The digitalisation of small and medium enterprises in Ireland

Models for financing digital projects

Executive Summary
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Prepared for:
Department of Business, Enterprise and Innovation and the European Investment Advisory Hub

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Context

The Innovation Finance Advisory team at the EIB Advisory Services, with the consultancy support of Oliver Wyman, has been engaged by the European Investment Advisory Hub (EIAH) to conduct a study to identify the barriers to digitalisation of Irish small and medium-sized enterprises (SMEs), and develop targeted solutions on behalf of the Irish Government (Department of Business, Enterprise and Innovation).

This document is an Executive Summary of the full report delivered to the Department of Business, Enterprise and Innovation (DBEI).

The study is based on the following three-step approach:

1. **SME digitalisation in Ireland**: assessment of the current status of business digitalisation in Ireland, focusing on (a) the demand for digital solutions from SMEs in traditional sectors; (b) the availability of suitable products to meet the needs of SMEs in non-digital sectors; and (c) existing government initiatives to address barriers to digital adoption and facilitate digitalisation by SMEs.

2. **Key lessons learnt from other jurisdictions**: a cross-country analysis to identify best practices on SME digitalisation worldwide (in particular based on existing initiatives in Singapore, Finland, Denmark, France, Germany and Luxembourg).

3. **Recommendations**: four fully fledged pilots to address the digitalisation gap in Ireland, including a specific initiative of particular relevance for smaller countries.

Introduction

Digitalisation offers an enormous opportunity for countries around the globe. The digital transformation, often called the “fourth industrial revolution”, is of vital importance to ensure competitive advantage in the global economy and to deliver growth and jobs.

A McKinsey study estimates that new digitally-enabled automation and artificial intelligence have the potential to bring an uplift in GDP of €550 billion (or 1.2% per year) from 2016 to 2030 in nine European “digital front runner” economies, including Ireland.

1 World Economic Forum
3 Belgium, Denmark, Estonia, Finland, Ireland, Luxembourg, Netherlands, Norway and Sweden
However, traditional sectors are digitalising unevenly, with large disparities, and many businesses are struggling to evolve quickly enough.

Studies show that there is room for growth in digital capabilities: utilities, mining and manufacturing, for example, are in the early stages of digitalising and connecting their physical assets, and they could be at the forefront of the next wave of digitalisation. Labour-intensive industries such as retail and health care are expanding digital usage, but substantial parts of their large workforces do not use technology extensively. Industries that are both highly labour-intensive and localised, such as construction, leisure, retail and hospitality, also tend to rank lower in usage.

Digital transformation requires an enterprise-wide change driven by digital technologies and the integration of transformation processes into every aspect of the company. This transformation should be supported at company level by changes in culture, leadership, skills and processes, as well as at national level by actions encompassing multiple dimensions, from the development of digital competences in the workforce to ensuring a sound environment for the creation and implementation of innovative solutions.

Glossary

Digitalisation is not just about acquiring IT equipment and systems. It encompasses fundamental business dimensions.

Processes: Digitalisation aims to increase automation in production and integrate simulation and data analytics in processes and supply chains, thus bringing about substantial and continuous gains in productivity and resource efficiency over the full cycle from product design to lifecycle management.

Products: Driven by the development of the Internet of Things, digitalisation aims to increase the integration of Information and Communication Technology (ICT) in all types of products. This includes the development of markets such as the connected and self-driving car, wearables and smart home appliances.

Business models: Digitalisation aims to re-shuffle value chains and blurs the boundaries between products and services. Smart and connected products both drive and adapt to changes in customers’ behaviour, often establishing co-created, highly personalised services.

Companies that embrace digitalisation tend to experience better access to new markets, increased innovation and improved competitiveness.

SME digitalisation in Ireland

The Irish economy is dominated by SMEs, and SMEs need to be placed at the core of any digital transformation strategy, considering their relevance to the Irish economy, with 99.8% of active businesses and 70% of the workforce employed in non-digital sectors such as services, construction and manufacturing.

Ireland’s peculiarity is its unusually high concentration of companies (almost 50,000) in traditionally less productive sectors such as construction. More than 50% of Irish SMEs are operating in the service sector, approximately 20% in the construction and distribution sectors, respectively, and the remaining ones (7%) in the industry sector, which is largely dominated by manufacturing enterprises (around 15,000).

