SME Digitalisation to Build Back Better

OECD

Digital for SMEs
Global Initiative

OECD SME and Entrepreneurship Papers

SME Digitalisation to "Build Back Better"

Digital for SMEs (D4SME) Policy Paper

This policy paper aims to improve understanding on how SMEs responded to the COVID-19 crisis and adapted to the new environment, and how different players in their ecosystems are contributing to their digital transition. The first part of the paper sets the scene on the digital transformation of SMEs, by providing an overview of key trends in SME uptake of digital technologies across OECD countries. The second part of the paper focuses on some of the main trends emerging from - or being strongly accelerated by - the COVID-19 crisis, including access to digital infrastructure, e-commerce and teleworking. The third and last section discusses international practices in SME digitalisation policies and presents original evidence from the "rescue" and "recovery" packages launched by OECD governments to face the crisis; as well as case studies and qualitative evidence from private-sector programmes provided by partners of the Digital for SMEs Global Initiative (D4SME).

ABOUT THE OECD

The OECD is a multi-disciplinary inter-governmental organisation of 38 member countries which engages in its work an increasing number of non-members from all regions of the world. The Organisation's core mission today is to help governments work together towards a stronger, cleaner, fairer global economy. Through its network of 250 specialised committees and working groups, the OECD provides a setting where governments compare policy experiences, seek answers to common problems, identify good practice, and co-ordinate domestic and international policies. More information available: www.oecd.org.

ABOUT THE SMEs AND ENTREPRENEURSHIP PAPERS

The series provides comparative evidence and analysis on SME and entrepreneurship performance and trends and on a broad range of policy areas, including SME financing, innovation, productivity, skills, internationalisation, and others.

This paper was authorised for publication by Lamia Kamal-Chaoui, Director, Centre for Entrepreneurship, SMEs, Regions and Cities, OECD.

This document, as well as any statistical data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Table of contents

Tables

Figures

Boxes

Executive Summary

Digitalisation of SMEs is fundamental in building inclusive and resilient economies and societies. Although there has been a steady upward trend in the uptake of digital technologies by SMEs over the last decade, the gaps with large businesses remain large, contributing to inequalities among firms, and, in turn, people and places. At the firm level, digital gaps are strongly associated with gaps in productivity, scaling up, innovation and growth, all of which impact not only on aggregate economic growth, but also on inclusion and societal well-being.

SMEs face several barriers in their journey to digitalisation. Lack of information and awareness, digital skills gaps and insufficient capital to finance the transformation represent long-standing hurdles to go digital for a large share of the SME population. In addition, smaller firms face heightened difficulties in overcoming challenges in the broader business environment, such as rapidly changing regulatory frameworks, dealing with digital security and privacy issues, or simply accessing high quality and affordable digital infrastructure. Smaller firms are also less aware of public programmes that they could leverage at low or no cost to sustain their digital transformation.

The lack of digital skills is a challenge that is transversal to most SMEs and is emerging as a key hurdle to SME digitalisation. Many smaller firms lack a digital culture, both at the management level, where the potential benefits of digitalisation are often unknown or not fully understood, as well as at the employee level, where there are challenges in digital skills.. Moreover, because fewer SMEs train their employees to improve their IT skills, compared with large companies, digital gaps with large firms persist and indeed risk of widening. Enabling SMEs to outsource and access the relevant digital skills and, indeed, training, within their ecosystems and local communities, such as through stronger links with key knowledge providers, including Higher Education Institutions research bodies, technology and service providers from the private sector, and public training centres and innovation hubs, can help close these gaps.

While there are common challenges for SMEs to go digital, a one size-fits-all approach to SME digitalisation is not effective given the large diversity across industries and the business population. The levels of digitalisation vary greatly across industries and firms' sizes. The difference in adoption in part reflects the sector of activity (e.g. ICT firms have a much higher adoption rate of basic and advanced technologies than other sectors), but also diverse incentives and constraints across sizes, particularly for smaller firms. For instance, across OECD countries, on average, the share of small firms using cloud computing services is 30% less than the share of large firms. Such diversity demands attention to specificities across the SME population when assessing digitalisation trends and designing policies to sustain the digital transition of small businesses.

The COVID-19 crisis has heightened the importance of SME digitalisation and served as an accelerator of trends. Data gathered in a joint research initiative by the OECD, Facebook and the World Bank (Future of Business Survey) show that between 25% and 62% of SMEs (with a Facebook page) across OECD countries increased the digitalisation of their business processes in 2020. For many SMEs, digital technologies have been essential to the continuation of economic activity and the provision of essential services during the crisis. For example, strengthening the online presence on social media, online marketplaces and websites has been the only way for many businesses to continue serving their clients, especially in industries traditionally based on proximity and contact, such as tourism and retail. For many firms, the ability to shift to teleworking models has been vital, and indeed, significant, with teleworking levels across OECD countries increasing by on average six times pre-pandemic levels at the height of lockdown restrictions.

Differences in digital maturity affected SMEs' abilities to adapt and seize emerging opportunities during the crisis. SMEs that were already engaging with digital tools, or accelerated uptake, had the capabilities to respond more efficiently to the pandemic business conditions. SMEs who engaged in e-commerce or digital advertising reported a higher level of revenue throughout the pandemic, compared to

those with lower rates of digital sales. Survey evidence suggests that SMEs that were highly digitalised before the pandemic were more likely to identify new business opportunities throughout the crisis. However, size still affected digital adoption, with smaller firms least likely to adopt new digital tools in response to the changing conditions.

A significant share of SMEs (some 40%) are convinced that COVID has permanently changed their use of digital technologies. However, an important minority (some 30%) is not. The acceleration in digital adoption caused by the pandemic is poised to last, according to a significant share of interviewed firms in the Future of Business survey. But the effect seems to be stronger the larger the firm. Around 1 in 3 micro firms and 1 in 5 medium companies take the view that their digital transformation was necessary during the emergency situation but will not be permanent.

Governments must ensure that momentum is not lost as economies strive for long-term sustainable recovery. An analysis of more than 90 rescue and recovery packages worldwide shows that targeted support to SME digitalisation increased in absolute value but decreased as a share of total investment in digitalisation, from around 23% (8 billion USD) in rescue packages (i.e. immediate response to the crisis), to 8% (49 billion USD) in recovery packages (i.e. medium-long term recovery plans). It is essential to consider how SMEs can benefit from improved structural framework conditions and if specific barriers exist that need targeted approaches, including by drawing from the lessons learnt during the crisis.

D4SME Dialogues and OECD analyses highlight key policy areas for enabling SMEs to "build back better" after the pandemic. OECD governments have developed targeted policies and operational toolkits in particular on: e-commerce and SME exporting strategies; digital skills training; connectivity of local ecosystems; inclusive recovery; leveraging digital technologies for sustainability; and support to well-being and mental health. Policies to strengthen digital infrastructures are also a priority in this context. For firms to fully capitalise on the benefits digital technologies can provide, ICT infrastructure, such as fast broadband, is essential. But connection is not all, as adequate digital security and data protection practices are fundamental for SMEs to digitalise safely.

Private sector initiatives are also playing an important role in enabling or sustaining the digital shift of SMEs, including in cooperation with public institutions. SME ecosystems have proved an essential driver of transformation during the pandemic, enabling many small businesses to increase their access to digital services and tools. Industry and SME associations stepped up activities to promote digitalisation among their networks and specialised SMEs and start-ups played an important role in supporting other SMEs to design and implement their digital strategy, often through tailored services and products. Large technology companies launched or updated programmes for SMEs, often adapting these to country or regional contexts. An analysis of a sample of 22 private sector initiatives to support SMEs launched by D4SME partners (large digital service providers) shows a strong focus on providing digital skills training to entrepreneurs and SME employees, as well as e-commerce guides, discounts and offers to services and products, business consultancy services, coaching webinars and live events, and access to finance. Most of these initiatives were launched in response to the COVID-19 crisis, and most are expected to stay in place after the recovery from the pandemic.

Cooperation among public and private sector actors is key in enabling SMEs to seize the benefits of digitalisation. If the initial responses to the crisis focused on essential instruments to continue operations and helped raised awareness of the opportunities digital technologies can offer SMEs, recovery measures need to address structural barriers to SME digitalisation, such as the skills gap and the lack of digital infrastructure, especially in remote areas, where SMEs are often the only form of business. This demands the mobilisation and coordination of resources and expertise across sectors and institutions. Cooperation between relevant public and private actors in the SME ecosystem is crucial to ensure that all SMEs can adapt and transition to the digital economy.

Acknowledgments

---

[1] To contact the authors: Marco.BIANCHINI@oecd.org and Madison.LUCAS@oecd.org.

1. Introduction

1.1. The Digital for SME (D4SME) Policy Paper

This policy paper aims to improve understanding on how SMEs responded to the COVID-19 crisis and adapted to the new environment, and how different players in their ecosystems are contributing to their digital transition.

The first part of the paper sets the scene on the digital transformation of SMEs, by providing an overview of key trends in SME uptake of digital technologies across OECD countries. The second part of the paper focuses on some of the main trends emerging from - or being strongly accelerated by - the COVID-19 crisis, including in relation with access to digital infrastructure, e-commerce and teleworking. These sections leverage existing literature and recent OECD work in this area, integrating them with evidence provided by partners of the OECD Digital for SMEs (D4SME) Global Initiative.

The third and last section of the paper discusses international practices in SME digitalisation policies and presents original evidence on approaches and measures to foster SME digitalisation within the "rescue" and "recovery" packages launched by OECD governments to face the crisis. While the emergency policy responses to the pandemic were largely focused on helping SMEs to "weather the storm" and get through the crisis, the attention of policy makers has gradually shifted to fostering structural changes that can strengthen SME long-term resilience and sustainability. The analysis integrates case studies and qualitative evidence provided by D4SME partners from the private sector, such as on selected programmes to support SME digitalisation, including in cooperation with OECD governments. These experiences are discussed in relation with key aspects of digitalisation they aim to address, their target audience and their longer-term objectives, beyond the pandemic period.

The methodology and delivery of this paper rests upon the OECD Secretariat, leveraging OECD publications and ongoing work on SME trends and digitalisation, and on SME policy responses to the COVID-19 crisis. The paper is also informed by the D4SME Network and Policy Dialogue events, including the High-Level Policy Roundtables, which were held under the Initiative's Programme of Work (PoW) 2020 and PoW 2021-2022, bringing together international experts to discuss specific aspects of SME digitalisation[2]. D4SME Partners contributed to the paper by participating to define key issues for analysis, sharing their research work and original data from surveys they conducted, as well as information about their programmes focusing on SME digitalisation, including initiatives undertaken in cooperation with public institutions. Case studies and specific SME experiences are provided throughout the text, leveraging the D4SME "SME Databank", a cross-country and cross-sector repository of SME digitalisation business cases.

---

[2] The Summary Records of these events are published on the D4SME website (https://www.oecd.org/going-digital/sme/).

1.2. The D4SME Global Initiative

The OECD "Digital for SMEs" (D4SME) Global Initiative aims to promote knowledge sharing and learning on how to enable businesses of all sizes to benefit from the digital transformation**.** To this aim, the Initiative encourages sharing of experiences and good practices to support the digital transition of all SMEs, according to their needs, level of digital maturity and ambitions. The initiative thus targets SMEs that are at the beginning of their digitalisation journey, usually starting from the uptake of basic digital tools (e.g. having a functional website, managing effectively social media profiles), as well as firms that have already embedded some or several digital technologies in their processes and are looking for the "next steps" to take (e.g. digitalisation of core business functions, uptake of frontier technologies as Artificial Intelligence (AI), Blockchain, Augmented Reality (AR), Virtual Reality (VR)).

The D4SME Global Initiative acts as a platform for cooperation and knowledge exchange among stakeholders from governments, sector associations, academia and industry, including the SMEs themselves. It aims to leverage broad expertise, different viewpoints, as well as original data and research approaches to produce collaborative research outputs. The initiative, managed by the OECD Centre for Entrepreneurship, SMEs, Regions and Cities (CFE) in partnership with Business at OECD, is led by OECD member countries: it is chaired by New Zealand and co-chaired by Ireland and Korea at Ministerial level. The private sector partners of the Initiative include SMEs and SME associations from OECD member countries, as well as large providers of digital services: Amazon, Facebook, Microsoft, Kakao, PayPal, Vodafone, and Wix. The European Commission is a knowledge partner of the Initiative.

The activities of the Initiative are organised along the lines set in its biennial Programme of Work (PoW) 2021-22, which is structured around three pillars: *analytical research*, to produce, in cooperation with partners, analytical outputs that can shed light on SME digitalisation needs, trends and initiatives, and can inform the OECD agenda in this area; *sharing SME experiences*, to build a databank of case studies of SMEs going through the process of digitalisation; *Network and policy dialogue*, to share knowledge on key topics of relevance (e.g. digital security and data protection, the twin transition to sustainability and digitalisation), including through thematic seminars and a yearly D4SME High-Level Policy Roundtable bringing together all D4SME stakeholders.

2. Key trends in the digital transformation of SMEs

This section provides a brief overview of key trends in SME digitalisation across OECD countries, setting the context for the discussion of SME digitalisation in response to the COVID-19 crisis, policy strategies and private sector initiatives, articulated in the remaining of the paper. The section leverages key insights and data from recent OECD reports, D4SME partners and D4SME Knowledge Sharing events. The introduction looks at the uptake of different digital technologies by firms, depending on their size, focusing on some key applications, such as cloud computing services. It then presents a focus on the digital skills gap of SMEs, a crucial and longstanding challenge to SME digitalisation, reflecting main insights from the D4SME webinar dedicated to the topic in June 2021.

Digitalisation of SMEs is crucial in building inclusive and resilient economies and societies. Ensuring the uptake of digital technologies by all SMEs and entrepreneurs is central to fully unlocking the potential of the digital revolution at large. SMEs are the backbone of most OECD economies. Across the OECD, they account for 99% of all businesses and between 50% and 60% of value added (OECD, 2021[1]). SMEs are an important source of employment for communities, with almost one person out of three being employed in a micro firm with less than 10 employees and two out of three in an SME (OECD, 2019[2]). SMEs are also strategic actors in global value chains, often playing a key role in large firms' supply chains (OECD, 2021[1]).

However, many SMEs risk missing the benefits digitalisation can offer. At the firm level, digital gaps are strongly associated with gaps in productivity, scaling up, innovation and growth. These gaps contribute to inequalities among firms, and, in turn, people and places, with concerns that the benefits of digitalisation could accrue mainly to early adopters. Research shows that closing the SME digital gap not only increases a country's productivity performance, but can also contribute to decreasing place-based inequalities. However, overcoming these barriers, and allowing SMEs to fully embrace the benefits of the digital transformation, cannot be met by SMEs alone. Policy makers, innovative SMEs, large firms, business and sector associations and other actors in the SME ecosystem have a strong role to play (OECD, 2021[3]; OECD D4SME Initiative, 2020[4]).

The D4SME Global Initiative aims at contributing to the international policy discussion on how to enable all SMEs to benefit from the digital transition. Since its launch in 2019, the D4SME initiative set out to explore key opportunities and challenges for SME digitalisation, favouring dialogue between OECD governments and representatives of the private sector and academia. The first High-Level Roundtable addressed structural and emerging issues related to the digitalisation of SMEs, including access to digital infrastructure, the use of digital platforms for payments and financing, as well as the potential benefits and challenges for SMEs at large from the use of advanced digital technologies to manage, store and analyse data (e.g. Blockchain and Artificial Intelligence; Box 1).

Box 1. The First Roundtable of the OECD "Digital for SMEs" (D4SME) Global Initiative

The inaugural OECD Roundtable on "Digital for SMEs" took place at the OECD Headquarters in Paris on 29 November 2019, formally launching the Digital for SMEs (D4SME) Global Initiative. The OECD Centre for Entrepreneurship, SMEs, Regions and Cities and Business at OECD jointly launched the initiative and hosted the Roundtable. The European Commission joined the Initiative as a knowledge partner.

The first D4SME Roundtable gathered over 100 participants from governments, large companies, SMEs, incubators, financial institutions, academia and business sector associations. The event was opened by then OECD Secretary-General Angel Gurrìa and chaired by New Zealand's Minister of Small Business, Hon Stuart Nash, Chair of the D4SME Initiative. Ms. Park Young-sun, Minister of SMEs and Startups (*Korea)* and Mr. Pat Breen, Minister of State with special responsibility for Trade, Employment, Business, EU Digital Single Market and Data Protection *(Ireland),* co-chaired the event. Amazon and Facebook were the first official partners of the Initiative, sponsoring the event.

