping cart for B2B e-commerce transactions. Customers can add products and services to a cart from online catalogs, make configurations, and send an order to the supplier.

Peppol BIS Order Agreement

BIS Order Agreement enables agreements between suppliers and customers. Suppliers can provide documentation about a purchase or accumulate multiple purchases within a framework agreement.

Peppol BIS Message Level Response

BIS Message Level Response facilitates communication during a transaction. Parties can acknowledge process steps and inform about deviations or errors. The main message types are transport acknowledgments, responses related to the information of other messages, and responses related to business events.



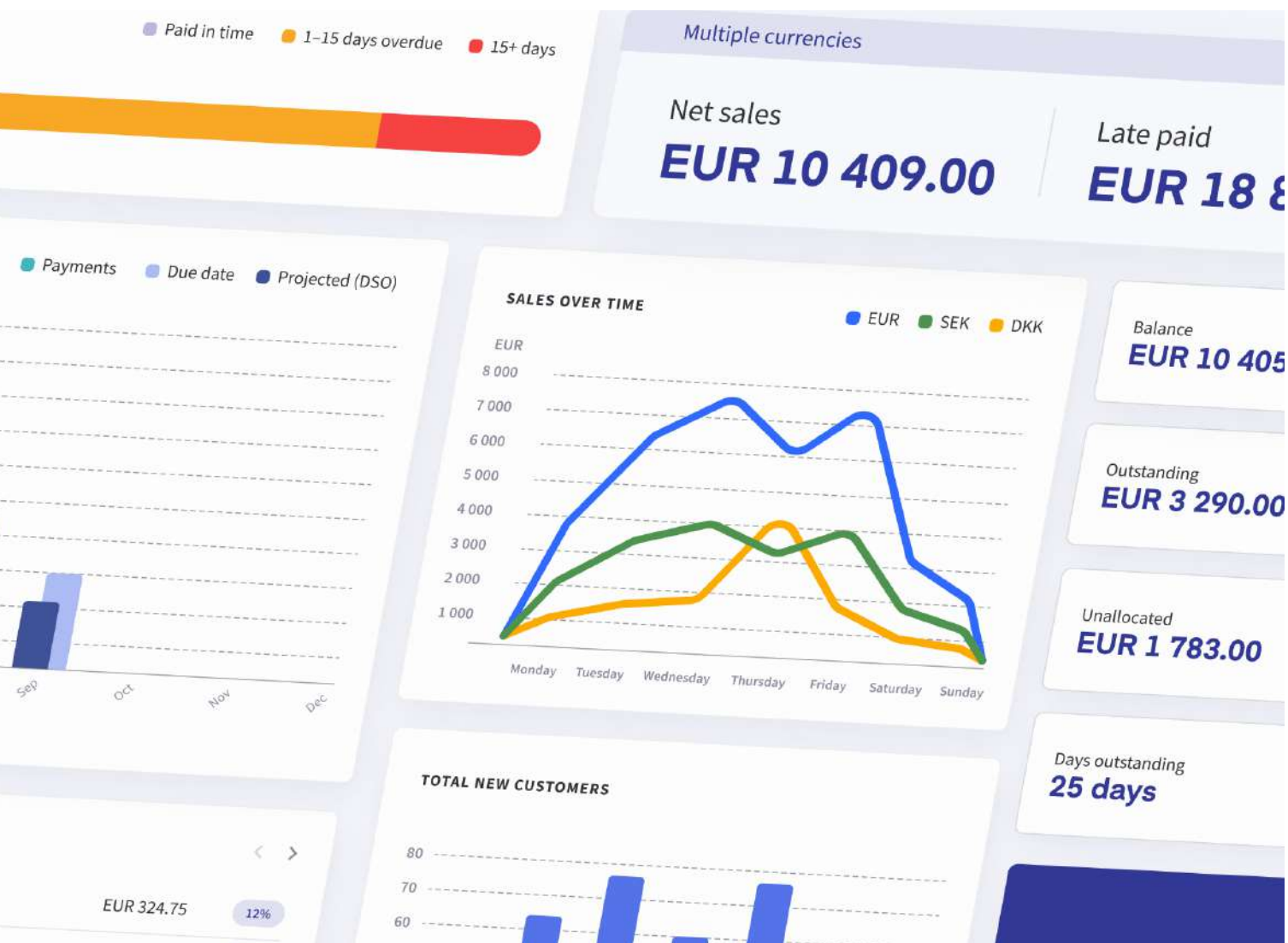
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Session 4

Learn about the potential with electronic business messaging from **a how to make use of structured financial data.**

Business transactions and data management

Improving the quality of your transactional data is key to successfully navigating digital transformation in business messaging. The way you structure your data, the formats you choose, and the type of content you exchange with business partners don't just affect what you can do now—they play a crucial role in making sure your financial processes are ready for the future.



