

# Executive summary

## Introduction and background

The Nordic Smart Government & Business (NSG&B) programme 4.0 embodies a vision set by the Nordic Council of Ministers to make the Nordic region the world's most integrated and sustainable region by 2030.

The Nordic countries are some of the most digitalised countries in the world, however, if digitalisation efforts are not coordinated across countries, national digitalisation efforts can end up creating barriers for cross-border trade between the 2 million small- and medium sized Nordic businesses. For the Nordic region to be integrated and sustainable there is a need to coordinate and develop digital infrastructure and solutions that are interoperable and cost-effective to use across businesses, systems and countries.

On this background, the NSG&B programme was started in 2016 by the business registry authorities of the Nordic countries with an aim to make real time business data accessible and usable for innovation and growth across the Nordic region in an automatic consent-based and secure manner. Since then in total of 21 government agencies from across the Nordic countries have been involved in the programme, all dedicated to achieving this shared objective. Collaboration with the private sector has been a cornerstone of the initiative, featuring numerous pilot projects, strategic meetings and dialogue days aimed at strengthening public-private partnerships. From 2021-2024 the programme entered its implementation phase, and this report will cover this period of the cooperation.

## Overall results

The field of real time economy - automatic business data and reporting – is regulated nationally as well as by the EU. All five Nordic countries have ambitious digital policies. There is cooperation in the EU, in the Nordic Council of Ministers, and government agencies in the field have set up cooperation forums with stakeholders.

However, there is no regulatory mandate connected to the NSG&B programme as such. Instead, the NSG&B programme has focused on identifying those areas, where national policies align and can benefit from cooperation, including areas where new EU regulation is set to be implemented nationally. In these selected areas, the NSG&B programme has been a cooperation “laboratory” where national experts have worked closely together in working groups to find new solutions on how to best implement solutions in the field.

The NSG&B programme has applied a decentralised model, where cooperation is focused around these common areas - while leaving the parts of national implementation up to the countries themselves to set their specific standards, regulations and pace of implementation accordingly. This has resulted in a pragmatic working model where cooperation has been able to focus on the areas that hold the most *Nordic added value* and leaving others for national implementation. This has also meant that the NSG&B work has been adjusted to the policy development in the individual countries, as well as in the EU. In areas where the EU has put forward new efforts such as e.g. the EU Digital Identity (eWallet) and the European Commission's proposal VAT in the Digital Age – ViDA, the NSG&B work has thus shifted into contributing to the EU efforts in these areas.

In the cooperation, the *interoperability* of the different national standards and methods has been key. This means that the countries do not need to have the exact same standards or work with the same regulations, as long as the different systems can work together and are compatible in these cross-border situations.

A focus in the NSG&B programme has been on the cross-border use cases of real time economy - automatic business data and reporting. Focusing on cross-border situations has been a valuable method for finding new solutions and contributing to the national implementations of upcoming EU regulations, that also very much centre around digitalisation of crossborder business data and reporting within the union. The NSG&B programme has thus led to a range of contributions to the EU efforts in areas such as cross-border VAT (The European Commission's proposal VAT in the Digital Age – ViDA), high quality data in the eWallet and automatic collection of green data (the EU directive, Corporate Sustainability Reporting Directive, CSRD).

Thus, the guiding principles for the working method of the NSG&B programme have been:

- Focus on addressing cross-border use cases of trade transactions and reporting to authorities
- Focus on interoperability across countries in areas where there is a common understanding of rules and terms
- Solutions that are digital, seamless, automatic, secure & consent-based

Based on addressing some of the most important cross-border situations facing the Nordic SMEs, the NSG&B national experts together with private partners in the working groups have made a range of new possibilities available for the market as well as EU initiatives to implement further.

Some of the main results of the programme for Nordic SMEs are in the following three areas:

- Possibilities for further automation of cross-border trade and reporting
- Possibilities for cost-effective access to structured data cross-border
- Possibilities for access to national digital services - cross-border digital identification

The results under each area are summarised below.

### Possibilities for further automation of cross-border trade and reporting

- **Possible to automate sales & purchases with companies from other Nordic countries across different ERP-systems:** Earlier it was not possible to send eInvoices and other eDocuments across borders in the Nordic region. Instead companies had the option of exchanging pdf-invoices or building their own electronic processes internally or set up tailor made systems with trading partners. In 2024, NSG&B has now demonstrated a possible setup for automating these processes cross-border in the Nordic countries and across different service providers and simulating ERP-systems. The national infrastructures in all five countries now can be set up to handle this feature using the Peppol Network. If implemented, this can enable an automation of electronic documents involved in trade between Nordic companies (the so-called eDocuments). If implemented, this means that Nordic companies can have an automated bookkeeping process for sales and purchases managed directly from their existing bookkeeping systems - when they trade with other Nordic companies. This has the potential to save time & money by cutting out a range of manual administrative tasks. However, while the NSG&B has done the groundwork demonstrating the pilots in this field, the implementation of these features is still needed to achieve the potential.
- **Test ideas for automatic collection and exchange of green data in ERP-systems and other services - working across systems and across countries.** With the increasing amount of reporting requirements due to the EU Corporate Sustainability Reporting Directive (CSRD), companies need systems for automating their climate data. The NSG&B has started to test a method for the national infrastructures of eDocuments to include the climate data of products and services using the Peppol format for all Nordic countries for selected cross-border use cases regarding the climate footprint of business travel in the Nordic countries. If implemented, this means