The meeting included four thematic sessions, during which policy makers, entrepreneurs and experts discussed:

- SME access to digital infrastructures and platforms;

The heterogeneous nature of SMEs should be central to the analysis and policy making process. Taking into account this large diversity, for SMES to be competitive and scale-up, and operate on equal footing

---

> *with larger players, accessible, reliable and affordable digital infrastructure is critical, as it is skill development.*
>
> - Artificial Intelligence for SMEs;
>
> *Access to data and funding at an appropriate scale play a particularly relevant role for the uptake of AI solutions for SMEs. However, limited awareness and training contribute to a widening knowledge gap between frontier firms and the rest. There is also a need for coordination between national AI policies and global AI principles to guide new technology developments, including on ethics, cybersecurity and privacy.*
>
> - Blockchain for SMEs and entrepreneurs;
>
> *Blockchain technologies can bring benefits to SMEs, such as in relation to their access to finance and participation in global value chains. However, for these benefits to be shared, awareness and understanding of such technologies among 'traditional' SMEs are critical. Governments need to develop clear and effective regulation that is globally coordinated, to signal the viability of the technology to SMEs.*
>
> - Fintech for SMEs.
>
> *Fintech can enhance access to finance by SMEs and is ultimately a key tool in the financial inclusion of small firms. SMEs play a critical role in the Fintech ecosystem, as both users and providers of Fintech services. Many small Fintech operators already successfully cooperate with traditional financial institutions and multinational companies. However, governments face the challenge of ensuring a level playing field between traditional financial institutions and newcomers, all while guaranteeing investor and consumer protection, Anti-Money Laundering/Know-Your-Customer practices.*
>
> Source: OECD D4SME Initiative, « First Roundtable Proceedings », November 2019
> (https://www.oecd.org/cfe/smes/latestdocuments/D4SME%20First%20Roundtable%20Proceedings.pdf)

2.1. SME digitalisation trends across the OECD

There are important benefits for SMEs from the uptake of digital tools, services and practices. Digitalisation provides SMEs with capabilities to innovate, grow and access new markets across regions and countries (OECD, 2019[5]). Digital services are also typically flexible in terms of pricing, allowing SMEs to access "state-of-the-art" digital capabilities without incurring in the costs of building their own software and hardware infrastructure (OECD, 2021[3]).

The levels of digitalisation vary greatly across industries. Sectoral differences exist in the business functions that are more often digitalised and in the technologies that are more readily adopted Differences in adoption tend to reflect the diversity in value creation processes across sectors. For example, across OECD countries in the ICT sector the median share of employees with access to a device with online connection is around 90%, while across all sectors the median is 50% (OECD, 2021[1]).

However, usually the smaller the firm the smaller the capacity to undertake the digital transformation. Across the wide spectrum of digital tools available, SMEs consistently lag behind larger firms (Figure 1). The gap differs across technologies and services. It is relatively small in the case of digital interaction with governments (that appears almost size-independent), and for the use of Social Media and electronic invoicing. Expectedly, the largest gap is observed in the use of software whose utility is strongly size-dependent (e.g. Enterprise Resource Planning). Across countries, large gaps between SMEs and

large firms are also observed in the use of Business Data Analytics[3] (Figure 2 (OECD, 2020[6])), although the decrease in the cost of storing and processing data as well as the easier, cheaper access to software and analytical tools have made this practice more accessible for SMEs (OECD, 2020[6]). Cloud computing services (Box 2) in particular are especially relevant for SMEs to use Big Data and harness the potential of data analytics, since, by providing supercomputing resources in a flexible manner, they allow companies to overcome barriers related to the high costs of building the ICT infrastructure (Bianchini and Michalkova, 2019[7]).

Figure 1. SME gap in digital adoption exist across technologies

Diffusion rate, median OECD, based on country average percentages of enterprises using the technology over 2015-18
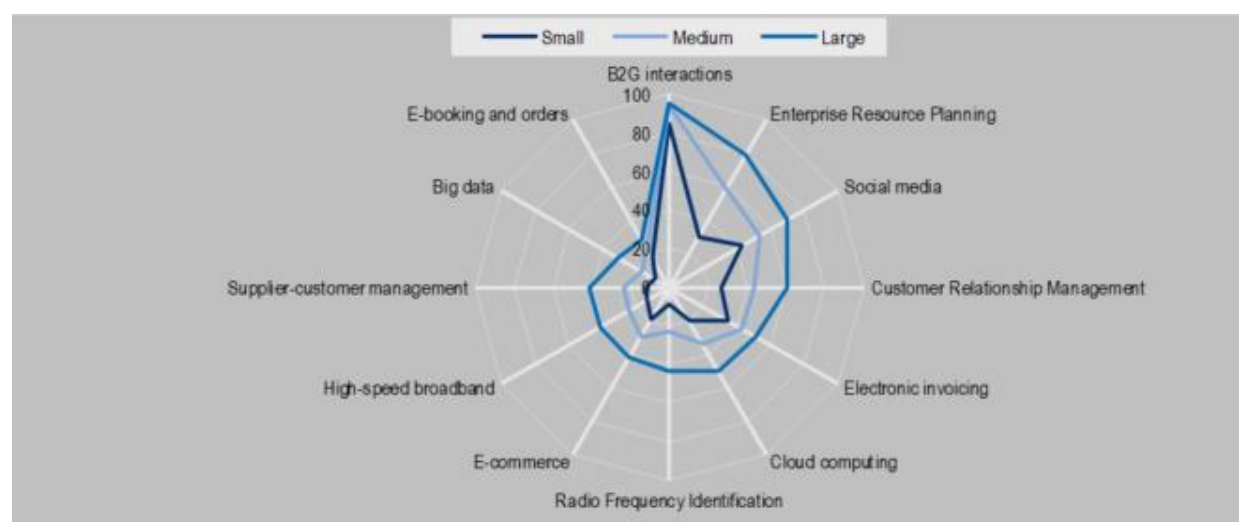
Note: Values represent the median of diffusion rates in countries for which data are available. Country diffusion rates are average rates calculated over the period 2015-18. This approach helps avoid distortions in time or in a single year, but may tend to underestimate the diffusion rates of technologies that are diffusing quicker.
Source: (OECD, 2021[3]); OECD ICT Access and Usage by Business Database

---

[3] Business Data Analytics (BDA) refers to the use of techniques, technologies and software tools for analysing large datasets deriving from online activities and machine-to-machine communication (e.g. data produced from social media activities, Internet of Things sensors in manufacturing).

Figure 2. The gap in the use of Business Data Analytics is evident across countries, 2020

Percentage of firms, by size class
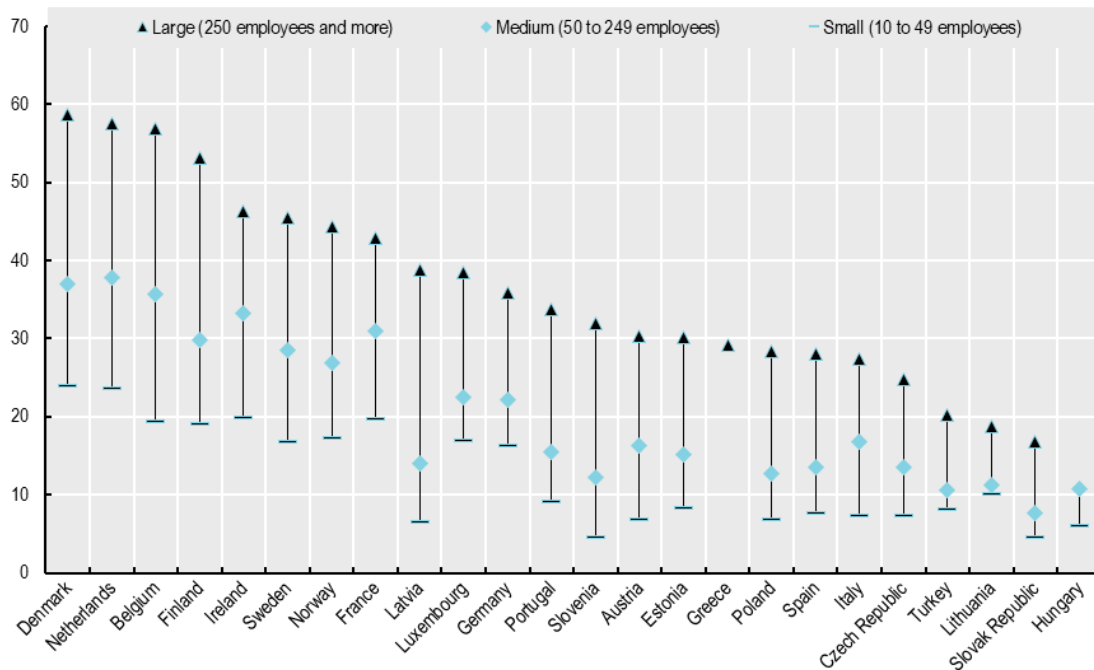
Source: OECD ICT Access and Usage by business database (accessed September 2021).

Box 2. Cloud computing for SMEs

While SME digitalisation processes differ markedly across sectors and size, some digital technologies such as cloud computing are ubiquitous. For example, a firm operating in the construction sector might be looking to digitalise its worksites and staff management, while a small restaurant might want to gather and analyse data about online reservations and favourite picks in the menu in different seasons. However, both could end up using software that are fully cloud-based and leverage packages offered by large providers to accelerate the transition and better serve their customers. During the COVID-19 pandemic, new businesses were launched that leveraged the cloud for their full operations. For instance, this is the case of Flowe (Italy), a Fintech SME, a sustainability-driven digital bank, which operates entirely on the cloud, with all their staff working remotely.

Most cloud computing solutions are flexible and thus more affordable, which makes them particularly well suited for use by SMEs, but still SMEs tend to lag in their adoption. SMEs can avoid heavy hardware expenses, while at the same time enjoying state-of-the-art data management and cybersecurity, including backups and data recovery protocols. Cloud capabilities offered are usually "pay-as-you-go", allowing SMEs to increase their digital capacity (i.e. computing power, memory) in response to their actual need, to then scale back when the need has been met. Most firms' software can be run on cloud (e.g. CRM, accounting, HR management) and employees of SMEs can also receive free training to make the best of such products. Still, data show that in OECD countries SMEs usually lag markedly in the adoption of cloud solutions, even if their uptake has increased in recent years.

Figure 3. Businesses purchasing cloud computing services, 2021

Percentage of businesses by size
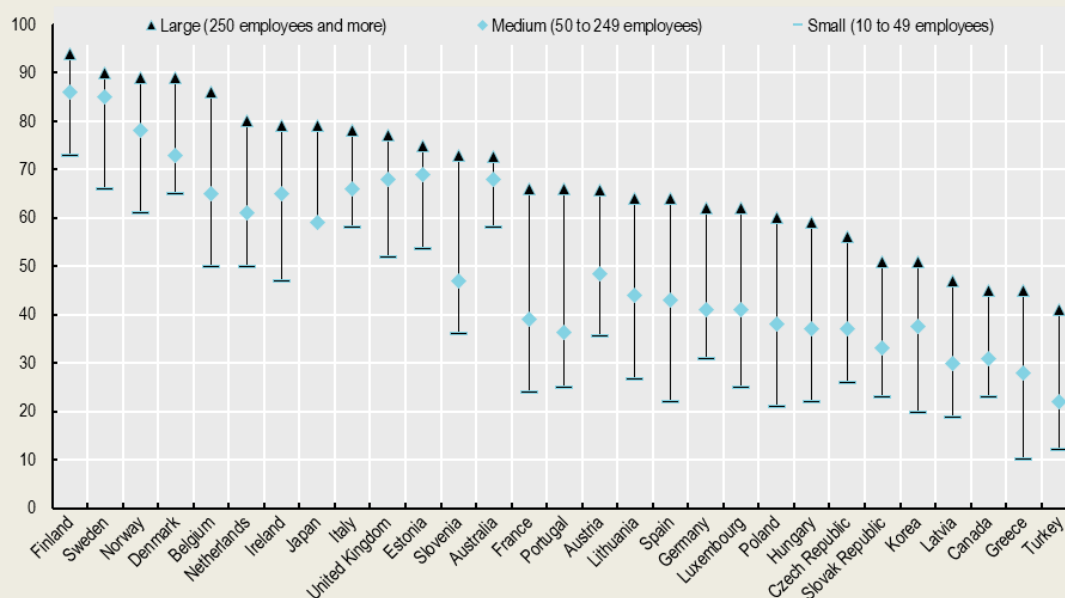
Source: OECD ICT Access and Usage by Business Database (Accessed September 2021); (Microsoft, 2021[8])

To compensate for weak internal and external capabilities, or to focus on core business, SMEs often outsource digital solutions. This is the case, for example, of digital platforms and ecommerce marketplaces to sell online, or external consultants or security-by-design features for managing digital security risks. Relying on these external systems and providers of digital solutions is often a cost-efficient alternative for SMEs (OECD, 2021[3])

In particular, many SMEs rely on online platforms to digitalise business functions and improve productivity. SMEs can lower operation costs, access business intelligence services, generate economies of scale (capitalising on network effects) and economies of scope as online platforms allow them to reduce information asymmetry, increase client/supplier base, unlock greater market outreach, and outsource logistics, among many other factors. Recent studies show that online platforms increase productivity in hotels, restaurant, taxis and retail trade sectors, where the presence of SMEs is overwhelming. The increase in multi-factor productivity is higher in countries where platforms are more developed (Bailin Rivares et al., 2019[9]). In addition, the impact on firms' productivity appears to be larger for smaller-size businesses: in OECD countries, a one-standard deviation increase in traffic on platforms is associated with a boost of 10% in labour productivity growth for micro firms (less than 10 employees), while the boost is 7% for small (10-49 employees) and 6% for medium (50-100 employees) firms (Costa H., et al., 2020[10]; OECD, 2021[3]; OECD, 2021[11]).

But there are risks and challenges associated with SMEs outsourcing digital solutions or depending solely on third party providers. Although outsourcing can enable SMEs to engage with certain digital tools, over a long-term and for more advanced digital transformation, relying solely on third party providers' 'off-the-shelf' solutions may risk limiting the transition to only basic digitalisation. The European DIGITAL SME Alliance asserts that SMEs run the risk of dependency if they rely on adopting 'off-the-shelf' solutions alone and highlights that, for a long-term sustainable transformation, SMEs need to build on their B2B

relationships, thus contributing to the development of an innovation-driven ecosystem (European DIGITAL SME Alliance, 2020[12]).

Competitive digital markets are key to ensure the digital transformation of SMEs. Considering the importance of these platforms for the digital transformation of SME, a level playing field to access, develop and uptake digital services is crucial. Such a competitive business environment can spur innovation, new business models, business dynamism and productivity (OECD, 2020[6]).

2.2. Focus: the SME digital skills gap as barrier to digitalisation

Size-related constraints have been limiting digital adoption by SMEs, contributing to a lack of digital readiness that the pandemic made especially evident. These barriers include SMEs' lack of information and awareness, digital skills gaps and insufficient capital to finance the transformation and invest in intangble ICT capital (Berlingieri et al., 2020[13]). Also, smaller firms face more difficulties in overcoming challenges in the broader business environment. Barriers such as changing regulatory frameworks, dealing with digital security and privacy issues or simply accessing quality digital infrastructure need to be overcome. Smaller firms are also less aware of public programmes that they could leverage at low or no cost to sustain their digital transformation (OECD, 2021[3]).

Many smaller firms lack a digital culture, particularly at the management level, whereby the potential benefits of digitalisation are widely unknown or not understood. This can lead to a mistrust of a data or digital transition (Bianchini and Kwon, 2021[14]). The skills that managers and entrepreneurs of SMEs often lack are not only "hard" (e.g. technical understanding of the inner workings of digital technologies) but also "soft" (e.g. digital literacy, leadership, professional attitude).