Success factors for efficient data management

Effective data management in finance relies on two critical factors: data quality and data structure.

Data quality ensures the accuracy, completeness, and reliability of financial data, enabling informed decision-making and regulatory compliance. Meanwhile, a robust data structure organizes and integrates data in a way that allows for efficient automated processes,

analysis, and reporting. Together, these factors form the foundation of a resilient financial data management strategy, driving operational efficiency and strategic insight.

Benefits of structured data



Efficiency and automation

Structured and high-quality data allows for seamless automation of transactional processes, reducing manual intervention and errors.



Operational Consistency

- Maintaining high data quality and structure ensures consistent operations across various departments and systems, leading to smoother workflows and reduced operational costs.



Improved communication

Structured data in standardized formats, such as those supported by Peppol, enhances communication and data exchange between business partners.



Enhanced analytics

Quality and structured data facilitate advanced data analytics, providing deeper insights and supporting strategic decision-making.



Regulatory Compliance

Structured and high-quality data helps organizations meet regulatory requirements by ensuring accurate and timely reporting.



Data quality

Data quality is crucial for accurate decision-making, efficient operations, and regulatory compliance. High-quality data is determined by several attributes.

Key aspects of data quality

Accuracy

Data is correct and free from errors, ensuring financial transactions are recorded correctly, reducing discrepancies.

Completeness

All necessary data elements are present, preventing operational inefficiencies and misinformed decisions.

Consistency

Data is uniform across systems, reducing conflicts and misunderstandings.

Timeliness

Data is up-to-date and available when needed, critical for informed decisions and timely responses.

Validity

Data conforms to predefined formats and standards, reducing processing errors.

Reliability

Data is consistently accurate over time, building trust and supporting long-term decision-making.

Relevance

Data is useful for its intended purpose, ensuring decisions are based on appropriate information.

Accessibility

Data is readily available to authorized users, enabling efficient use and preventing delays.



Data structure

Data structure refers to how data is organized, formatted, and stored in transactional documents; business messages such as e-invoices and e-orders, and systems.

Key aspects of data structure

Standardization

Consistent formats and standards ensure uniformity and compatibility across systems.

Normalization

Minimizes redundancy, improving data integrity and reducing storage needs.

Data Models

Blueprints defining data structure, supporting efficient retrieval and management.

Hierarchy and Taxonomy

Organized data helps in navigating and analyzing large datasets.

Data Formats

Formats like XML, JSON, or CSV ensure compatibility and facilitate data interchange.

Indexing

Speeds up data retrieval, improving search and processing efficiency.

Metadata

Provides context, enhancing data usability and discoverability.

Action areas for increased data quality

The caliber of the content in your transactions not only sets the bar for how you can streamline operations and reduce errors but also has the potential to fuel the decision-making process.

Eliminating analog formats, reducing the need for transformations, and increasing the utilization of the Peppol network are three important actions for enhancing data quality. These improve data accuracy and reliability and drive greater efficiency and operational excellence.