that companies can have the possibility to automate their climate data collection directly from their existing ERP-systems - that notably also can work across ERP-systems and countries - due to the interoperability of this simulated solution.

- **A method for automation of cross-border VAT reporting (ViDA).** The 2022 ViDA proposal from the European Commission comes with a mandate to further automate VAT-reporting on cross-border trade within the EU, and the NSG&B has successfully conducted a pilot on how to generate automated reporting in this field. If implemented, this can make it possible for companies to report cross-border VAT automatically and directly from their ERP-systems or service providers. Furthermore, the NSG&B has provided suggestions for how to support the further digitalisation of cross-border VAT processes by ensuring correct automated assigned VAT Category Codes and easing the VAT refund application for purchases in another country.

### Possibilities for cost-effective access to structured data cross-border

- **Possible for easier “translation” of companies’ financial income statements across the Nordic region that can contribute to more cost-effective benchmarking analysis of businesses: A Nordic vocabulary.** In 2021 and still today, companies can use different terms for financial income statements in their annual reports, because there are different types of formats and terms for annual reports in the different countries. Until now, there has been no coherent guideline from authorities on how to translate the various financial income statements between these different methods. There can be substantial work involved with analysing and benchmarking the financial performance of individual companies, that now to some extent can be mitigated by this new guideline in the field. In 2024, the NSG&B has finalised a *Nordic Vocabulary* – a common Nordic vocabulary for financial information, that for instance can be used to improve and ease the process of examining companies eligibility for loans and investments across the Nordic region.
- **Possible for easier and more cost-effective access to public registry data of Nordic companies directly from inside ERP-systems and other services.** In 2021 and still today, there is data available from the national business registries in the EU, however, the current common registry for businesses in the EU (BRIS) is only intended for individual look-ups, has lower quality data and is not scalable. This is due to the fact that national business registries have different standards and formats, which increase costs for developers to build APIs and integrations connecting the data from each national registry to ERP-systems and other services. On the basis of the NSG&B Nordic Vocabulary of financial statements, the NSG&B has developed a common Nordic API that includes data from Nordic business registries into one API (instead of e.g. five different APIs). If implemented, this can lower costs of third party developers and ERP-systems and can provide basic company data directly into ERP-systems for Nordic companies that are interoperable and structured in the same way. This data can for instance come into use, when one company has to write an invoice to another company in which the company address and other basic information is automatically filled out by the ERP-system instead of manually typing it into the invoice. This common Nordic API can be expanded to include more areas and more countries. In principle, this semantic model and the API could be used as a MVP on a whole-of-EU API or other types of solutions that includes the national business registries from all of the EU-countries into one. If implemented, this could function as a “BRIS” for machine-readable structured, high quality data or as data in an eWallet.

### Possibilities for better access to national digital services - cross-border digital identification

- **Exploring possibilities for a cross-border digital identification - eWallet:** In 2021 and still today, it is not necessarily possible to access the different digital government services for businesses and citizens, if you are not a resident having a digital ID of the country in question. NSG&B has tested a

digital solution enabling a citizen in one Nordic country to establish a company in another country in a remote, digital and secure manner. There was developed a **pilot for mutual ID recognition**, where two countries accepted each other's national IDs for logging into digital services. Alongside this work, the European Commission put forth plans of an eWallet for citizens and businesses in the European Union coming into force in 2024. The NSG&B work in this field has been carried into the EU Commission so-called Large Scale Pilot projects, which are building prototypes and testing everyday use cases of this new EU Digital Identity Wallet.

- **Contributing with structured data to the EU Digital Identity Wallet:** An important part of a new EU Digital Identity Wallet would be that companies have an **EU Company Certificate**, containing a basic set of information about companies, available free of charge in all EU languages. This requires that basic company information is available in interoperable structured formats cross-border. On the basis of the NSG&B common semantic model for basic company information, The NSG&B has contributed directly to the EU Commission's Large Scale Pilot - the European Consortium Wallet - showing how basic company information from the national registries in the Nordic countries can be integrated into one structured format, the common Nordic API, where this information can be exchanged via a back-end API into the eWallet.