SMEs are less likely to have the skills for managing their digital transformation. Evidence shows that business uptake of digital tools is associated with incentives to firms, but also to capabilities including employees' ICT skills (Andrews, Nicoletti and Timiliotis, 2018[15]). In 2019 a quarter of SMEs in the EU reported a lack of skilled staff or experienced managers as their most important problem (before access to finance or regulation). Over 70% of EU firms reported that the lack of digital skills within their businesses is a key obstacle to investment. (OECD, 2019[2]; OECD, 2020[6]).

Moreover, as less SMEs train the ICT skills of their employees compared with large companies, the gap persists or widens. ICT trainings can unlock the use of multiple digital technologies: as a proxy, the share of firms offering ICT trainings to non-ICT professionals seems to be positively correlated to the share of firms using social media across OECD countries, with a higher effect the smaller the size of the firm. However, the share of small and medium firms providing ICT training to non-ICT specialists employed is much lower than that of large firms. There are wide difference across countries, but in 2020 on average only 15.5% of small firms (from a minimum of 7.2% to a maximum of 30.0%) and 34.1% of medium firms (min 14.8%, max 57.9%) provided this type of trainings, while among large firms the average is 61.6% (min 36.2%, max 85.6%; Figure 4) (OECD, 2021[3]).

Figure 4. Smaller firms offer less ICT training opportunities to their employees

Share of firms providing ICT training to non-ICT professionals, by size, 2020
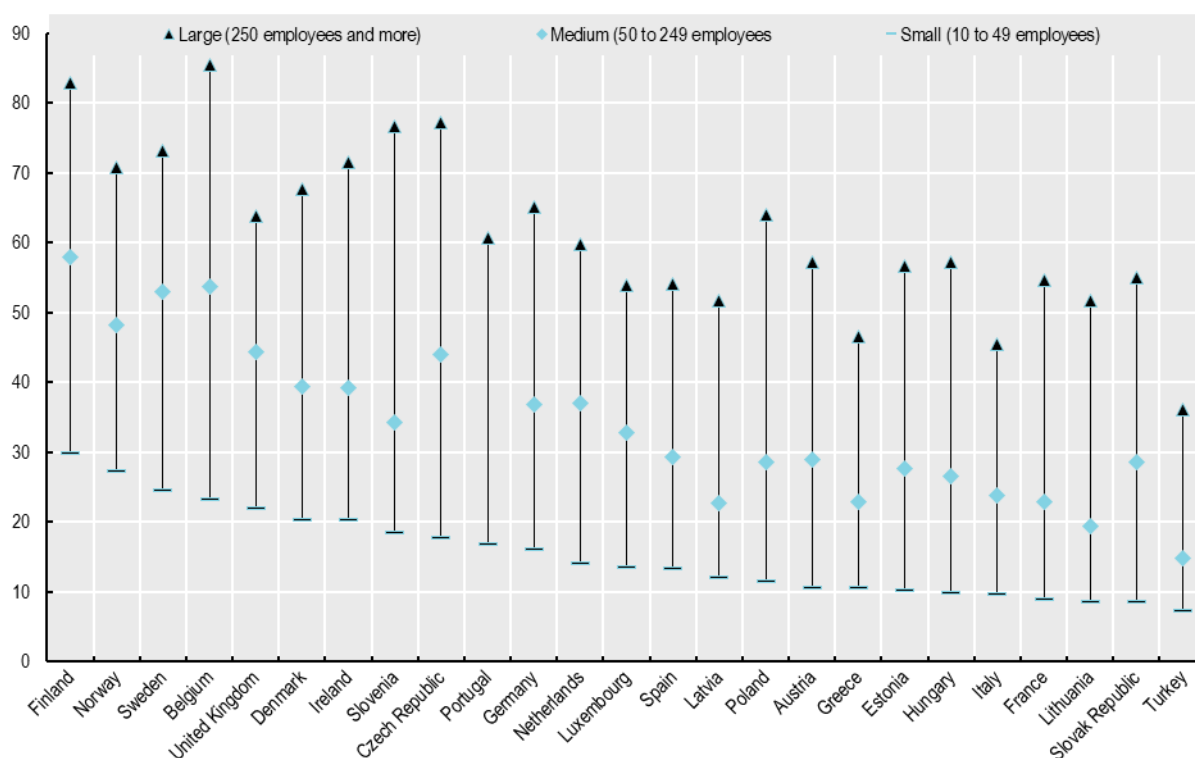
Note: OECD ICT Access and Usage by Business database (accessed September 2021)
Source: Data for the UK and for Small and Medium-sized businesses in Greece refer to 2019

Actions are needed to help SMEs to up-skill or re-skill. As discussed at the D4SME Policy Dialogue on *Frontiers of Digital Learning*, the digital skills gap is often a result of SME resource constrains such as related with size, access to finance or a lack of motivation to undertake or complete courses (OECD D4SME Initiative, 2021[16])). A key takeaway from this event was that, due to size and resource constrains, many small firms are more dependent than large firms on their ecosystem and networks to access the relevant skills to transform their business models to be digital. However, this also implies that SMEs must be aware about their needs in terms of digital skills and be proactive in reaching out to their ecosystems and networks in externalising digital functions.

There is a difference between digital literacy and advanced digital skills. Not all SMEs need to have advanced digital skills to code and produce software in-house. But they do need to invest in internal capabilities as to have an understanding of what advanced digital technologies (e.g. Blockchain, Artificial Intelligence, Internet of things) could do for their business and how they could leverage them, even if they are provided by third parties. A study by Vodafone illustrates the size-related gap in firms' use of big data, with only 12% of SMEs in their research using big data compared to 33% of large firms (Vodafone, 2020[17]). The adoption of advanced technologies can benefit all SMEs, including those operating in traditional sectors. As a case in point, Box 3 illustrates a use case of IoT by an Italian producer of lifts. At the same time, the importance of early steps in the digital journey should not be overlooked, such as the benefits that small businesses may accrue by effectively using accessible digital tools that require basic skills, such as social media or launching a website. Acquisition and basic usage of digital technologies are the first steps into digital adoption, which nonetheless demand strategic decisions for integrating the technology with the business model and process. Age in SMEs plays a role as well. For example, a recent OECD

study on SME digitalisation in Korea highlights that employees in SMEs tend to be older than in large enterprises, which may represent a challenge for the business digital transformation, since the share of Korean adults with limited or no digital skills is especially high in elder population (Bianchini and Kwon, 2021[14]).

Box 3. SME Experience: Internet of Things (IoT) for smart lifts in Italy

Tre-e consortium and the case of IoT powered Smart Lifts

Tre-e consortium is a B2B technology provider, offering an IoT powered platform to SMEs that operate in the lift sector in Italy. Smart Lifts enables traditional SMEs operating in the lift manufacturing industry to digitise part of their business processes and enhance their productivity by efficiently monitoring their lifts.

IoT technologies allows SMEs to coordinate logistics amongst the different stakeholders in the supply chain for the production of, and significantly the maintenance of lifts. Tre-e consortium has centralised the operation and upkeep of managing lifts, ensuring that repairs were performed efficiently when needed. By implementing IoT sensors, the SMEs who manage the lifts are able to have access to important measurements as well as administrative and historical data which notifies them of predictive or preventative repair and improve service efficiency. Other emerging technologies such as AI and Blockchain are beginning to be integrated within the platform to enhance the operational efficiency.

Smart Lifts currently facilitates twenty SMEs who manage over 10 000 lifts throughout Italy. There is the possibility for the platform to scale up within Italy, and at a greater European level. This scale-up strategy is a result of their digitalisation plan developed with European DIGITAL SME Alliance and standardisation experts who ensured the process met the global standard oneM2M requirements. This experience of SMEs implementing innovative IoT solution can be adopted by other industries and sectors.

Source: D4SME SME Data Bank, European DIGITAL SME Alliance

An important pathway to address the digital skills gap of SMEs is to strengthen their links with key knowledge providers in their ecosystem, including Higher Education Institutions (HEIs) and research bodies, technology and service providers from the private sector, public training centres and innovation hubs. Proximity among the different actors in the digital skills ecosystem can facilitate collaboration and help close the SME skills gap, including by encouraging feedbacks and ideas from SMEs themselves, which can lead service providers to better understand the concrete issues that they are facing and tailor the training offer. The offer of digital trainings has increased significantly in recent years and for many SMEs the challenge becomes how to navigate the expanded supply and choose the trainings that are most suited to their needs and aspirations. For example, in Italy the system of *Istituti Tecnici Superiori* (ITS) offers post-diploma courses to provide advanced technical skills and enhance digital literacy to make workers ready for Industry 4.0 jobs. Likewise, discussants at the D4SME webinar on *Frontiers of Digital Learning* (Box 4) indicated that a close cooperation between SMEs and service providers is essential for reaching out to and communicate with SMEs, as governments alone do not always have direct access to smaller firms (OECD D4SME Initiative, 2021[16]).

Box 4. *The Frontiers of Digital Learning: bridging the digital skills gap,* **joint D4SME & Geography of Higher Education technical webinar**

The D4SME & Geography of Higher Education (GoHE) webinar on *The Frontiers of Digital Learning: bridging the SME digital skills* gap was held virtually on 30 June 2021 as part of the 2021 *OECD MSMEs Week.* It gathered over 126 participants from 41 countries. The GoHE initiative aims at understanding how Higher Education Institutions (HEIs) are generating value for their surrounding communities and networks. The GoHE and the D4SME initiative are led by the OECD Centre for Entrepreneurship, SMEs, Regions and Cities (CFE).

The moderated panel of international experts from higher education institutions (University of Primorska), large business (Amazon, Microsoft, Facebook, Wix), business associations (Confartigianato), non-traditional training providers (Sunway iLabs), and SMEs themselves, discussed the many innovative approaches that can improve availability and accessibility of digital skills for SMEs, across regions and cities.

The panellists emphasised how lack of skills is one of the greatest barriers to SME digital adoption. Most panellists convened that the lack of digital skills is often a result of SME resource constrains such as size, access to finance, lack of motivation to undertake or complete courses, awareness and time constraints. Particularly, there was a consensus that many SMEs are overwhelmed by the amount of choice on the market for digital skill training and development. The discussants suggested that SMEs need assistance to navigate the many choices to find the solution that best fit their needs. The heterogeneous nature of SMEs is important when addressing the digital skills gap as firms have different needs, and there are large sectorial differences. The discussion placed an important role on policy to reduce the SME digital skills gap. In particular, panellists called for governments and international institutions to provide financial and tax incentives for SMEs to undertaking trainings. The focus should not just be on upskilling or reskilling SMEs, but also on enabling SMEs to outsource and access the relevant digital skills within their ecosystems and communities.

Source: OECD D4SME Initiative, « The Frontiers of Digital Learning : bridging the digital skills gap » webinar, 30 June 2021, (https://www.oecd.org/going-digital/sme/events/Frontiers%20of%20Digital%20Learning%20-%20Key%20Highlights%20-%20June%202021.pdf)

3. SME Digitalisation in response to the COVID-19 crisis

This section discusses the impact of the COVID-19 pandemic on some key aspects of SME digitalisation and provides an overview of four policy areas that have emerged as priorities in the response to the crisis: the ability of SMEs to move online and establish a digital presence (e.g. digital marketing, e-commerce); the access of SMEs to fast and affordable digital infrastructure as an enabler of the digitalisation process; the uptake of teleworking digital tools and practices to continue operations and increase well-being; and the increasingly important role of digital security and data protection for SMEs. The section builds upon evidence from OECD and D4SME partners' sources, including research and surveys, on the D4SME databank of SME experiences, and on the insights from the D4SME policy dialogues on the impact and policy implications of the COVID-19 crisis.

SMEs have been hit hard by the sanitary crisis and the social distancing measures introduced in response to the COVID-19 pandemic. Since the onset of the pandemic in Spring 2020, 70-80% of SMEs have indicated that they experienced a drop in revenues and sales (OECD, 2021[1]). The disruption to cash flow and global value chains, sudden changes to supply and demand and the forced temporary closure of many brick-and-mortar businesses in response to the Non-Pharmaceutical Interventions (NPIs) have challenged SMEs' business operations. The rate of SME closures continued to rise in the first months of 2021 also among companies with at least a basic level of digitalisation.[4] SMEs tend to be more susceptible to negative economic shocks as they have a more limited access to finance, less liquidity reserves and a more concentrated demand and supply base. The vulnerability of SMEs throughout the pandemic represented a particular economic risk for those OECD countries in which the contribution of SMEs to the total value added is significant (Vodafone, 2020[17]; Facebook, 2021[18]; OECD, 2021[1])[OBJ].

The COVID-19 crisis has heightened the importance of SME digitalisation and served as an accelerator. For many SMEs, digital technologies have been instrumental in allowing the continuation of economic activity and the provision of essential services during the crisis. For example, remote working has become a necessity under the restrictions induced by the health crisis and has allowed many SMEs to continue operations. Strengthening the online presence on social media, online marketplaces and websites has been the only way for many businesses to continue serving their clients, including in industries traditionally based on proximity and contact, such as the tourism one (Box 5). Access to affordable and high-quality broadband networks and services for data transmission, including in remote and rural areas, has been a prerequisite for leveraging such digital solutions. Some of these topics have been the object of discussion and analysis during the second D4SME Roundtable in February 2021 (Box 6).

Box 5. Impact of COVID-19: The digital transformation of tourism SMEs

The tourism sector, a sector dominated by SMEs and micro-entrepreneurs, was amongst the hardest hit by the COVID-19 pandemic and social distancing measures. As a result of the partial or entire suspension of international flights, and the severe domestic travel limits, the global tourism value system had effectively shut down. OECD research estimates that international tourism declined around 80% in 2020.

The tourism sector has a whole had been undergoing a digital transformation in the 10 years prior to the pandemic. The widening reach of digital tools and systems has seen digitalisation in tourism go from a driver of marginal efficiency to an enabler of far-reaching innovation and change. Digitalisation opens up many opportunities for tourism SMEs through online platforms and mobile access transforming customer interactions; data technologies for tracking customer preferences and building ongoing relationships; advanced technologies including virtual and augmented reality; AI and IoT for task automation.

The up-take of digitalisation in the sector has significantly accelerated due to the pandemic, increasing the resilience of tourism SMEs in a post-COVID-19 era. For example, digital tools such as QR codes

---

[4] Facebook's Global State of Business survey, in which over 35 000 SMEs in 27 countries and territories were surveyed in February 2021, indicates that 24% of SMEs were closed in February 2021, an increase from 16% in October 2020. Companies' surveyed had an active Facebook page which would suggest at least a basic level of digitalisation in relation to digital advertising and client relations. The report highlights that this increase in closures was most prominent in Europe, in line with the stringent restrictions in the first half of 2021. Of SMEs operating in vulnerable sectors (wholesale and retail trade, food services, tourism) 63% reported a decline in sales performance compared to pre-pandemic conditions. Micro-SMEs and solo-entrepreneurs were also found to be significantly more likely to be closed than those with more than two employees (Facebook, 2021[18]; OECD, 2021[22])

and online ordering have widely helped keep some SMEs afloat in food and drinks service, facilities and attractions as businesses adjust to contactless and other regulatory changes.

For tourism SMEs, digital skills shortages and skills gap are the cause of a drag on digital transformation. It is also important for policy makers to address place-based challenges related to weak digital infrastructure.

SME Experience

We Are Amsterdam (the Netherlands) is a tourism SME that offers historical and cultural tours of the city of Amsterdam. In response to the local confinement regulations, particularly the travel restrictions halting international tourism, We Are Amsterdam introduced new digital elements to its offer. Throughout the pandemic, the firm ran virtual tours via videoconferencing platforms such as Zoom and launched an application for customers to explore and learn about Amsterdam interactively on their smartphones.

Source: Preparing the Tourism Workforce for a Digital Future (OECD, 2018[19]); D4SME SME Databank

---

Box 6. The second Roundtable of the OECD Global Initiative on "Digital for SMEs" (D4SME): SME Digitalisation and responses to COVID-19

The 2nd Roundtable of the OECD Global Initiative on "Digital for SMEs" (D4SME) was held virtually on the 3-4 February 2021. The 2nd Roundtable was attended by more than 250 participants from 48 countries, including 38 representatives from SMEs who shared personal experiences, challenges and success stores on the role digital tools played in their response to the pandemic.

The Roundtable was chaired by Stuart Nash, Minister for Small business of New Zealand and Chair of the D4SME Global Initiative. Robert Troy, Minister of State for Trade Promotion, Digital and Company Regulation of Ireland co-chaired the Roundtable, and Alan Griset, Minister Delegate to the Minister of the Economy, Finance and Recovery in charge of SMEs of France participated in the opening session.