1

Eliminating analog formats

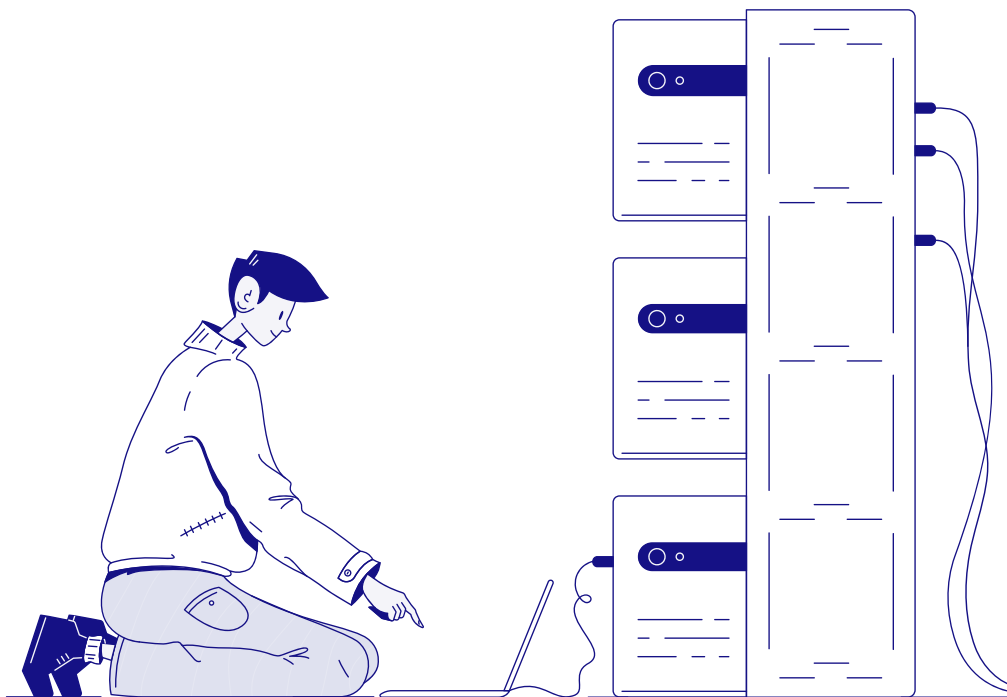
The first step towards improving data quality is eliminating analog formats such as paper and PDF invoices, especially supplier invoices. These formats are prone to errors, inconsistencies, and inefficiencies due to manual data entry and interpretation.

By transitioning to fully digital formats, businesses can:

Reduce errors: Digital data entry minimizes the risk of human error, ensuring greater accuracy.

Enhance accessibility: Digital formats make data easily searchable and accessible for automated processing.

Improve efficiency: Eliminating the need for manual handling speeds up transaction processing and reduces labor costs.



2

Reducing the need for transformations

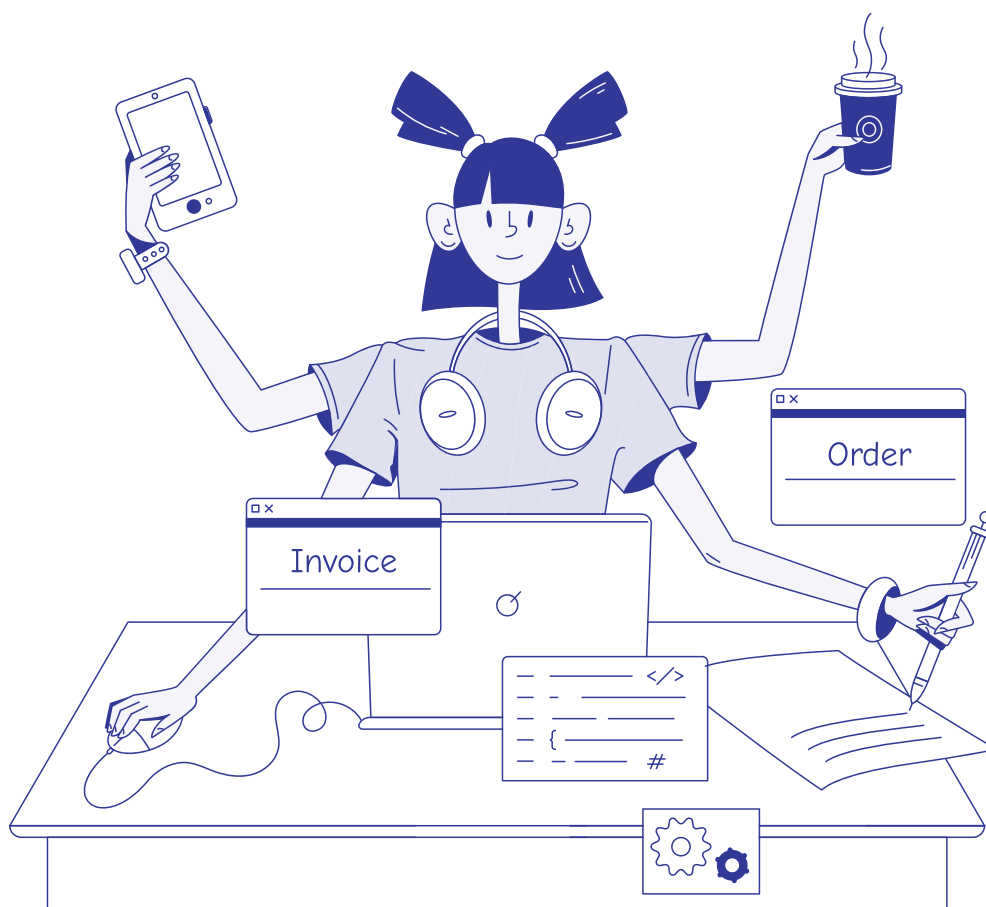
Transformations involve converting data from one format or structure to another, which can introduce errors and inconsistencies.