Common for the NSG&B results of all three areas is that they are all on the level of core framework conditions for further digitalisation in the market. The cooperation has been driven by the government agencies for business, the agencies for business registries, and tax agencies and focused on the core national digital infrastructure that constitute the pillars of the wider ecosystem. The NSG&B has thus made the groundwork for new possibilities for cross-border interoperable solutions to be built and taken into use by market actors - ERP-systems, developers and the companies themselves. Moreover, these crossborder possibilities on a Nordic level have been taken further as models for whole-of-EU solutions such as the upcoming eWallet for the EU, as well as models for the cross-border VAT area (ViDA-proposal), and the green data area (CSRD).

These above selection of results from the programme, notably, could not have been done by market actors alone, or by individual countries alone. These are examples of the added value of having all Nordic government agencies to work together with market actors to deliver a setup that enables cross-border and cross-system digitization contributing to lowering overall administration and transaction costs of the Nordic SMEs and Nordic markets as well the EU Single Market.

## Achievements on the NSG&B Roadmap Milestones

The NSG&B programme has made efforts towards realising the vision of an integrated and digitalised Nordic region, achieving six of the eight outlined milestones from 2021. The progress was facilitated by initiatives across four key solution areas — Digital Business Documents and Product Information, Open Accounting and Simplified Reporting, Born Digital, and Reliability and Data Quality. Contributions from national and European initiatives, along with active involvement from external market actors, have been important in advancing these efforts.

Here is an overview of how the milestones have been met and the challenges encountered:

1. **Establishment of a public-private advisory board:** The NSG&B Nordic Advisory Board as well as national advisory boards have been set up and contributing in setting the overall strategic direction of the programme.
2. **Adoption rate of digital business systems among SMEs:** According to the national surveys conducted, the use of digital business systems among businesses is: ~79% in Sweden, ~80% in Finland and ~83% in Iceland. In Norway, it is mandatory for all businesses to do their tax declaration using a digital business system, and in Denmark, a certified digital bookkeeping system has been made

mandatory for all businesses with more than DKK 300,000 in sales for two consecutive years from 2025 onwards.

3. **Enabling data mobility between systems:** This milestone was achieved mainly through the solutions delivered by market actors such as system vendors. NSG&B has initiated the development of a semantic model to facilitate the sharing of a company's financial data across systems.
4. **Standardisation of digital sales and purchase processes:** Achieved a high degree of standardisation by using Peppol BIS and Peppol Network, making sales and purchases more efficient across the region.
5. **Implementation of common data access tools:** Based on the fact that all main system providers of bookkeeping-, digital business- and ERP-systems in the Nordic region have APIs and other solutions available for SMEs to share their data with third parties, it can be concluded that this milestone is met.
6. **Increase in the proportion of digital invoices:**
  - **Goal:** By 2024, 80% of invoices sent in the Nordics are digital.
  - **Current Status:** Partially met. National surveys indicate Finland has a leading role with 93.2% adoption, followed by Norway at 77% and Iceland at least 75%, while Sweden and Denmark lag behind at approximately 58% and 56%, respectively.
7. **Cost savings achieved by SMEs through smart services and real-time data:**
  - **Goal:** By 2025, save EUR 500 million for Nordic SMEs.
  - **Current Status:** Savings are expected to exceed the goal due to NSG&B and national initiatives:
    1. **Denmark:** Predicted to save EUR 400 million annually from 2025 due to new legislation.
    2. **Finland:** Estimated savings of EUR 2.5 billion by 2030 from using structured procurement messages. Estimation of savings is based on calculation made by professor Tomi Dahlberg from University of Turku. Achieving these savings requires that utilisation rate of procurement messages is about 50 %.
    3. **Iceland:** eInvoices sent to the government are estimated to be saving EUR 10 million per year.
    4. **Norway:** Significant digital progress points to potential substantial savings, though no official estimate is available.
    5. **Sweden:** Improved e-invoice usage is expected to lead to major cost reductions, although no official estimate is available.
8. **Progress towards making the Nordic region the most integrated in the world by 2027:**
  - **Goal:** Become the world's most integrated region.
  - **Current Status:** The NSG&B programme has significantly advanced the Nordic Council of Ministers' 2030 strategy for a *"competitive Nordic region that promotes green growth based on knowledge, innovation, mobility, and digital integration"*. The programme supports high-quality, accessible and automatic sharing of SME data across borders in a secure, consent-based manner through:
    1. Enabling automatic cross-border eInvoicing and other eDocuments, reducing the time spent on manual administration.
    2. Developing a Nordic vocabulary for financial statements to lower the long-term costs of financial information, enhance transparency and level the competitive playing field in Nordic markets.
    3. Implementing an API solution providing access to basic standard data from Nordic registries that can be expanded as needed to increase trust to facilitate, for example, business analyses and comparisons for investors and partners.