The 2nd Roundtable focussed on how different types of SMEs can benefit from digitalisation and emerge from the pandemic more resilient than before. Three dedicated sessions were held on topics of particularly importance in the COVID-19 landscape:

- SMEs moving online: digital presence, e-commerce and digital security risks;

The session discussed the increased online presence of SMEs in response to the NPIs. For many SMEs engaging with e-commerce platforms for the first time there are many barriers that needed to be overcome: lack of digital culture, skills as well as the digital security risks.

- SMEs capabilities to access fast and affordable digital infrastructure;

SMEs access to fast and affordable digital infrastructure was central to their immediate response to the crisis. The discussion focussed on the importance of SMEs in remote or rural areas having access to reliable broadband infrastructure, as well as efficient traditional logistics such as the postal service.

- Digital tools to telework efficiently and increase wellbeing.

The shift to teleworking for many SMEs was indicated to be a lasting impact on their businesses. The discussion stressed that there needs to be an attention on the well-being of entrepreneurs to ensure an equitable and lasting transition to remote working.

The OECD report on *The Digital Transformation of SMEs* was launched as part of the Roundtable. The report illustrates recent trends in SME digital uptake, discusses digital security, online platforms, Blockchain ecosystems, and artificial intelligence, presents policy examples and provides recommendations on how to advance the SME digital policy agenda.

Source: (OECD D4SME Initiative, 2021[20])\

A large share of SMEs (62%) reported changing at least one feature of their business model in response to restrictions. There were also significant sectorial differences, with SMEs operating in the wholesale and retail trade indicating they were 70% likely to have changed a feature of their business operations compared to logistics at just 52%. For 26% of SMEs, the change related to the use of digital tools for the first time (Figure 5; (Facebook, 2021[18]; OECD, 2021[1])).

Figure 5. Changes made by SMEs since the start of the COVID-19 pandemic

Proportion of SMEs indicating uptake of new practices
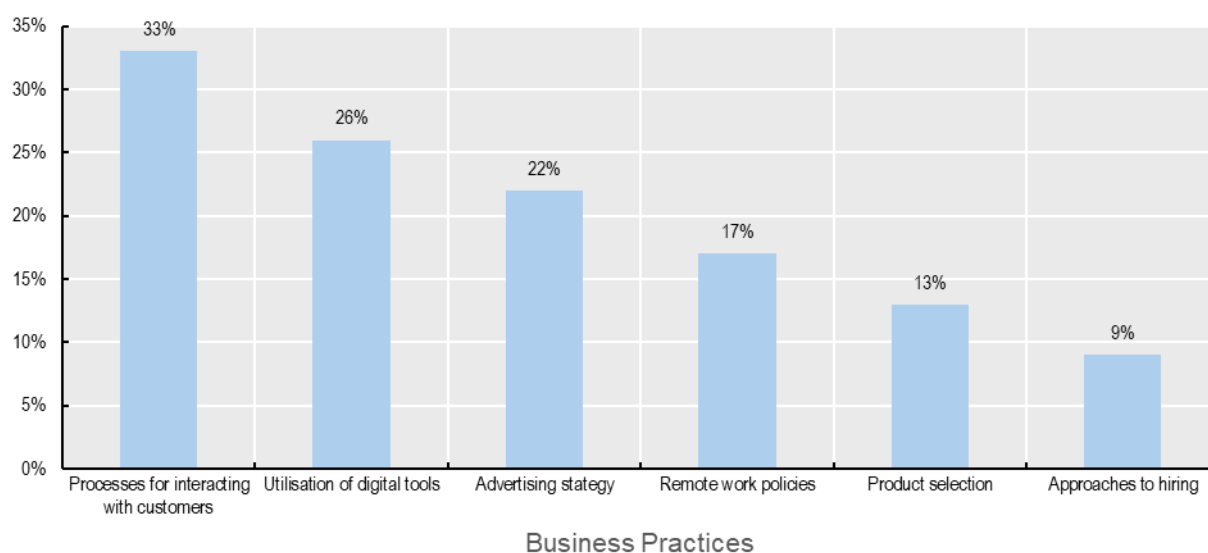
Source: Facebook Global State of Small Business Report (Facebook, 2021[18]), based on Facebook survey from February 2021.

The COVID-19 crisis has pushed many SMEs to increase their digital uptake in 2020 and 2021. Data gathered in a joint research initiative by the OECD, Facebook and the World Bank, show that between 25% and 62% of SMEs across OECD countries have increased the digitalisation of their business processes in 2020 (Figure 6) (Facebook, OECD, The World Bank, 2020[21]). The uptake refers to a large variety of new software applications or cloud solutions, including e-commerce, click and collect, online delivery, virtual events, e-banking or payments, video-conferencing (OECD, 2021[1]). In some cases, SMEs leveraged digital technologies to develop creative solutions to adapt effectively to the changing conditions, including in the health sector, transitioning rapidly to new productions or services in response to new demand (Box 7).

Box 7. Small business creativity helping to face COVID-19: some business cases

Small and Medium Enterprises are often praised for their "flexibility" and "adaptability" to changing conditions. For some SMEs across the OECD, the COVID-19 pandemic offered a testing bed for innovative solutions to perform their business functions in this difficult context, sometimes with the support of government programmes. The D4SME has analysed and given visibility to the experiences of new and small firms that have been proactive in developing new or updating existing business models. Many of them have leveraged digital solutions to make their processes more resilient and continue to deliver even under the strict social distancing measures that were put in place across the OECD. The paragraphs below illustrate some cases from the health sector, which was under particular pressure in this specific crisis:

- *O2matic ApS* is a Danish firm operating in the health services sector developing, producing and selling respiratory equipment with a focus on automatic oxygen therapy. Their device allows automatic oxygen therapy to be delivered to patients with the correct oxygen dosage, faster weaning off oxygen and lowers the risk of staff infection. *O2matic ApS* are updating their device so that it will be able to connect to hospital digital systems and provide local and central monitoring. In response to COVID-19, *O2matic ApS* changed the software on their devices to ensure they were able to treat COVID-19 patients at hospitals. In response to the social distancing measures, *O2matic ApS* distributors used Microsoft Teams to educate healthcare professionals about their systems. For *O2matic ApS,* digital security threats were the biggest barrier their business faced throughout the pandemic. *O2matic ApS* received support from The Innovation Fund in Denmark to support their development and were part of Microsoft's Partner Programme.

- *Baltics 3D* (Latvia) is a start-up specialised in 3D printing that developed a model for printing integral masks for healthcare professionals. The start-up built a decentralised supply chain across the country, involving local manufacturers, e.g. in the metallurgical industry, or advertising agencies, that were located in cities hosting the largest hospitals of the country, and that had the ability to develop the necessary parts. The 3D printing model and the supply chain made it possible to deliver rapidly masks to health professionals across the country.

- *Ariniti* (Belgium) is a health-tech start-up that used artificial intelligence to create 'Healthbots' and provide people potentially infected with COVID-19 with advice or recommendations depending on their symptoms. This self-assessment tool was created in cooperation with Microsoft. Throughout the pandemic, the Healthbots were developed further to streamline the on-boarding process of patients at hospitals.

- *ThePower House GmBH* (Portugal) is a textile SME that responded to the COVID-19 crisis by digitizing cutting patterns for face masks. *ThePower House* posted these patterns under creative commons license online in order to allow anyone to create their own face masks. *ThePower House* developed a specific software to enable designers to turn their artworks into digital pattern and be printed on textile.

- *Vaccineguard* is a software developed by *Guardtime* (Estonia) a digital platform that shares vaccination certificates secured on the Blockchain. *VaccineGuard* was established to assist the World Health Organisation (WHO) and the Estonian Government to carry out an effective vaccination programme and track the individual's vaccination status, while taking personal privacy into consideration.

Source: (OECD, 2021[1]); OECD Digital for SMEs databank; SME United; European Association of Guarantee Institutions (AECM)

Figure 6. A large share of SMEs increased their uptake of digital tools in 2020

Percent of SMEs increasing their use of digital tools in selected OECD countries
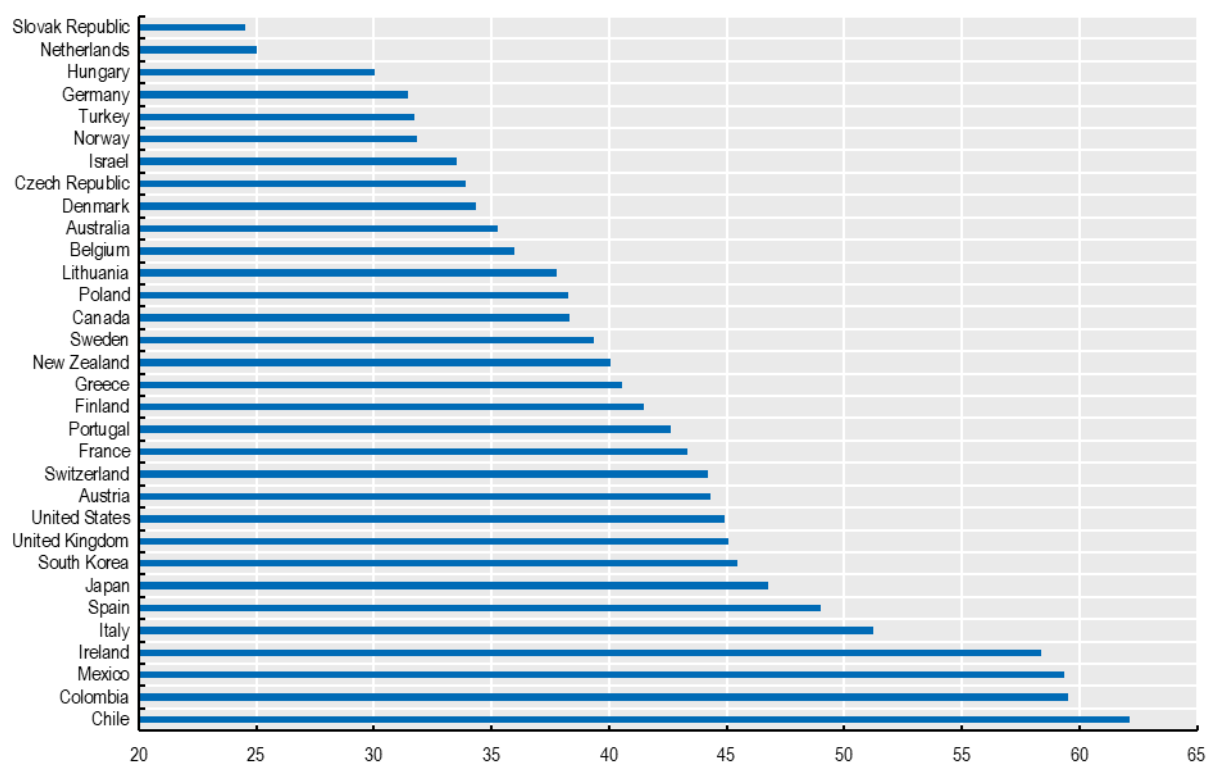
Source: OECD SME and Entrepreneurship Outlook 2021 (OECD, 2021[1]), based on Facebook/OECD/World Bank survey Dec. 2020.

Nonetheless, size still affected digital adoption with data showing that larger firms digitalised more in response to the pandemic. In OECD countries, around 40% of micro-firms (0 to 9 employees) increased their use of digital technologies during the pandemic, while this share increases to 50% if considering small firms (10-49 employees) and to 60% if considering medium firms (50-250 employees; Figure 7) (OECD, 2021[1]).

Figure 7. Increase in digital adoption since the pandemic changes with size

Share of respondent companies, by size

Source: OECD SME and Entrepreneurship Outlook 2021 (OECD, 2021[1]), based on Facebook/OECD/World Bank survey Dec. 2020.

The COVID-19 crisis has exemplified how differences in digital maturity affect SMEs' ability to recover. Digital tools enabled many businesses to stay in operation despite social distancing measures, work remotely, sell online and overcome disruptions to supply and demand. SMEs that were already engaging with digital tools had the capabilities to respond more efficiently to the pandemic business conditions. Vodafone's research illustrates that SMEs that had pre-existing digital features of their business model were better equipped to identify new business opportunities. Figure 8 indicates that highly digitised businesses (use of 8 digital tools within the business) were identifying new business opportunities throughout the pandemic at double the rate of the least digitalised (OECD, 2021[3]; Vodafone, 2020[17]; Facebook, 2021[18]; OECD, 2021[22]).

Figure 8. The level of digitalisation affects SMEs ability to adapt to the crisis

Proportion of SMEs indicating that COVID-19 has presented new opportunities (y-axis) for the business vs. the number of digital technologies adopted by the SME (x-axis)

Proportion indicating presence of opportunities
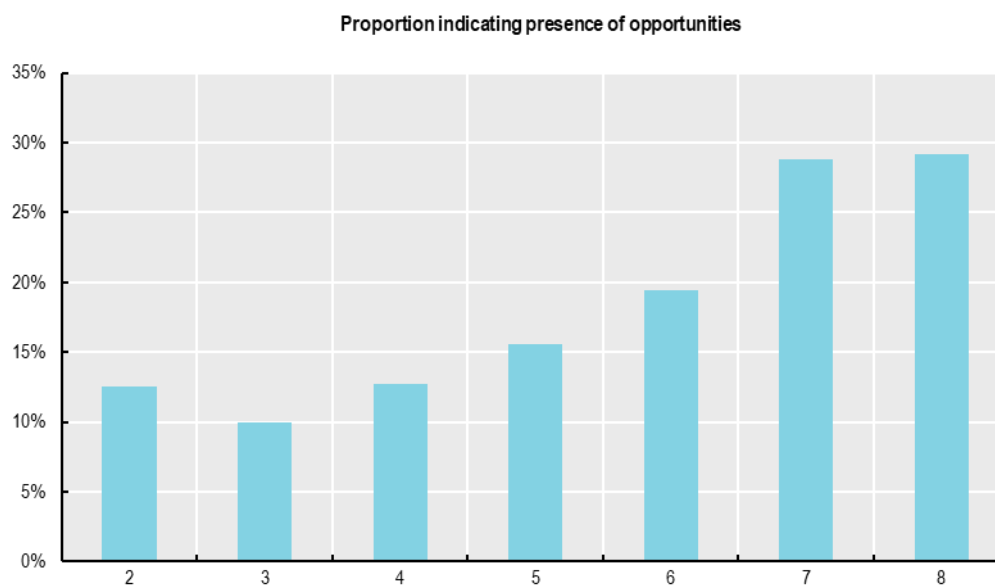
Note: Vodafone commissioned Context Consulting to survey 1,200 SMEs in the UK, Spain, Germany and Italy.
Source: (Vodafone, 2020[17])

Differences in the uptake of digital technologies in response to the pandemic by SMEs emerged between countries and sectors. Countries with stringent social distancing measures, such as Chile and Colombia, experienced a higher growth rate of SMEs engaging with digital technologies (Figure 9). Facebook Global State of Small Business survey from February 2021 indicates that SMEs operating in middle-income countries were more likely to adapt at least one feature of their business model than those in higher-income countries. Similarly, businesses in digitally intensive sectors have accelerated their digital transition at a faster pace compared to those operating in more traditional sectors. This widening sectorial digital gap needs to be addressed by policy, as the pre-existing barriers, such as in terms of digital skills gap, limited access to finance and lack of digital culture amongst SMEs, remain (OECD, 2021[1]).