By reducing the need for such transformations, businesses can:

Preserve data integrity: Minimizing transformations helps maintain the original accuracy and reliability of data.

Simplify processes: Streamlining data formats reduces complexity in data management and processing workflows.

Increase efficiency: Direct data exchange without multiple conversions accelerates transaction times and improves overall process efficiency.



3

Increasing the utilization of the Peppol network

The Peppol network provides a standardized framework for electronic data interchange (EDI), ensuring that data is transmitted in consistent, high-quality formats. By increasing the utilization of Peppol, businesses can:

Enhance interoperability: Peppol's standardized formats enable seamless data exchange between different systems and organizations. Peppol is easier to access also for smaller supplier, contributing to digitization across the supply chain and customer-facing transactions.

Boost automation: The structured and normalized data within Peppol facilitates automation, reducing manual intervention and associated errors.

Support compliance: Peppol standards align with regulatory requirements, helping businesses maintain compliance with ease.

Data management cheat sheet

What	How	Why
Standardization	Data follows a consistent format and set of standards.	Standardized data ensures uniformity and compatibility across different systems and platforms, facilitating seamless data exchange and integration.
Normalization	Data is organized in a way that minimizes redundancy and dependency.	Normalized data reduces storage requirements and improves data integrity by eliminating duplicate data entries.
Data models	The schema or blueprint that defines the structure of the data, including entities, relationships, and constraints.	A well-designed data model supports efficient data retrieval and manipulation, enhancing overall data management.
Hierarchy and taxonomy	Data is categorized and organized in a hierarchical structure.	Hierarchical organization helps in managing and navigating large datasets, making it easier to locate and analyze specific data points.
Data formats	The specific formats in which data is stored, such as XML, JSON, or CSV.	Choosing the right data format ensures compatibility with various software applications and facilitates data interchange.
Indexing	Creating indexes to speed up data retrieval operations.	Indexed data structures improve the performance of search queries and data processing tasks, making data access more efficient.
Metadata	Data that describes other data, providing context and additional information about the data.	Metadata enhances data usability and discoverability by offering insights into the data's origin, structure, and usage.



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Session 5

The buyer's guide: Learn more about the implementation process.

Getting started with Peppol

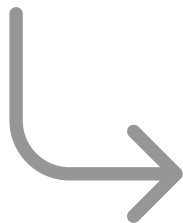
The implementation of Peppol varies depending on the complexity of each specific company. These steps provide a common guidance for how to get started.

1

Define your ideal process

Start with the end in mind

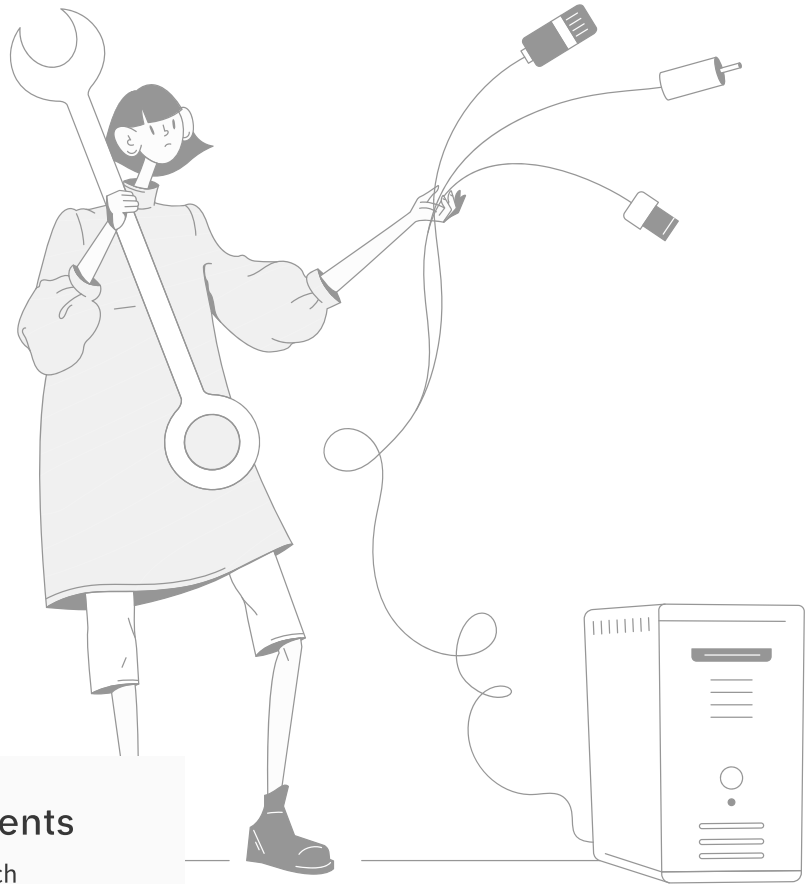
- Determine how data should enter and exit your company's systems
- Identify automation opportunities within your processes; from validation to workflows and analytics
- Envision the ideal reports and analysis capabilities for decision-makers