Overall, the NSG&B programme has made a lasting impact on the development of national digital solutions and infrastructure that are interoperable and relevant within the broader Nordic region, the EU and globally.

## Challenges and external factors

The NSG&B 2021-2024 programme encountered several challenges and was influenced by a variety of external factors:

- **Differences between countries:** While the Nordic countries share many similarities, they also have distinct differences, including investments in various standards which pose challenges to achieving interoperability. In addition, each country has its own national legislation, but complicating the uniform implementation of changes and making it difficult to achieve harmonisation across the region.
- **EU Directives:** All relevant EU legislation in the field of the Single Market is integrated into the European Economic Area (EEA) Agreement so that it applies throughout the whole of the EEA, that include all Nordic countries. However, each country has to interpret and implement their own national solutions that comply with these EU directives. This process necessitates careful alignment and can lead to varied implementations across different countries.

## Impact of NSG&B deliveries on national or EU initiatives

The NSG&B programme has enhanced cooperation and knowledge sharing among Nordic countries. Its results lay a strong foundation for furthering the work on interoperability across borders. Key areas that will benefit from NSG&B's work on semantics and digital business documents include:

- **European Commission's proposal - VAT in the Digital Age (ViDA):** If implemented, NSG&B's pilot on how to fully automate VAT-reporting can make it possible for companies to report cross-border VAT automatically and directly from their ERP-systems. Moreover, NSG&B's standardised eDocuments can improve VAT system efficiency and compliance.
- **eIDAS2 Implementation:** NSG&B's interoperability solutions (semantics and national APIs) support secure cross-border digital identity and trust services.
- **The Corporate Sustainability Reporting Directive (CSRD):** NSG&B's pilots on including environmental product information in eCatalogue using the Peppol Network and eReceipts can be an example of how to facilitate compliance with the new CSRD reporting requirements.
- **Digital Product Passport:** Structured data, regarding environmental information as input to different processes that use eDocuments, can improve product information tracking and reporting across supply chains.
- **eFTI (Electronic Freight Transport Information):** Standardised eDocuments information as input to custom processes can increase freight transport efficiency and transparency.
- **Data Space Development:** NSG&B's semantic models can enable secure and efficient cross-sector data sharing. NSG&B eDocuments create opportunities to link processes to semantic content in external databases.
- **The EU's Large Scale Pilots Projects e.g. EU Digital Identity Wallet Consortium (EWC):** NSG&B's semantic models and national APIs can support the data sharing use cases of the wallet. Explore the possibility of using a wallet to exchange various eDocuments in a secure way between the various users.
- **Open Data Directive and High Value Data Set:** NSG&B's semantic models and national APIs can support the data sharing between countries.

- **Interoperability Europe act:** NSG&B's contributions in the interoperability area can support the implementation of this act.
- **EU directive on the use of digital tools and processes in company law (New Company Law):** NSG&B's semantic models can support the implementation of this law.
- **National initiatives** e.g. the **Finnish RTE program** and the **Swedish SBR Project:** Advances in open accounting benefit this initiative, regulatory and technical analyses have clarified the possibilities and responsibilities of the various stakeholder groups within open accounting.

These examples demonstrate how NSG&B's achievements can be applied to enhance future projects and initiatives.

## Perspectives for future cooperation

The NSG&B programme has laid the groundwork for continued development in several key areas. The overall denominator is to focus on *cross-border interoperability* in the following three areas:

1. **Expand development and use of eDocuments for trade between Nordic companies**  
Enhancing the use and adding features and cross-border interoperability of digital business documents is critical for improving data quality and reducing the administrative burdens on SMEs. This effort supports not only the automation of environmental reporting but also various compliance requirements across the region. Future projects can build on the NSG&B specifications and interoperability efforts to automate core business administration.
2. **Give access to high value datasets for Nordic companies**  
Continued advancements in semantic frameworks are essential for ensuring the interoperability of data across the Nordic countries. This ongoing work will be crucial for aligning with EU standards and responding effectively to the new reporting requirements. Future initiatives must prioritise the expansion and refinement of semantic models to maintain compatibility and efficiency in cross-border data exchanges.
3. **Coordination of EU-work**  
Given the strong position of the Nordic countries in the area of interoperability of our national digitalisation efforts, it is important that there is alignment with EU policy development, the national implementation of EU directives and the technical solutions.

These strategic priorities will guide subsequent initiatives, ensuring that the legacy of the NSG&B programme continues to influence and enhance the digital transformation across the Nordic region. The transition to new project organisations offers an opportunity to capitalise on the successes of the NSG&B programme and address the challenges with renewed focus and resources.