Figure 9. Where containment measures were more stringent, more SMEs went digital

Share of SMEs that increased digitalisation in 2020 (%) vs. the stringency of containment measures (index)
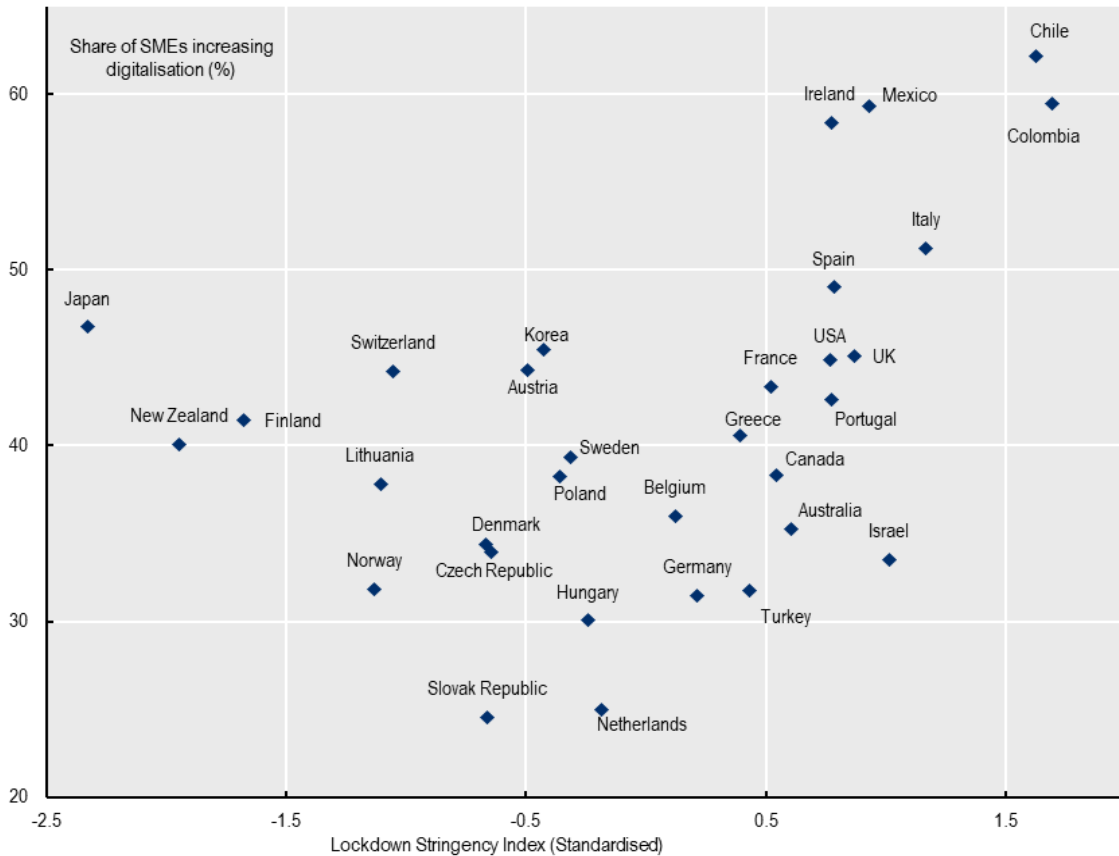
Note: The share of SMEs increasing digitalisation is the share of SMEs in a country who stated that they did increase their use of digital technologies since the start of the COVID-19 crisis. The Lockdown Stringency Index is a standardized version (by country) of a Stringency Index, which is an aggregate indicator of the strength of different lockdown measures.
Source: (OECD, 2021[1])

A significant share of SMEs (some 40%) are convinced that COVID has permanently changed their use of digital technologies. However, an important minority (some 30%) is not. In many instances, the COVID-19 crisis forced irreversible investment into digitalisation and proved the use-case of digital tools to many previously hesitant SMEs. The acceleration in digital adoption caused by the pandemic is poised to last, according to a large share of interviewed firms. More than 40% of firms are convinced of the lasting shift in digital practice, and the effect seems to be stronger the larger the firm (Figure 10). However, on the other hand, about 1 out of 3 micro and 1 out of 5 medium companies think that the change was contingent to the emergency situation and that it will not last, while about 1 out of 5 of firms are not expressing a strong position (Facebook, OECD, The World Bank, 2020[21]).

Share of respondent companies, by size
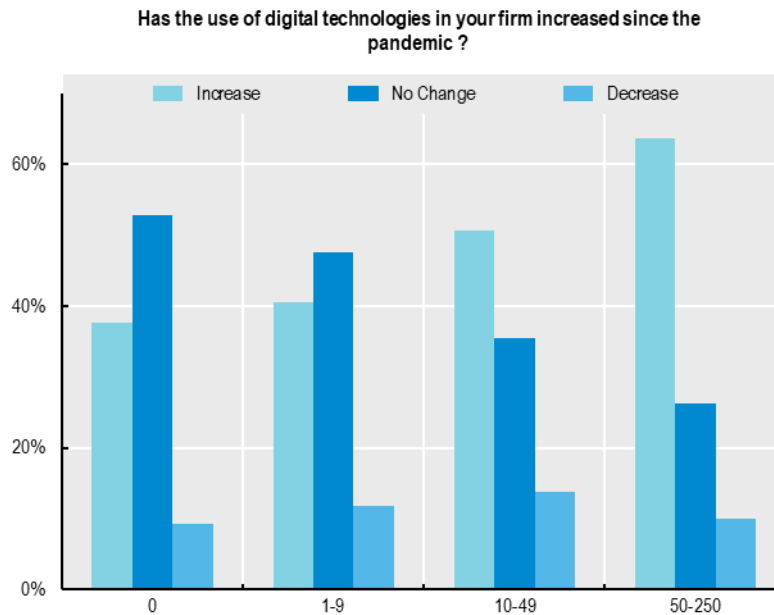

Will COVID permanently change the use of digital technologies in your business?
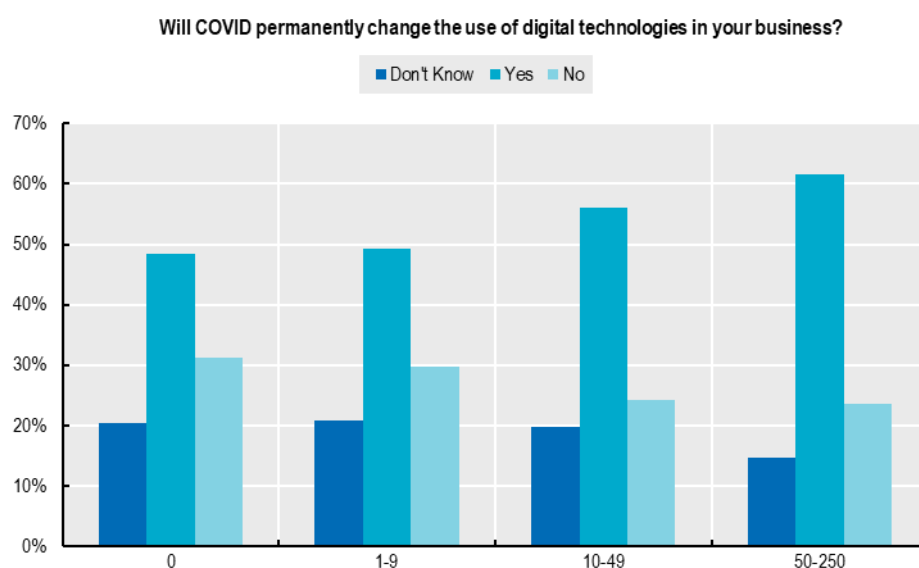
Source: OECD SME and Entrepreneurship Outlook 2021 (OECD, 2021[1]), based on Facebook/OECD/World Bank survey Dec. 2020.

3.1. SMEs moving online: digital presence, digital advertising and e-commerce

SMEs significantly increased their online presence in response to the COVID-19 containment measures implemented by governments. Entrepreneurs and SMEs across the globe increased their digital presence, selling online with e-commerce platforms or through personal websites, engaging with social media and digitally advertising. Amazon reported that between June 1 2019 and May 31 2020, the average sales of European selling partners (comprised of mostly SMEs) increased from 70 000 euros to 90 000 euros. This increase, despite the global economic downturn, is indicative of the shift to e-commerce in response to NPIs. For many firms this forced push online was their first experience connecting with consumers digitally. Facebook's survey conducted in February 2021 reported that selling goods and services to customers, digital advertisement and communication were the three most frequented use cases of digital tools for SMEs (OECD, 2021[3]; Facebook, 2021[18]; Amazon, 2020[23]).

SMEs who engaged in e-commerce or digital advertising reported a higher level of revenue throughout the pandemic, compared to those with lower rate of digital sales. Surveys indicate that for many small firms' online sales was the main source of revenue throughout the pandemic period. As well as allowing firms to continue operating in the face of NPIs, selling online enabled many SMEs to access new customers and markets, cost-effective logistics and efficient business operations. SMEs who sold more than 75% of their products online reported a smaller decline in sales compared to those that sold less online (OECD, 2021[1]; OECD, 2019[24]; Facebook, 2021[18]).

The pre-existing barriers to going online remain for many small firms. Despite the benefits, SMEs can reap from selling online and creating a digital presence, challenges persist. SMEs lack the capabilities and capacity compared to larger firms, including to harness the potential of the platform economy. Online platforms can have fee structure that are difficult for SMEs to navigate, additional hidden fees and lock-in risks. Furthermore, major disruptions to traditional infrastructure and national logistics systems such as the postal service and transport services contributed to delivery delays throughout the pandemic. This posed

a challenge to SMEs who often rely on customer service as their competitive advantage over large firms (OECD, 2021[3]).

Online presence and use of e-commerce tools are likely to be among the lasting changes to business operations for SMEs. Wix, an Israeli DIY website design platform enabling entrepreneurs to create their own website with e-commerce capabilities, monitored the uptake of their services throughout the pandemic period. Wix saw a drastic increase in the number of new worldwide monthly users, with the peak being March 2020 – May 2020. Wix's data indicates that there was a 32% increase in traffic per site at the peak of the social distancing measures and a 69% increase in online commerce transactions per site.

SMEs selling online is here to stay. Wix found that in the period following the stringent lockdown measures (January 2021- March 2021), the rates of website traffic and e-commerce numbers remained elevated at 30% and 60% respectively, compared to pre-pandemic. Even as economies begin to recover, the consumer demand to buy online has remained high and in the last decade the share of firms selling online has continued to increase across all size classes (Figure 11).

Figure 11. The share of firms using e-commerce has increased in the past decade, across all sizes

Percentage as a share of firms, by size. Average of 32 OECD countries.
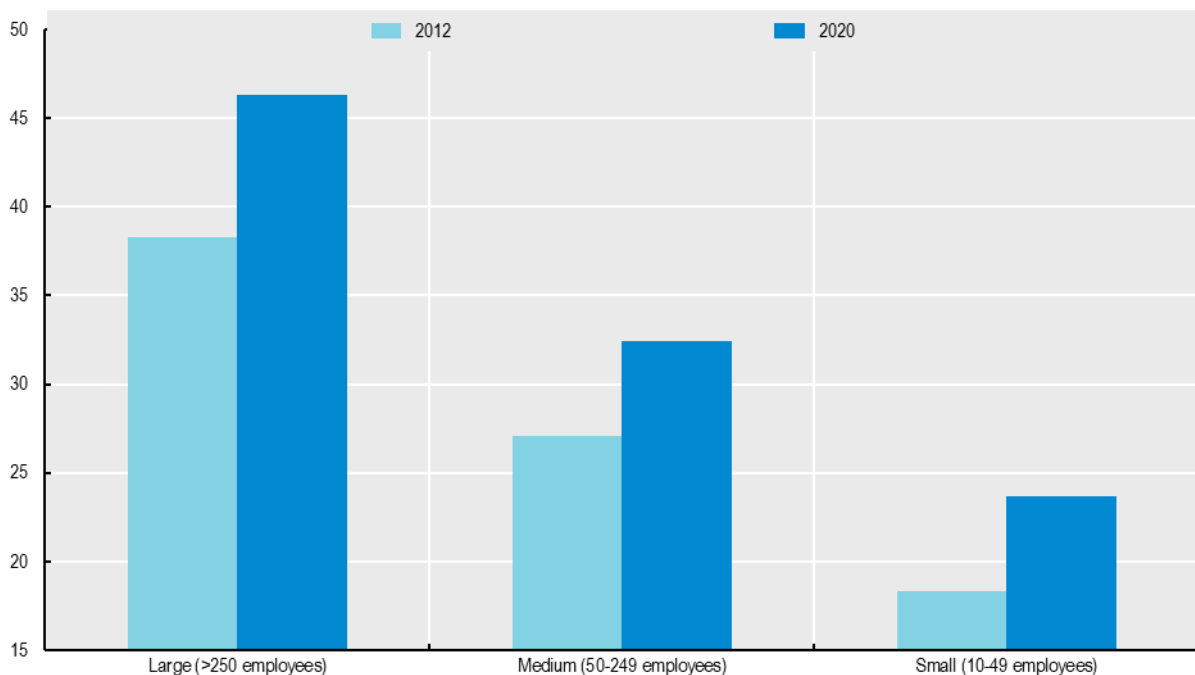
Note: OECD member countries included: Australia, Austria, Belgium, Canada, Colombia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Turkey, United Kingdom. Data for Turkey are from 2010 instead of 2012. Data for Australia, Canada and Korea are from 2019 instead of 2020, and using a different methodology. Data for UK are from 2019 instead of 2020. Data for Colombia are from 2018 instead of 2020. Data for Japan are from 2018 instead of 2020, and using a different methodology. Data for small business in Greece and for medium businesses in Portugal are from 2019 instead of 2020.
Source: OECD calculations based on OECD ICT Access and Usage by business database (accessed September 2021)

Box 8. SME Experiences: Going online in response to the COVID-19 crisis

In response to the COVID-19 crisis, SMEs, including many that lag far behind larger firms in the digital transition, were pushed to move activities online. This online presence was far-reaching; from selling their products and services through e-commerce platforms, connecting with existing clients and suppliers and engaging new customers through social media to simply creating a website for the first time. The D4SME databank, which gathers business cases of SME digital transformation, provides examples of the resilience of digital and non-digital SMEs during the COVID-19 crisis.

- *Tesela Natura* (Spain) is a producer of honey. In response to the COVID-19 pandemic, they began focussing solely on e-commerce channels, particularly selling their product on Amazon. They have been able to reach new markets and consumers even throughout the crisis, and can analyse the behaviour of their customers through the Amazon platform. *Tesela Natura* also increased their investment into digital marketing and their use of social media. *Tesela Natura* benefited from the Junta de Extremadura's regional governments support to access IT and e-commerce skills.

- *HolyBelly* (France), a restaurant and café located in Paris, spurred on by the social distancing measures, launched its own website with click and collect capabilities for deliveries, as well as leveraging the local food delivery platforms to continue operations throughout the lockdown.

- *Five Way Cellars* (Australia), a wine and liquor retailer, increased its online presence and launched an e-store, enabling the firm to continue operations throughout the COVID-19 pandemic. After restrictions in Australia eased, the focus still remains on the e-store to reach new customers in untapped markets.

- *Rose Bikes* (Germany), a bicycle retail store and manufacturer, developed a streamlined e-commerce store that connects its offline and online retail channels. This allowed Rose Bikes to rely on its e-commerce capabilities to connect with suppliers as well as new and existing customers throughout the COVID-19 crisis.

- *Circus bakery* (France), a bakery with one brick-and-mortar store, launched a retail website 24 hours after the closure of this sole location. Its website offers delivery and "click & collect" services, enabling the bakery to continue operating during the crisis.

- *Claudio Bettini Design* (Italy) designs and produces interior decoration objects. The firm has been in operation since October 2019, and in response to the pandemic shifted their focus to selling online. *Claudio Bettini Design* after participating in Amazon's 'Accelera con Amazon' training programme has transitioned a digital model, selling her products on Amazon's platform. The programme, including a boot camp in collaboration with Confapi and MIIP Politecnico di Milano improved Claudio Bettini's digital skills. The access to the relevant data on the e-commerce process and consumer behaviour has significantly changed their business model.

- *Natoora* (United Kingdom), a wholesaler of fresh produce, radically changed its business model from business-to-business (B2B) to business-to-consumer (B2C), because it could no longer sustain activities as a wholesaler to restaurants and businesses, many of which had to shut down due to containment restrictions. Using a newly launched website, the company has delivered its product to households and individual customers.

- *SkyTing Yoga* (United States), a New York based yoga studio, launched its digital platform in early 2020, "SkyTing TV" as a complementary service to their in-person business model. This has become its main source of revenue along with a new offering in which the firm streams classes via Instagram or on Zoom for a donation using the payment platform Venmo.