![Industry breakdown of total SMEs in Ireland (by number of companies)](image)

A thorough analysis of the digitalisation of the Irish economy has revealed a two-speed digital economy. While Ireland is already in a strong position, being among the most digitalised countries in the world (6th in the EU digital index DESI) for many years, the digital economy appears to run at two different speeds, with a small number of foreign-owned multinationals with high digitalisation levels and productivity, and traditional indigenous SMEs, which are slower in leveraging digital solutions to reduce costs, drive innovation and expand market presence.

The DESI reveals the relatively high relevance of Ireland to Europe’s digital performance and its high level of digital competitiveness.

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5 Particularly prevalent in wholesale and retail trade, accommodation and food services, construction and ICT sectors (National Competitiveness Council, 2014)
6 Oliver Wyman analysis based on CSO Ireland database, 2015
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However, disaggregated components of the index show that whilst Ireland is outstanding in some areas (with top rankings in the use of online trading by SMEs and Open Data), it lags behind the European average in other key areas.

- **Unbalanced digitalisation across firms: 40% of companies (mainly indigenous SMEs) in Ireland completely lack digital technologies**, with an additional 30% of businesses having few (from 4 to 6) digital assets.

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8 European Commission, 2018

9 Digital technologies as considered by the Digital Intensity Index are: internet for at least 50% of persons employed; recourse to ICT specialists; fast broadband (30 Mbps or above); mobile internet devices for at least 20% of persons employed; a website or homepage; a website with sophisticated functions; social media; sharing supply chain management data electronically; the use of Enterprise Resource Planning (ERP) software packages; the use of Customer Relationship Management (CRM); e-commerce web sales accounting for over 1% of total turnover; and business-to-consumer (B2C) web sales accounting for over 10% of total web sales. The value for the index ranges from 0 to 12.

10 Eurostat, DESI Report 2018 – Integration of Digital Technology
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- **Prevalence of e-commerce vs. e-business: SMEs** in Ireland outperform in all the e-commerce dimensions considered in the indicator, with 29.5% of Irish SMEs selling online (more than half of them are selling cross-border), but lag behind leading countries in terms of e-business technology adoption (e.g. supply chain management, enterprise resource planning, customer relationship management, radio frequency identification, etc.).

![Graph showing DESI 2018 – E-commerce Index versus Business Digitalisation Index](image)

**Figure 4: DESI 2018 – E–commerce Index versus Business Digitalisation Index**

**Table 1: Businesses adopting technologies for e-business**

<table>
<thead>
<tr>
<th>Technology</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Relationship Management (CRM)</td>
<td>31% of Irish businesses used CRM software in 2017 to capture, store and make available to other business functions information about its clients for marketing purposes, versus an EU average of 32%</td>
</tr>
<tr>
<td>Enterprise Resource Planning (ERP)</td>
<td>Used by 28% of businesses in Ireland in 2017 versus 34% in Europe (ranking Ireland 21st out of the EU28)</td>
</tr>
<tr>
<td>Supply Chain Management (SCM)</td>
<td>12% of Irish businesses reported that they shared information electronically using SCM, versus an EU28 average of 18%</td>
</tr>
<tr>
<td>Radio Frequency Identification (RFID)</td>
<td>11% of Irish enterprises used RFID technologies, versus an EU average of 12%. The most common reason for using RFID was for person identification or access control; few companies used it as part of the production and service delivery process and for product identification after the production process</td>
</tr>
</tbody>
</table>

11 European Commission based on Eurostat data
Three case studies – Laggard sectors

1. **Deep dive on construction**: the construction industry is typically a low-margin industry, failing to match the productivity growth rate of other sectors (in the US, the productivity growth rate in construction is 1% versus 2.8% worldwide\(^{13}\)) and to adopt new technologies that could increase its value.

The low digitalisation of construction relative to other industries is among the key determinants of decreasing productivity.

In this context, the National BIM Council (NBC) of Ireland was convened in June 2016. The NBC is a committee of construction clients and representatives from the industry supply chain with a shared ambition for the successful implementation of the digital design, construction and operation of built assets in Ireland.