**2**

Evaluation

Get into the specifics of your processes

- Assess which transaction streams need to be digitized, whether on the supplier or customer side, or both
- Identify relevant internal processes, manual and digital. Assess current state and map needs
- Decide whether you will receive e-orders, send e-orders, or both
- Choose the appropriate order message types
- Involve internal stakeholders

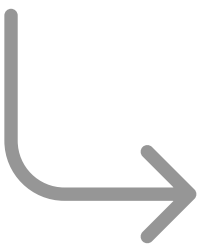


3

Technical requirements

Get into the specifics of your tech

- Specify the data formats compatible with your business systems. Consider adopting Peppol formats to eliminate conversion needs
- Decide on the integration method, such as API or SFTP
- Plan for any necessary data conversions

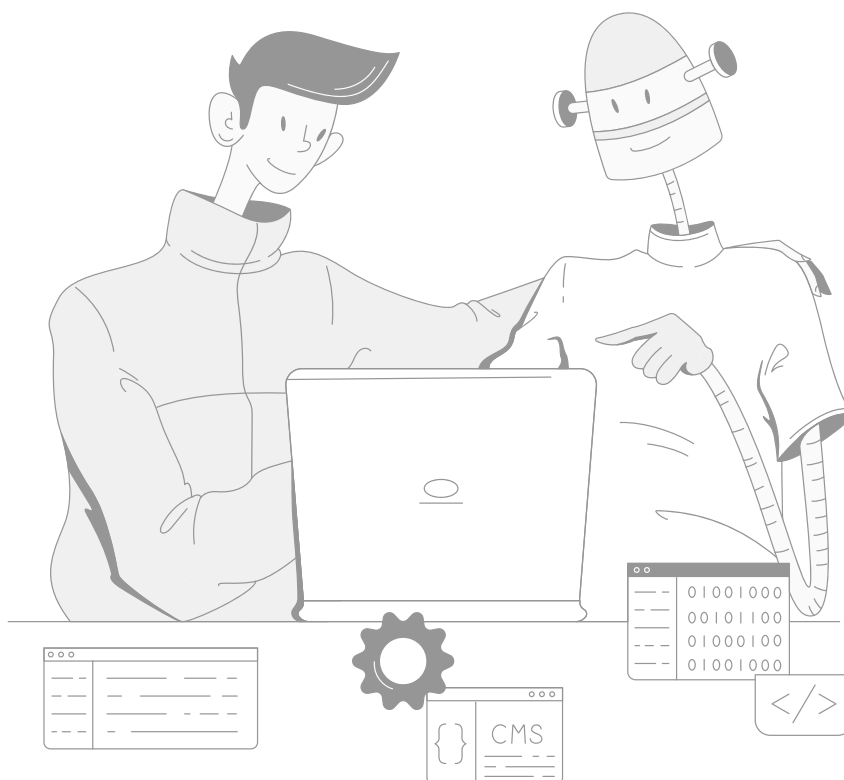


4

Select a Peppol Access Point

Choose a service provider with care

- Verify if the service provider supports the required message types
- Inquire about error-handling procedures
- Review integration capabilities, automation options, and data management, including structure, database management, logging, audit trails, etc
- Evaluate the support and user documentation
- Assess security measures and business model, including pricing structures
- Don't forget to request a product demo, even if you won't use the graphical user interface. It provides insights into quality and technological sophistication

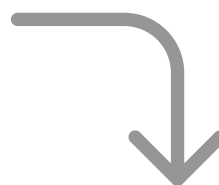


5

Roadmap implementation

Plan the integration

- Plan the implementation of transaction flows, including steps for both inbound and outbound transactions and communication with business partners
- Address master data management, including customer and supplier registries and potential data migration



6

Onboarding

Finalize integration and onboard users

- Register for Peppol IDs
- Integrate and implement the system
- Test streams
- Train and onboard internal users
- Assign roles and permissions