> - *Okoloco GmbH* (Germany) is a 'one-stop shop' for questions related to heating systems, implemented in Lower Saxony, Germany. Services include price comparison, installation, maintenance and repair. In response to the pandemic, *Okoloco GmbH* changed its business model to ensure that the entire client service can be delivered virtually. By digitizing essential steps in the installation or maintenance of home heating systems, *Okoloco GmbH* have continued to grow throughout the pandemic despite lockdown regulations.
> - *Relevance* (Monaco) is a digital marketing agency that adapted to the COVID-19 regulations by introducing a policy of teleworking for all employees, continuing operations and producing output at a pre-COVID-19 rate. It adopted digital tools to assist in teleworking such as Slack (workplace messaging platform) and Monday.com (workflow management software). The firms plans to continue offering partial teleworking as an option for its employees.
>
> Source: (OECD, 2021[1]) 2nd D4SME Roundtable ; SMEs Go Online or Go Home Webinar; D4SME SME Databank

3.2. SMEs' capabilities to access fast and affordable digital infrastructure

SME access to fast and affordable digital infrastructure is a prerequisite for a digital transformation. Digital infrastructure, such as fast broadband is required by firms to fully capitalise on the benefits digital technologies can provide. High quality internet is particularly important for small firms who wish to continue along their digital journey and engage with advanced technologies such as Blockchain, Artificial Intelligence of Internet of Things (IoT).

To continue business operations in the face of COVID-19 containment measures, SMEs have required strong connectivity. For SMEs that moved online in response to the crisis, fast internet connection has proved essential to engage with online platforms, sell online and work remotely. Cloud computing (CC) for example, a digital solution that can minimise SME overhead costs and facilitate effective telework, requires strong digital infrastructure (Vodafone, 2020[17]).

However, the size-related gap to access fast internet connection that existed pre-pandemic remains. Figure 12 highlights the businesses that have access to fast internet connection (greater than 30 Mbit/s) across OECD countries. Although the majority of firms of all size have access to broadband connection, there is a significant gap between small firms and large firms in their access to fast broadband. Only 45% of small sized firms have access to high-speed broadband, compared to 81% of large firms. This gap has been increasing throughout the period leading up to the pandemic (OECD, 2021[25]).

Figure 12. Businesses with access to broadband at least 30 Mbps

Average of enterprises across OECD economies with ten or more persons employed, 2019 or latest year available, as a percentage.
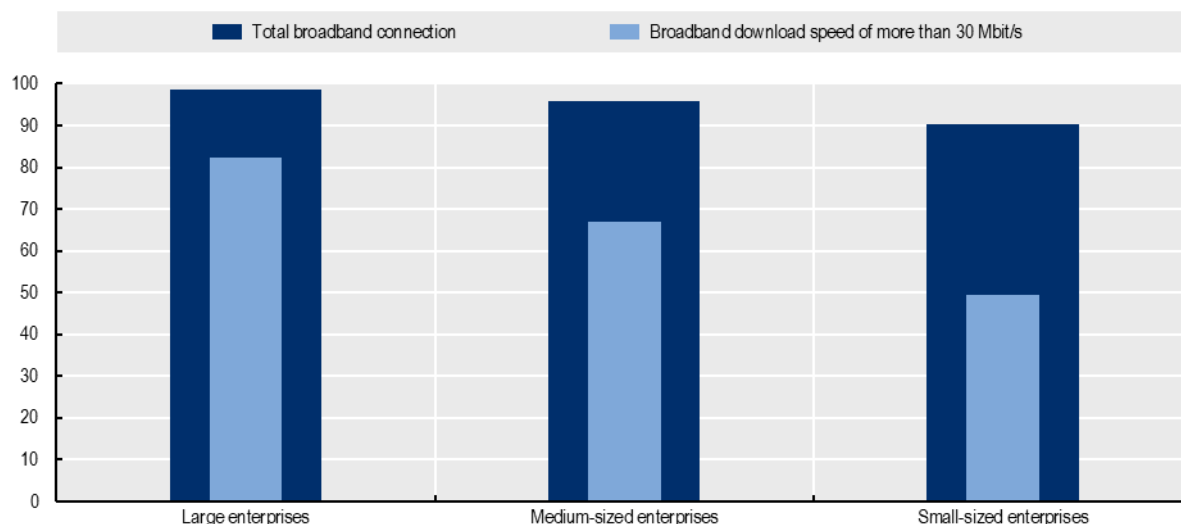
Note: Mbps = Megabits per second. Small-sized enterprises are defined as firms employing between 10 and 49 persons, medium-sized firms between 50 and 249 employees, and large firms with more than 250 employees.
Source: (Bianchini and Kwon, 2021[14])

COVID-19 further highlighted the importance of equal access to digital infrastructure for rural and remote areas, as well for low income or marginalised groups within society. Identifying the digital infrastructure bottlenecks is essential for an inclusive recovery from the pandemic, as currently there is unequal access to high-speed internet between regions and countries. The *2nd D4SME Roundtable on SME digitalisation in response to COVID-19* highlighted that ensuring broader connectivity could have an impact on the decision of entrepreneurs as to where to open their business, creating new opportunities for remote areas and regions that have experienced economic decline (OECD D4SME Initiative, 2021[20])(Box 6).

Another important aspect that emerged from D4SME dialogues is the importance of access to functioning logistic infrastructure. The pandemic put under severe stress postal services creating challenges to SMEs in managing their deliveries from suppliers and to customers. In some countries, the government has actively supported Small Businesses selling online: in Korea the Ministry of SMEs signed a Memorandum of Understanding with some of the country's largest shipping companies to secure freight space to exporting SMEs selling online (Box 11, (Bianchini and Kwon, 2021[14])). In some European countries, large e-commerce platforms have provided support to entrepreneurs to start, set up and manage their delivery business that would then help them to deliver packages on team throughout the markets they serve. As an example, Amazon's Delivery Service Partner (DSP) programme provided entrepreneurs with access to the company's delivering technology, discounts and hands-on training while guaranteeing volumes from Amazon sellers (Amazon, 2020[23]).

3.3. Digital tools to telework efficiently and increase wellbeing

The use of digital tools to telework increased significantly as a result of COVID-19 and social distancing measures. Before COVID-19, remote work was only practiced by a limited number of firms (Ker, Montagnier and Spiezia, 2021[26]). Facebook's Global State of Business survey indicates that 17% of SMEs have introduced teleworking policies in response to COVID-19. As illustrated in Figure 13, survey

data from the European Foundation for the Improvement of Living and Working Conditions reports a stark increase across all EU countries. The increase is further exemplified by the surge in the use of video-communication platforms in response to the pandemic. For example, Microsoft reported that Microsoft Teams continued to grow extremely rapid since the beginning of the pandemic: from 44 million daily active users (DAU) in March 2020, to 115 million in October 2020 and 145 million in April 2021 (OECD, 2021[1]; OECD, 2021[27]; OECD, 2021[22]).

Figure 13. Levels of telework have increased throughout the COVID-19 period

Share of respondents who started to work from home before the pandemic and because of it, as compared to the share of respondents that worked from home several times a month before.
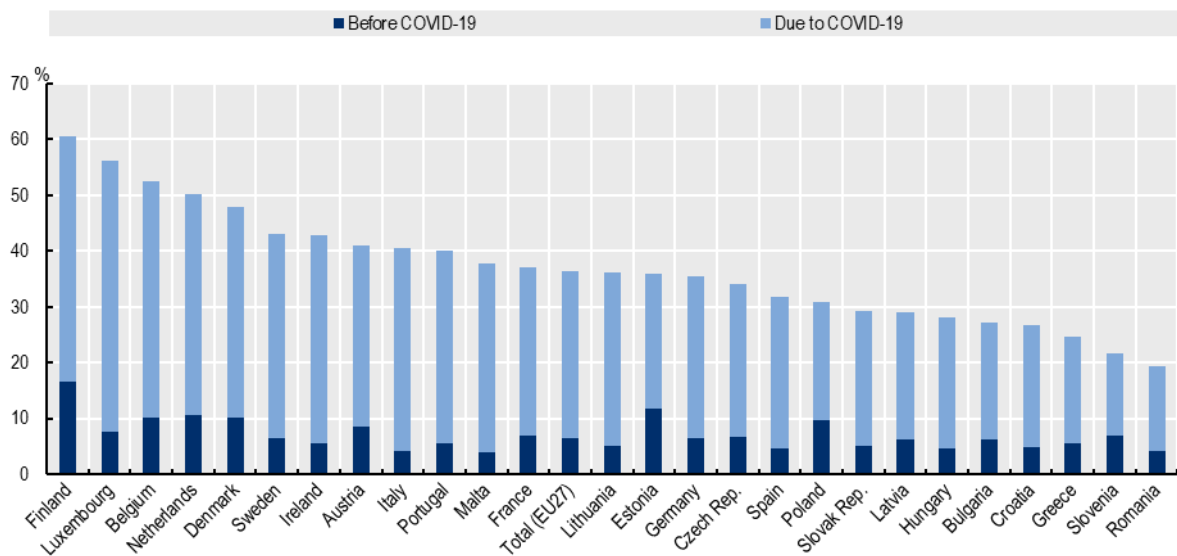
Note: The data show the share of 'yes' for respondents in the EU27 when asked: Have you started to work from home as a result of the COVID-19 situation? and the share of 'several times a month' for respondents when asked: How frequently did you work from home before the outbreak of COVID-19? Lower reliability: Latvia, Malta, Netherlands and Sweden.
Source: (OECD, 2021[1])European Foundation for the Improvement of Living and Working Conditions, http://eurofound.link/covid19data.

Remote working and the use of digital tools to telework can increase the productivity of SMEs. SMEs at the 2nd D4SME Roundtable shared their experience with teleworking, highlighting how in many instances remote working was cost and time efficient (Box 6). In the longer term, a shift to teleworking may also result in the reduction of fixed costs and large investments such as for office space. SMEs also reported benefits to their work-life balance, with remote working providing employees more flexibility. (OECD D4SME Initiative, 2021[20]; OECD, 2020[28]).

Smaller firms experienced greater challenges adopting remote work conditions than larger businesses. The inability of SMEs to adapt to teleworking conditions may be due to traditional barriers to digitalisation such as access to reliable broadband connectivity and internal resource gaps such as skills or finance. This may have longer-term effect, as SMEs who cannot accommodate teleworking may fail to attract skilled talent. This may further deepen the SME digital lag (Facebook, 2021[18]; OECD, 2020[6]).

Teleworking practices were more readily adopted by SMEs operating in specific sectors. Facebook's survey reported that remote working was more common in certain sectors, such as in ICT. Whilst only 17% of SMEs responding to the survey ("Global State of Small Business: Insights into women-led and minority-led businesses in early 2021") indicated a shift to teleworking as a result of the pandemic, 28% of firms operating in the ICT sector adopted remote working policies (Facebook, 2021[18]).

Teleworking will be a long-term change to the business environment. According to Vodafone's survey, for 44% of businesses remote working practices, enabled by digital technologies, will be a lasting policy in the post-pandemic business environment (Vodafone, 2020[17]).

However, the pre-pandemic regulatory framework concerning teleworking remains a barrier for SMEs to transition to remote working seamlessly. The discussion from the 2nd D4SME Roundtable revealed the need to better reflect the new centrality of teleworking conditions in labour relations, workers' rights and safety in the workplace. The profound changes on the organisation of economies and societies will require a holistic approach to policymaking. A demand to focus on the human implications of the uptake of these digital tools also emerged from the discussion, which also stressed the need to avoid a 'one size fits all' policy model, recognising that needs and barriers to effectively telework differ across individuals (OECD D4SME Initiative, 2021[20]).

3.4. Digital Security and Data Protection for SMEs

Increased reliance on digital technology throughout the COVID-19 period also intensified the digital security risk, calling for SMEs to increase their cybersecurity understanding. Many SMEs moved online in response to NPIs for the first time during the pandemic, and at an unprecedented pace. As discussed during the *Digital Security and Data Protection for SMEs* policy dialogue (Box 9), SMEs are less proactive in protecting their data and not as prepared to face cybersecurity threats. This vulnerability and lack of digital security business strategy was exploited by hackers throughout the pandemic (OECD, 2021[3]).

SMEs are less prepared for digital security attacks than larger firms. SMEs tend to invest less in their digital security and in general possess less digital security knowledge and skills than larger firms. Figure 14 shows the spread between SMEs and large businesses in formal ICT security policy, with the average gap between large and small-sized businesses at 45% across OECD economies (OECD, 2021[3]) (OECD, 2019[2]).

The effects of a digital security attack on an SME can be disastrous. SMEs are at risk of severe economic and reputational loss because of a cyber-breach. SMEs vulnerability to digital security attacks increases significantly as they go online, exposing supply chains and creating back-door entry points for larger firms and governments. This places them at risk of becoming weak nodes in hyper-connected infrastructure systems (OECD D4SME Initiative, 2021[20]) (OECD, 2021[3]).

The issue of SME digital security also includes the perspective of SMEs' data governance. The use, access and protection of data by SMEs and the role policy can play in ensuring firms prosper from the data economy is central to the discussion around SME digitalisation. This theme is being further explored by the OECD through its *Going Digital* project, whose 2021-22 programme focuses on data governance for growth and well-being.

Figure 14. Businesses with formal ICT security policy

As a percentage of enterprises with ten or more persons employed, 2019 or latest year available
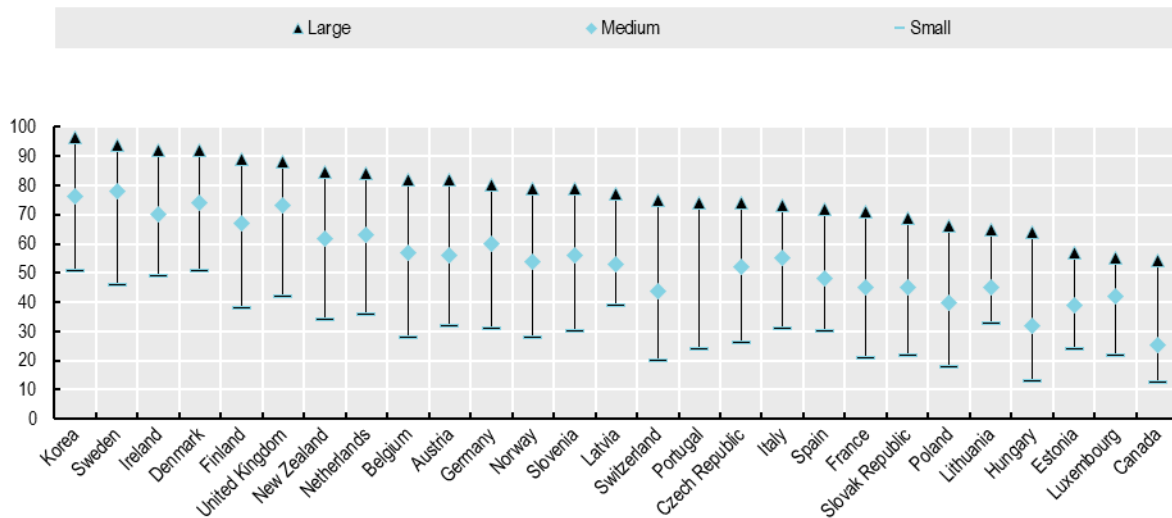
Note: Data on Canada, Korea, New Zealand and Switzerland are from the OECD ICT Access and Usage by Business dataset, with indicator on "Businesses with formal policy to manage ICT privacy risks". Data on Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden and United Kingdom are from Eurostat ICT usage in enterprises dataset, with indicator on "Enterprises have document(s) on measures, practices or procedures on ICT security". Data on medium-sized businesses in Portugal not available.
Source: OECD (2021[25]), ICT Access and Usage by Businesses (database), http://oe.cd/bus (accessed on 03 May 2021) and Eurostat (2021[29]), ICT usage in enterprises, https://ec.europa.eu/eurostat/web/main/data/database (accessed on 03 May 2021).

Box 9. Digital Security and Data Protection in SMEs: how to ensure SMEs are less vulnerable for a post-COVID digital world?

The D4SME webinar on *Digital Security and Data Protection in SMEs: how to ensure SMEs are less vulnerable for a post-COVID digital world* was held virtually on 29 October 2020. There were over 70 participants, from 35 different countries. The diverse range of panellists included a representative from Digital SME Alliance, the Australian government to representatives from two cybersecurity technology providers – one an SME itself.