The NBC has developed a roadmap to digital transition for Ireland’s construction industry to increase the adoption of Building Information Modelling (BIM) in Ireland. This outlines a high-level plan of strategic initiatives to assist both the public and private sectors in collectively building their digital capability. The NBC estimates that Ireland’s benefits from the implementation of digital tools and processes will include significant efficiencies and cost savings through the eradication or reduction of inefficient work practices (20% savings could generate an additional 50,000 homes, for example), better adherence to sustainability targets, a positive impact on our environment, and increased innovation and competitiveness.

2. **Deep dive on retail**: the retail sector (in particular small retailers) is another sector with a low level of digitalisation and suffers from the competition of online businesses.

The Department of Business, Enterprise and Innovation (DBEI), in association with Enterprise Ireland, has proposed a pilot scheme to increase the online capability of small to medium-sized Irish-owned retailers. By supporting a cohort of SMEs to enhance their digital capability, the DBEI aims to encourage the retail sector in Ireland to develop a more competitive online offer, which will increase their customer base and build a more resilient business in both the domestic and the global marketplaces, both online and offline.

3. **Deep dive on manufacturing**: manufacturing is another sector that lags behind in digitalisation in Ireland (20% of active SMEs).

There is a paradigm shift in the activities of manufacturing firms globally, resulting from the adoption of a new wave of advanced information and communications technologies such as cloud computing, robotics, data analytics, artificial intelligence and virtual reality.

\(^{13}\) McKinsey Global Institute, *Reinventing Construction: A Route to Higher Productivity*, 2017
The digital transition of this industry is happening now and at a fast pace. For manufacturing firms to remain competitive they must embrace their digital transformation to drive productivity, maximise the utilisation of their assets, support new business models, support process and product innovation – such as customisation and traceability of products – and develop new services.

The transformation of manufacturing firms has become a policy priority in many developed countries. In this context, an Irish Industry 4.0 Strategy is due to be completed in the first half of 2019.

The primary barriers to the further implementation of digital solutions across SMEs are a lack of knowledge about digital opportunities, technical know-how and financing issues.

• **Financing gap:** issues experienced by SMEs in accessing financing from the traditional banking channels, especially for large-scale digital transformation programmes, derive from a combination of the high cost of funding (the second highest in the EU), low profitability, already high indebtedness and a lack of expertise in the banking sector. Banks often lack the expertise to assess projects with a strong digital and artificial intelligence component, and concentrate therefore on more tangible ones (e.g. constructing a new building or buying traditional equipment) where there is clear collateral available. This finding is confirmed by the Digital Transformation Scoreboard (DTS) study. According to this study, Ireland’s international performance in digital transformation is strong (with respect to both the Digital Technology Integration Index (DTII) and the Digital Transformation Enablers’ Index (DTEI)). However, two areas with more room for improvement are “investment and access to finance” (mainly related to the ease of access to financing and to direct investments in the ICT sector) and “changes in ICT start-ups environment” (mainly caused by the low birth rate of Irish ICT companies).

• **Knowledge gap:** the primary barrier for implementing IT-related process improvements is a lack of awareness of the solutions available and of their potential benefits. With the rapid pace of change in digital technologies, many companies have difficulties deciding when to invest, up to what level and in which innovative field. Often, companies are working with a budgeting logic instead of an investment logic. Digitalisation is considered as a cost factor and not seen as an opportunity. Not enough companies know how to translate the use of technologies into economic impact, and how to build a new incremental business.

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14 European Commission, European Semester 2018: Digitalisation of the EU Economy, 2018
15 European Commission, Digital Transformation Scoreboard
There are several government initiatives to support businesses in Ireland. However, these initiatives are not fully coordinated between government entities and are not embedded in a holistic national digital strategy.