The webinar was organised in the light of an increased SME vulnerability to digital security risks following the shift online throughout the COVID-19 restrictions. As SMEs connect to the digital world and move towards new digital solutions, they will need to effectively manage cyber-risks to reap the benefits of the digital transition. In the context of the COVID-19 pandemic, more businesses have been forced to operate online than ever before, and their reliance on digital infrastructure, cloud computing and software has increased, as the intensity of cyber-attacks. Many SMEs lack the awareness, resources or expertise to assess their digital risk exposure and to implement appropriate prevention and remediation measures which are more common among larger. The risk is particularly pronounced in sectors where SMEs tend to process significant volumes of personal – and valuable – data, such as professional services, healthcare and retail trade.

Source: OECD D4SME Initiative, « Digital Security and Data Protection webinar, 29 October 2020, (https://www.oecd.org/going-digital/sme/D4SME%20Digital%20Security%20and%20Data%20Protection%20Webinar%20Summary%20Record.pdf)

Digital security is a significant challenge holding SMEs back from engaging with new technologies. Data show that SMEs are less likely to make digital risk asessments, less likely to have insurance against ICT security incidents, and less likely to be aware of their obligations regarding digital security (OECD, 2020[6]). The New Zealand government's Computer Emergency Response Team (CERT NZ) 2021 survey of SMEs found that 54% of respondents saw digital security as a concern, whilst only 45% have strategies in place to prevent a cyberattack. For New Zealand small businesses, managing digital security risks is one of the biggest barriers to going online (CERT NZ, 2021[30]). In the 2nd D4SME Roundtable, SMEs and Entrepreneurs shared their experiences of managing their firm's digital security strategy whilst going online at an accelerated pace in response to the pandemic. Many indicated that they had no digital security practices in place and relied on the security of large platforms and third party technology providers (OECD D4SME Initiative, 2021[20]).

SMEs tend to outsource their digital security management. SMEs tend to delegate responsibility for their digital security to external third parties, such as by hiring external security consultants or purchasing digital products or services where the designer makes the security design choices. Although this can be resource efficient for many SMEs, there are risks associated with this such as reliance on the digital security of third party providers and complicated data policies that SMEs may not fully understand (OECD D4SME Initiative, 2021[20]; OECD, 2021[3]).

4. 'To build back better': policies for a digital recovery, towards greater sustainability and resilience

The third section of the paper focuses on the actions taken by OECD governments to support the digitalisation of SMEs and "build back better" after the crisis. It presents an analysis of the SME digitalisation dimension in the "recovery packages", including an estimate of the financial resources pledged to such programmes (in absolute value and share of total spending)[5]. The section then delves more specifically on key topics that have emerged as priority areas of analysis and action through the D4SME Policy Dialogue, as the shift to e-commerce, digital skills training, connectivity of local ecosystem, inclusion of marginalised groups, and support to well-being and mental health in SMEs. To complement this picture, the section also presents the initiatives and programmes of D4SME private sector partners specifically aimed at sustaining the digitalisation of SMEs, including in cooperation with governments. The section ends with a brief focus on the increasing policy attention on the "twin transition" towards sustainability and digitalisation of SMEs.

---

[5] A comprehensive analysis of the "SME-related policies" within "recovery packages" is included in the 2022 edition of the OECD SME Financing Scoreboard (OECD, Forthcoming[32]).

Policy plays a focal role in enabling SMEs to adapt their business models and practices to the digital economy. Even before the pandemic, SME digitalisation was high on the policy agenda across OECD countries and beyond. This focus has only intensified, with governments introducing recovery tools and legislations aimed at enabling SME digitalisation, as well as newly designed instruments and others that build upon pre-pandemic policies (OECD, 2021[22]).

According to OECD research, there is a large mix of policy approaches targeting SME digitalisation and, in some areas, diverging viewpoints on how to unleash their digital potential. The heterogeneity of the SME population and the diversity of their business ecosystems add to the complexity in designing effective policy. Some countries seek to mainstream SME policy considerations in other policy agendas, others target SMEs, with instruments often tailored to specific places or sectors. In some countries, policy strategies focus on financial support, whilst others focus on consultancy and non-financial support, or a mixture of the two approaches. Similarly, there is a growing focus on the diffusion of targeted technologies such as AI or Blockchain, with tailor-made instruments for specific digital tools (OECD, 2021[3]).

OECD governments responded to the COVD-19 crisis with unprecedented speed and action. Governments developed a wide range of support measures to provide SMEs with rapid support. The most popular policy measures put in place to cushion the initial blow were loan guarantees, wage subsidies and deferrals of payments. These stimulus packages initially focussed on financial support, as many firms were unable to operate their businesses as usual under pandemic NPIs. Over time, the policy focus has gradually shifted to more structural measures (OECD, 2021[22]).

In the context of COVID-19 recovery plans, the digitalisation of SMEs is a high policy priority for OECD governments. Throughout the pandemic period, there has been a steady rise in the number of countries adopting support for SME digitalisation. Across OECD governments, diverse policy tools have been implemented, such as vouchers and grants for business digitalisation, strengthening e-government services to businesses, enhancing the digital re-skilling of entrepreneurs, improving access to digital infrastructure and initiatives to facilitate the uptake of e-commerce and teleworking technologies. Instances of such instruments and initiatives have increased since the onset of the pandemic. OECD research indicates that whilst in July 2020 only 13 of the 60 countries tracked had SME digitalisation support measures in place, in Q1 2021 this rose to at least 24 countries. This increased focus on SME digitalisation in the 'build back better' recovery packages is linked to the central role digital tools have played in response to the NPIs (OECD, 2021[1]).

SMEs that received government support were more likely to increase their levels of digitalisation than SMEs that did not receive the support. On average, within OECD countries, between 20-40% of SMEs received government support at one point throughout 2020. Figure 15 illustrates the type of support provided, whether in the form of additional spending and forgone revenues or liquidity support through equity, loans and guarantees. SMEs that received government support were 8% more likely to increase their levels of digitalisation than those who did not. For SMEs who received more than one type of government support, the levels of digitalisation were up to three times greater (OECD, 2021[4]) (Facebook, OECD, The World Bank, 2020[23]).

Figure 15. Governments have provided large support packages in response to COVID-19

As a percentage of 2020 GDP
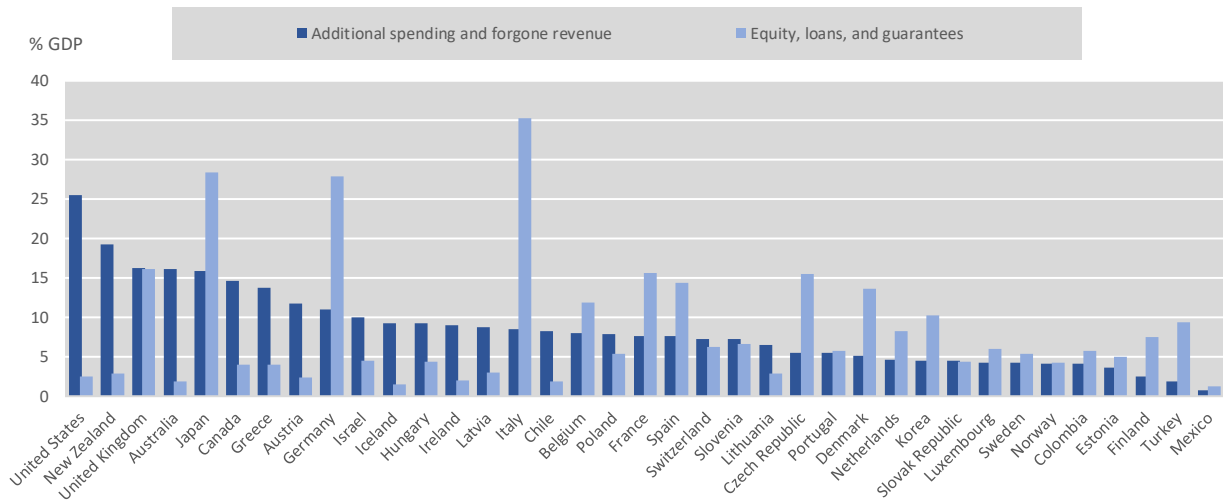
Note: The IMF database summarizes key fiscal measures governments have announced or taken in response to the COVID-19 pandemic as of March 17, 2021. It includes COVID-19 related measures since January 2020 and covers measures for implementation in 2020, 2021, and beyond. The database differentiates fiscal support according to their different implications for public finances in the near term and beyond. It focuses on government discretionary measures that supplement existing automatic stabilizers. Estimates are preliminary as governments are taking additional measures or finalizing the details of individual measures.
Source: (OECD, 2021[1]) and IMF Policy Tracker (https://www.imf.org/COVID19policytracker) (accessed 09 May 2021).

SMEs who received a combination of government support were the most likely to increase their levels of digitalisation. In particular, surveys show that SMEs who received a mixture of financial and non-financial support, such as skill trainings, had the most significant digital transformation (OECD, 2021[3]; OECD, 2020[31]; Bianchini and Kwon, 2021[14]).

 Beyond emergency support provided to ease the initial shock of the crisis, governments have been moving towards medium and long-term policies to support SME resilience and recovery. These policies in particular focus on the adoption of digital technologies into firms' long-term business models, including re-skilling and increasing innovation. From June 2020 onwards, numerous OECD countries developed recovery packages with targeted policies to effectively implement forward-looking digital strategies. Such policies typically address the pre-existing barriers to SME digitalisation that remained, or were in some instances exacerbated, during the COVID-19 period. For example, the Facebook/OECD/World Bank surveys taken throughout 2020 indicated that, for SMEs, financial cost remains the most significant barrier to digitalisation. Other important barriers include lack of skills, difficulty of integrating new technologies and lack of awareness (Facebook, OECD, The World Bank, 2020[21]).

These structural policies reflect the shift to the post-pandemic 'build back better' narrative, with increased SME resilience as a main objective. Box 10 presents some of these structural policy examples from COVID-19 recovery packages. These policies aim to not just assist SMEs in staying afloat throughout the crisis, but to adopt new business models and activities to enhance their long-term productivity and sustainability (OECD, 2021[3]; OECD, 2020[31]; Bianchini and Kwon, 2021[14]).

Box 10. SME Digitalisation in COVID-19 recovery packages

- The **Spanish** government introduced a SME Digitalisation Plan that will directly target 1.5 million Spanish SMEs. The Digital Toolkit has a budget of EUR 3 billion and aims to integrate digital technologies into the business models of Spanish SMEs to foster SME resilience, throughout the recovery from the pandemic, and into the future. The plan is horizontally structured to target these key principles: basic digitalisation; management support; creative disruption; entrepreneurship; sectorial digitalisation and coordination of efficiencies and reforms. The Digital Toolkit will financially support the digitisation of each of these businesses up to EUR 500 – 1,500 each year for 3 years, covering up to 90% of the cost of digitisation tools.

- The **Belgian** recovery plan includes initiatives by the Belgium Cyber Secure and Resilient Digital Society to enhance cybersecurity particularly focussed on traditional (non-technological) small enterprises with less than 50 employees. The plan includes launching a website to support SMEs to assess and improve their firm's cybersecurity.

- The **Korean** government has a strong focus on improving digital infrastructure in its recovery plans. These include an investment of KRW 0.8tn for high-speed internet in 1 300 remote villages throughout the country, Wi-Fi in over 41 000 public places and digital security testing and consulting for 25 000 SMEs. The government has invested KRW 4.8 trillion won for smart infrastructure and information centres, encouraging SMEs to build smart logistics centres in the recovery.

- The **Australian** government plans to provide funding for the Digital Business Plan to drive progress towards Australia becoming a leading digital economy by 2030, by supporting the adoption of digital technologies by Australian firms. The measures focus on the following areas: modern digital infrastructure; reduced regulatory barriers; SME support and capability; digital government services for businesses.

- The **German** recovery plan includes the Mittelstand Digital Initiative which provides information and resources for SMEs to strengthen their digital capabilities.

- The **Irish** recovery plan dedicates EUR 85 million for supporting the digitalisation of businesses with a strong focus on SME digitalisation.

- The **Italian** recovery plan includes a budget of EUR 13.4 billion for the digitalisation of businesses. This initiative promotes the uptake of digital technologies by firms through instruments such as a tax credit scheme aimed at supporting and accelerating SME digital transformation. There is an increased focus on The Fourth Industrial Revolution, such as the 50% tax credit on labour costs for SME employees that undertake training courses related with *Industry 4.0* topics.

- The **Latvian** recovery plan dedicates EUR 125 million for the digitalisation of business. These measures aim to support firms in introducing digital technologies such as e-commerce solutions, the innovation of new productions and digital mentoring.

- The **Polish** recovery plan includes SME orientated measures for the uptake of Blockchain and teleworking capabilities, the development of service portals for digital courses and counselling, vouchers for digitalisation and an Industry 4.0 pilot focussing on Artificial Intelligence and Internet of Things (IoT).

- The **Portuguese** recovery plan includes EUR 650 million for measures targeting SME digitalisation. These policies include tailored digital skill trainings, coaching and e-commerce support for micro-enterprises.

- The **Slovak** recovery plan includes EUR 102 million for the digitalisation of businesses. This plan includes a network of digital hubs to assist businesses with digitalising their processes and providing training for digital skills.

- The **UK** government have launched the Help to Grow Digital programme, a new UK-wide scheme to help up to 100,000 UK SMEs over three years to adopt digital technologies. The initiative will offer free impartial advice and guidance via an online platform to help SMEs identify their digital technology needs, assess technology purchasing options and implement new technologies in their operations, and a voucher offering a 50% discount on eligible software up to a value of £5000. There will be a focus on Accounting, CRM and e-commerce.

- The **U.S**. government's bipartisan infrastructure framework contains USD 65 billion in broadband investments for underserved areas in the US. The US government is continuing to work to identify additional opportunities to make these investments to close the gap in broadband and 5G access for SMEs.

- The **Czech Republic** approved the National Plan for the Development of Very High Capacity Networks and Implementation and Development of 5G Networks to bring full network coverage throughout the territory.

Source: (OECD, Forthcoming[32])

Despite their relevance for boosting SME resilience, however, structural measures remain less common than policies targeting liquidity shortages. As shown in OECD analysis across 55 countries, less than half of government COVID-19 recovery packages have structural support policies targeted towards SMEs, compared to the more widely used financial instruments, deferral measures and labour related schemes.[6] This research indicates that, amongst the structural measures, the most common objective related to the uptake of teleworking and digitalisation (of the 55 countries analysed, 33 adopted policies targeting these areas in their policy response) (OECD, 2021[22]). The focus is often on skills or infrastructure, elements that can enable a digital transformation in a broad sense (Table 1). When analysing SME-related policies across thematic policy areas, digitalisation is the area in which the most monetary value has been placed.

Whilst SMEs represented a clear target of government assistance in the initial rescue or 'emergency' phase of the pandemic, in the recovery packages a shift is observed towards measures directed to the general business population, regardless of size. This is particularly true for the structural elements of the recovery packages, which tend to focus on horizontal or thematic measures, such as innovation, skills and digital infrastructure. Although these measures are not always SME specific, SMEs still stand to benefit from general improvements in these areas.

Recovery packages for European countries included a stronger focus on digitalisation than for other OECD countries analysed. This focus reflects the conditions set for the access to EU Recovery and Resilience Facility, whereby at least 20% of all recovery packages should be focused on preparing society for the digital transition. The European Union have set the ambitious target to raise the rates of SMEs with basic digital intensity from 60% in 2019 to 90% by 2030. This goal is complemented by the aim to increase the share of cloud/AI/big data use by SMEs from 18% in 2020 to 75% by 2030. The COVID-19 recovery packages are central instruments for European nations to reach these targets. According to a Deloitte study, 27% of European recovery packages budget is planned to be spent on digitalisation policies, with 26% of this share planned to finance SME digitalisation. Within the EU, Germany, Austria and Lithuania will spend the largest share of their funding on digital. Italy, Spain, Germany and France plan to spend the most on digital in absolute terms (Table 1; (Deloitte, 2021[33])).