Table 2: Examples of financing and SME support programmes in Ireland

<table>
<thead>
<tr>
<th>Financing Programme</th>
<th>Description</th>
<th>High-level eligibility</th>
</tr>
</thead>
</table>
| Enterprise Ireland        | • Government organisation responsible for development and growth of enterprises  
  • Provides a range of services incl. training, mentoring, financial, networking, etc. | • Eligibility specific to support type           |
| Local Enterprise Office   | • “One-stop-shop” for SMEs, co-funded by Government and European Union  
  • Provides a range of services incl. training, mentoring, financial, networking, etc. | • SMEs  
  • Eligibility specific to support type |
| Trading Online Voucher    | • Grant of €2,500, with additional training and advice  
  • Reports average sales increase of 20% for participants | • < 10 employees  
  • < €2 million turnover  
  • Trading for over one year |
| Microfinance Ireland      | • Unsecured business loans of €2,000 to €25,000 tailored to micro enterprises  
  • Collaborates with partners (e.g. Local Enterprise Offices) to give support | • < 10 employees  
  • < €2 million turnover |
| Brexit Loan Scheme        | • Total fund of €300 million; loans available from €25,000 to €1.5 million | • < 500 employees  
  • Potential Brexit risk |

Key lessons learnt from other jurisdictions

This section outlines the best-in-class practices worldwide that support the adoption of digital solutions by SMEs. The selected cases look, through real-life examples, at the different dimensions at stake for the Irish context.

The analysis is based on the framework presented in Figure 5. It focuses on the demand side of digitalisation (i.e. SMEs) and the key barriers identified earlier (knowledge and financing gaps), but it also explores other dimensions of digital transformation: the supply side (i.e. tech companies}
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and their role in the digital journey of traditional SMEs), and the overarching need to develop a well-coordinated and consistent national strategy.

Figure 5: Framework of analysis of digitalisation cases

To address the financing gap for traditional SMEs, it is important to develop a set of dedicated financial instruments for digital projects.

The study shows banks often do not finance digital projects because they lack the expertise to assess their value and risk proposition, and they tend to privilege financing of hard assets (i.e. collateral). The shortage of funding from the commercial banking sector for digital projects is addressed in Germany and Luxembourg with specific, dedicated financing products. The offering includes both grant- and debt-based instruments. These products are differentiated based on their project stage (planning vs. development vs. implementation) and type (process vs. product), with the objective to increase the financing available and reduce the bias towards hard assets in the banking sector. The German case in particular is innovative. As part of the Bavaria Digital initiative, Digital Bonus Bavaria supports SMEs with business premises in Bavaria on their journey to digitalisation. This initiative combines grants with digital loans (on favourable terms) for a total amount of up to €1 million in a streamlined application process, reducing the administrative burden and barriers to digitalisation of SMEs (part of the cost is covered by a non-refundable grant).

To address the knowledge gap for traditional SMEs, financial instruments should be accompanied by dedicated soft measures.

While the financing gap is a clear barrier to digitalisation for traditional SMEs, the lack of knowledge and expertise is often another important limitation to these projects. Therefore, national digital strategies should consider measures to urgently address this issue. In France, the digital

17 Oliver Wyman analysis
knowledge gap faced by SMEs in traditional sectors has been addressed by Bpifrance. The French national promotional bank has developed dedicated tools to support the digitalisation of local enterprises. Besides offering financing and investment solutions, some actions have proved particularly effective in bridging the knowledge gap by providing the following:

- **Education**: raising awareness of the benefits of digitalisation, by providing education and training to entrepreneurs, including learning platforms, guidebooks and an online digital assessment tool.

- **Coaching**: supporting companies (mostly SMEs) in developing implementation plans and roadmaps, through dedicated coaching programmes, including grants for the provision of advisory and/or technical services from external providers to allow SMEs unfamiliar with innovation and digitalisation to integrate this dimension into their development strategy.

**Demand for digitalisation from traditional SMEs can be accelerated by leveraging the supply side** (i.e. tech companies selling digital solutions). This “push and pull” strategy is based on creating a tech marketplace for traditional SMEs.

**Singapore** heavily leverages high-tech companies as catalysts for increasing digitalisation in traditional sectors by supporting the creation of a strong pipeline of digital products tested, pre-approved and made available to SMEs and facilitating the matching of demand for solutions by the most suitable product available in the market. Moreover, Singapore provides traditional SMEs with access to experts and consultants, in order to improve their levels of digitalisation.

**Highly digitalised countries (such as Denmark and Finland)** show that their success is based on developing a national and well-coordinated strategy to ensure a holistic and coherent approach to digitalisation.

**Denmark**, with its Digital Growth strategy, is an example of a country with a comprehensive, long-term and country-wide digital plan. The Danish example highlights the importance of encompassing all the socio-economic dimensions (from education, to technology, to business and regulation) in the national digital strategy. The SME:Digital initiative leverages the expertise of more advanced companies to support SMEs in the early stages of their digital journey. Among other services, SME:Digital includes a sparring initiative between smaller digital SMEs and more advanced digital SMEs. SMEs will be invited to participate in small sparring groups (2–5 peer companies) in which the challenges of transformation and use of consultants to provide more long-term value will be discussed.

**Finland** also has a comprehensive national digital strategy, with its Finland Digital Framework. The key lesson learnt from Finland is the involvement and coordination of a variety of public institutions complementing each other in their effort to improve the digitisation of SMEs.
Recommendations

The study recommends that the Irish Government should adopt measures ensuring that:

1. **the benefits of digitalising traditional sectors of the economy are well understood** by different stakeholders (local business community, high-tech companies, banking sector, investors);

2. **traditional SMEs** that are willing to seize digital opportunities **have access to adequate funding** (including grants and loans) and education;

3. **tech companies** help create an impact locally, by providing **digital solutions to SMEs**.

The study proposes **four sets of initiatives**, each targeting a different combination of companies/project types. These initiatives aim to **address the key barriers** identified in the analysis: the **knowledge gap** and the **funding gap**.

The overall framework, as outlined in Figure 6, encompasses an inclusive approach with the overall goals and targets being delivered by a series of initiatives supported by a cost–benefit analysis, a promotion campaign and an implementation roadmap.

Figure 6: Proposed approach to initiative design and overview of initiatives

Source: Oliver Wyman analysis
Summary overview of the four initiatives

Initiative 1 – DigitalSME programme

The DigitalSME programme aims to help address the lack of awareness in traditional sectors regarding the business opportunities of digitalising. The programme would specifically target SMEs operating in traditional, low-digital sectors such as manufacturing, construction and services. It involves the three-step process of an assessment by a tool called a Digitalometer, a grant to support the first moves in the direction of adopting digital technology and ultimately moving to a loan finance mechanism to support larger-scale investments as outlined below. This initiative seeks to cover the knowledge gap, which is critical as a first step, and then progress into the finance gap to support implementation.

Figure 7: Overview of Initiative 1 – DigitalSME programme

Initiative 2 – Tech4SMEs

The second initiative is targeted at enhancing the supply of digital solutions designed to improve the productivity of SMEs. The goal of Tech4SMEs is to incentivise start-ups and high-tech companies to develop technological solutions (e.g. data analytics, workflow tracking, inventory management) specifically for traditional SMEs in Ireland. This initiative will help to fill the finance gap for high-tech companies who have the knowledge but require access to innovative finance mechanisms that reflect the characteristics of their business models using a grant and equity-type finance. This is complemented by the development of a comprehensive database with details of their technology offering to facilitate easy access for companies to products that would support their business model through the adoption/enhancement of their digitalisation strategy.

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Figure 8: Overview of Initiative 2 – Tech4SMEs programme

**Initiative 3 – DigiTech Loan**

The third initiative is an income-contingent loan scheme to provide financing for both traditional SMEs in non-digital sectors and potential suppliers of new digital solutions. It will provide a new financing option for SMEs that are looking to implement digital projects end-to-end, and/or to finance transformational projects with highly technical solutions (e.g. Internet of Things, artificial intelligence, blockchain, smart factories). It involves a riskier loan than that available in the first two initiatives, and the finance terms will be influenced by the profile of the businesses.

Figure 9: Overview of Initiative 3 – DigiTech Loan

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Initiative 4 – DigiTechSME Loan

Initiative 4 represents an alternative implementation strategy that combines the two financial instruments under initiative 1 (DigitalSME Loan) and initiative 3 (DigiTech Loan) in a single instrument (DigiTechSME Loan). Recognising that implementing three separate financial instruments might be a challenge for smaller countries (potentially including Ireland), given the size of the local market and the complexities involved in these separate initiatives, the study proposes the option to develop an initiative offering more flexibility and a simplified approach, which facilitates the pooling of resources effectively and efficiently. It involves a loan finance mechanism that makes it easier for traditional companies and digital tech innovators to adopt/implement both incremental and transformational digital solutions.

Figure 10: Overview of Initiative 4 – DigiTechSME Loan

[Table and diagram]

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