---

[6] Analysis prepared based on official sources and media reporting. For further details please see: (OECD, 2021[22])

Table 1. Digitalisation in selected OECD countries recovery packages

Mapping conducted by OECD throughout the COVID-19 pandemic

Country	Recovery package	Size	Focus	Contains focus on digitalisation
Australia	Federal budget 2021/22 (May 2021)	5% GDP	Infrastructure, skills, sustainability, digitalisation, tax cuts	✓
Austria	Rescue and investment package (June 2020) Recovery and Resilience Plan (June 2021)	EUR 15 billion EUR 3.5 billion (grants)	Investment Greening, digitalisation, skills, innovation	✓
Belgium	Plan National pour la Reprise et la Résilience (June 2021)	EUR 5.9 billion (grants)	Greening, digitalisation, skills, innovation, mobility, social cohesion, productivity, public finance	✓
Canada	Recovery Plan for jobs, growth and resilience (April 2021)	5% GDP	Jobs, climate, small businesses, women, young Canadians	
Chile	Social and Economic Recovery Plan (June 2020) Paso a Paso Chile se Recupera (October 2020)	USD 12 billion	Investment, jobs infrastructure, innovation, income support, SME support, sustainability	
Colombia	Compromiso por el Futuro de Colombia (July 2020)	COP 100 billion (USD 29 million)	Jobs, clean tech, housing, education, digitalisation, infrastructure	✓
Czech Republic	National Recovery Plan (July 2021)	CZK 191 billion	Digitalisation, greening, mobility, education, social services	✓
Denmark	Danish Recovery Plan (April 2021)	DKK 11.6 billion	Greening, digitalisation, health, exports	✓
Estonia	Recovery and Resilience Plan (June 2021)	EUR 982.5 million (grants)	Digitalisation, greening, mobility, health, social protection	✓
Finland	Sustainable Growth Programme (May 2021)	EUR 238 million	Greening, digitalisation, jobs, social inclusion, health	✓
France	France Relance (September 2020) Plan National de Relance et Résilience (June 2021)	EUR 100 billion EUR 39.4 billion (grants)	Greening, digitalisation, skills, innovation, health	✓
Germany	Fighting Corona, Securing Prosperity, Strengthening Sustainability (June 2020) Recovery and Resilience Plan (April 2021)	EUR 130 billion EUR 25 billion (grants)	Infrastructure, sustainability, innovation, digitalisation, demand stimulus	✓
Greece	Greece 2.0 (April 2021)	EUR 60 billion	Investment, greening, digitalisation, innovation	✓
Hungary	Hungary Recovery Plan (May 2021)	EUR 16.8 billion (of which 7.17 grants)	Greening, digitalisation, mobility, education	✓
Iceland	Fiscal Plan 2022-2025 (March 2021)	-	Jobs, social cohesion, education, innovation, greening, infrastructure	
Ireland	National Recovery and Resilience Plan (June 2021)	EUR 989 million (grants)	Greening, digitalisation, education	✓
Israel	Economic plan for coping with the coronavirus crisis (September, 2020)	ISL 80 billion	Jobs, training, digitalisation, innovation, mobility	✓
Italy	National Recovery and Resilience Plan (June 2021)	EUR 191.5 billion (of which 68.9 grants)	Greening, digitalisation, mobility, education, social cohesion, innovation and start-ups	✓
Japan	Comprehensive Economic Measures to	JPY 40 trillion	Digital, greening, access to	✓

	Secure People's Lives and Livelihoods towards Relief and Hope (December 2020)		finance, innovation, disaster prevention and mitigation	
Korea	Korean New Deal (July 2020, revised in July 2021)	KRW 220 trillion	Digitalisation, greening, social safety net	✓
Latvia	Latvia Recovery Fund plan (June 2021)	EUR 1.8 billion (grants)	Greening, sustainable mobility, digitalisation, education	✓
Lithuania	New Generation Lithuania: Recovery plan	EUR 2.2 billion (grants)	Greening, digitalisation, education, health, social protection	✓
Luxembourg	Plan pour la Reprise et la Résilience (June 2021)	EUR 93 million (grants)	Greening, digitalisation, mobility, jobs, skills	✓
Mexico	Acciones para Reactivación Económica (January 2021)		Employment, investment promotion, international trade, sustainability and digitalisation	✓
Poland	National Reconstruction Plan (June 2021)	EUR 36 billion (of which 23.9 grants)	Greening, digitalisation, mobility, health, innovation	✓
Portugal	Recovery and Resilience Plan (April 2021)	EUR 16.6 billion (of which 13.9 grants)	Greening, digitalisation, innovation, access to finance	✓
Slovakia	Recovery and Resilience Plan (April 2021)	EUR 6.3 billion (grants)	Greening, digitalisation, social cohesion, health	✓
Slovenia	Recovery and Resilience Plan (April 2021)	EUR 2.5 billion (of which 1.8 grants)	Greening, digitalisation	✓
Spain	Recovery, transformation and resilience plan (October 2020)	EUR 72 billion (of which 69.5 in grants)	Digitalisation, greening, skills, jobs	✓
Sweden	Recovery Plan (May 2021)	SEK 34 billion (grants)	Greening, social cohesion, jobs, digitalisation	✓
Switzerland	Education and Research Budget (December 2020)	CHF 28 billion	Education, research, innovation	
United Kingdom	Build Back Better plan for growth (March 2021)	GBP 65 billion	Infrastructure, skills, innovation, net zero	
United States	American Families Plan (April 2021) American Jobs Plan (March 2021)	USD 2 trillion USD 2.3 trillion	Income support, infrastructure, skills	

Source: Based on an OECD monitoring carried out from February 2020 to August 2021 on the effects of the crisis on SME&E and policy responses.

From "rescue" to "recovery" packages, investments by governments to support SME digitalisation have increased in absolute value but decreased as a share of total investments in digitalisation. Monitoring over 91 countries show that in rescue packages (i.e. immediate response to the crisis) governments invested or pledged USD 8 billion towards SME digitalisation, 22.8% of the total USD 35.1 billion dedicated to "digitalisation" policies. In recovery packages (i.e. medium-long term plans to recover from the crisis) the investment by governments in SME digitalisation has risen considerably to USD 49 billion, but, considering the much larger size of recovery packages, the share has decreased to 7.7% (of the total USD 638 billion; Table 2)[7].

---

[7] These are preliminary evidence from the Global Recovery Observatory of the Oxford University Economics Recovery Project (OUERP) which are not completely comprehensive: some rescue/recovery packages (including by European countries) are not included in this estimate.

Table 2. SME digitalisation policies in "rescue" and "recovery" packages, value in USD billion - January 2020 – October 2021

	Rescue packages (i.e. immediate response to the crisis)	Recovery packages (i.e. medium-long term recovery plans)	TOTAL
Total policies for digitalisations	35	638	673
SME-related policies	8	49	57
SME-related policies (share)	22.7%	7.7%	8.5%

Note: The Global Recovery Observatory of the Oxford University Economics Recovery Project (OUERP), which includes 7.585 rescue and recovery policies of 91 countries. Not all policies by policy domain include information on whether they are part of rescue or recovery packages.
Source: Global Recovery Observatory of the Oxford University Economics Recovery Project (OUERP); OECD SME Financing Scoreboard 2022 (OECD, Forthcoming[32])

4.1. Selected Policy Areas

Several key policy areas have emerged from D4SME Dialogues and OECD analysis, which are of particular interest for enabling SMEs to "build back better" after the pandemic. Targeted policies and operational toolkits have been developed by OECD governments on the aspects explored below: E-commerce and SME exporting strategies; digital skills training; connectivity of local ecosystems; inclusive recovery; support to well-being and mental health.

E-Commerce and SME exporting strategies

Many OECD governments have put in place targeted programmes for supporting the uptake of e-commerce practices by SMEs, with a particular focus on improving their exporting capabilities. Instruments span from grants for co-financing purchase of consulting services, to vouchers to be spent in getting ready to trade online, to securing freight space for SMEs' exporting goods. A few interesting examples are illustrated below (Box 11).

Box 11. Policy Focus: E-commerce and SME exporting strategies

Denmark

The Danish government's recovery plan includes an SME Digitalisation and Exports programme which aims to invest DKK 65 million in the SME digital transition.

The SME Digitalisation and Exports programme, run by the Danish Business Authority (Erhvervssytrelsen), aims to support SMEs through their digital transition, with a focus on their e-commerce capabilities. The initiative consists of grants for co-financing purchases of consulting on topics such as the implementation of new e-commerce solutions, the development of SMEs e-export capacity and the development and integration of digital sales for new international markets. SMEs can apply for grants to acquire new technologies and digital solutions. Applications are assessed on a first-come, first-served basis.

The budget for the programme was allocated in 2020 as part of the COVID-19 recovery. In 2020, 920 grants were given amounting to approximately DKK 91 million. The government plans to increase the pool for eligible SMEs, responding to the high demand for the programme and the continued economic crisis.

Source: (OECD, Forthcoming[32]), October 2021) https://fm.dk/nyheder/nyhedsarkiv/2021/april/dansk-genopretningsplan-skal-understoette-den-groenne-omstilling/

Ireland

The Irish "Digital Trading Online Voucher," allows businesses to receive financial assistance of up to EUR 2 500 on training sessions covering various aspects of trading online, including developing a website, digital marketing and search engine optimisation. The voucher can also be used towards subscriptions to low cost online retail platform solutions, to help companies quickly establish a retailing presence online.

Firms that are eligible for the voucher are those with limited or no e-commerce presence, less than ten employees and a turnover less than EUR 2 million.

Source: « Trading Online Voucher Scheme", Local Enterprise Office (https://www.localenterprise.ie/Discover-Business-Supports/Trading-Online-Voucher-Scheme)

Austria

The Austrian government launched the SME.E-Commerce initiative to drive the digitalisation of SMEs towards online trade. In 2021, the programme will provide EUR 10 million to support the implementation of specific e-commerce projects. The grants will amount to 20% of the project costs.

Source: « Support SMEs and Startups", Federal Ministry of the Republic of Austria, Digital and Economic Affairs (https://www.bmdw.gv.at/en/Topics/Digitalisation/For-companies/Support-SMEs-and-start-ups.html)

Korea

The Ministry of SMEs and Startups of Korea (MSS) co-operated with the Ministry of Oceans and Fisheries, and the Ministry of Trade, Industry and Energy to set-up a one-stop-shop to facilitate maritime shipping for SMEs. The programme is called "Export-Import Logistic Comprehensive Response Center", and it works with association of ship owners, trade associations and other stakeholders to monitor and relieve bottlenecks during the pandemic. In addition, the MSS has signed a Memorandum of Understanding with the country's flag carrier to secure freight space for SMEs, to lower their freight costs and ensure that SMEs selling online would be able to deliver to their customers.

Source: Bianchini, M. and Kwon, I. (2021), Enhancing SMEs resilience through digitalisation: the case of Korea", OECD SME and Entrepreneurship Papers, No. 27, OECD Publishing, Paris

---

Digital skills training

The COVID-19 recovery packages include a strong policy focus on digital skills. The upskilling and reskilling of SMEs and entrepreneurs, often with a focus on digital skills, is present in most OECD countries recovery packages (Table 1).

Existing measures for SME upskilling have been expanded, revamped or new ones introduced. To improve access to public services and trainings, e-government services have been strengthened in response to the crisis, with significant innovations and investment in e-government instruments such as government portals and 'one-stop-shops', in which has also encouraged SMEs along their digital transition (OECD, 2021[1]). Box 12 provides the example of New Zealand's e-government services to improve the digital skills of SMEs in a post-pandemic economy.

Box 12. Policy Focus: The digital enablement of New Zealand SMEs

Digital Boost

As part of the New Zealand government's digital enablement programme, the Digital Boost initiative has been launched in early 2021, to enhance the digital skill capability of SMEs so they can make greater use of digital tools and adopt digital processes. Digital Boost is a learning platform with over 400 short training videos and Q&A sessions on the Digital Boost website. Since its launch, over 40,000 trainees registered, including more than 22 000 small businesses owners. The free training is available to both small business owners and their employees. Initially introduced as part of New Zealand's response to the COVID-19 crisis, the programme has been evaluated as a success and will continue past the pandemic recovery period. The Ministry of Business, Innovation and Employment (MBIE) conducted research on the digital challenges small businesses in New Zealand face and a result, the Digital Boost programme was developed in consultation with industry experts and small business owners.

Surveys of New Zealand SMEs who have used the Digital Boost platform show that 46% of participants now accept ecommerce payments, up from 25%, whilst 70% of the businesses now have a website, up from 49%. Of the firms surveyed, 70% of the SME businesses feel confident with the prospect of becoming digital after engaging with the platform.

Moving forward the New Zealand government have plans to launch The Navigator Initiative and Digital Business Advisor services. These services include the creation of an integrated and innovative solution that leverages data to deliver prescribed and prioritised digital actions plans designed for SMEs. The relevant diagnostics will provide business owners with assessments of their business' current digital capability and then provide personalised recommendations that will enable them to make informed decisions about the next, most relevant, actionable steps they should take in their business' digital transformation journey.

Figure 16. New Zealand SME Digital Strategy Framework

Spotlight Series	Digital Boost Skills Training and Support	Digital Boost Directory	Digital Boost Alliance
• Spotlight videos where small business owners who have recently transformed their business by adopting digital tools and digital ways of working share their experiences. • Aims to inspire and motivate peers to digitise their businesses. • Government funded	• Government funded free online digital business skills training, provided by a private sector consortium of New Zealand's leading digital innovators; • Self-paces learning journey with gamification features, Q&A sessions, regular fireside chats and access to support specialists 7 days a week; • Aims to build skills, confidence and trust to enable SMEs to adapt a digital way of working	• A marketplace that brings together relevant digital tools, technologies, products and services so SMEs can more easily choose what they need; • The tool directory is sector and industry based; • Government sponsored	• Accelerating the growth of a Digital Aotearoa by providing businesses, people and organisations with increased access to technology, expertise, advice, support and services needed to live, work and thrive in a sustainable and resilient digital economy; • Government in partnership with over 28 private sector technology providers and large firms; • Provides promotion and support for Digital Boost Educate.

New Zealand business portal

The portal https://www.business.govt.nz, part of the New Zealand Ministry of Business, Innovation and Employment (MBIE), provides "tools and expert advice from government and industry, designed to help Kiwi businesses save time and succeed." The platform is not SME specific, instead the focus is on providing all businesses with 'one-to-many' online support services. The full range of G2SME services are provided, including personalised templates, enabling users to develop their own unique business plan in order to find their most appropriate commercial niche. This can be supported by tailored business advice and tools for calculating cash flow, tax liabilities and engaging with funding sources. The service also makes available personalised tools for hiring staff and ensuring their wellbeing in order to grow the business.

The https://www.business.govt.nz tech platform was enhanced to enable small businesses to use eID log-in, access tailored information and deploy appropriate on-site tools. These include *Business Boost*, *Climate Action Toolbox*, an employment tool, and tools for selecting the most appropriate legal and business status, such as for a start-up, partnership, sole trader, limited liability. Small businesses are also able to share information and data in a secure way with third parties for assistance with, for example, managing assets and cash flow as well as providing access to online market lenders. The online platform provides over 200 pages of relevant content and 20 tools in order to simulate what an expert adviser would deploy during a traditional in-person conversation focused on the typical weaknesses of a small business.

The medium-term strategy, supported by a budget of NZD 4.5 million, is to help create an effective 'graduated landscape of support' with as much as possible provided online, supplemented by face-to-face contact with small business advisers where this can improve the quality and outcome of the interaction. Small businesses can also subscribe to a regular newsletter sent to about 70% of New Zealand businesses.

Source: B*ased mainly on an interview with Matt Kennedy-Good, Director responsible for businness.govt.nz, and Malcolm Luey, Policy Director of Digital, Small Business & Strategic Programmes at the at the Ministry for Business, Innovation and Employment.*

Connectivity of local ecosystems

Policy instruments to strengthen SME ecosystems, such as local digital hubs, can enable many firms in their digital transition. Positive effects are particularly beneficial for firms operating in rural or regional communities. For example, a study conducted in 2019 by Vodafone & SIRO's Gigabit Hub Initiative, in which six of their operational digital hubs were analysed, indicated that, by introducing a digital hub throughout regional Ireland, over 1 000 new businesses could be created. These existing hubs were contributing to the transformation of the business landscape of these communities (Vodafone, 2019[34]). In Korea, the Ministry of SMEs and Startups launched during the pandemic the "Shared-use teleconference room" programme to renovate existing facilities and make it easier for SMEs to integrate teleconferencing in their day-to-day business operations. Local hubs as "Techno Parks", Knowledge Industry Complexes, and incubators could apply for grants up to KRW 12 million (EUR 8 800) to renovate their existing conference rooms by acquiring new video equipment and video conferencing software, as long as the service would be provided to SMEs for free or at a very low cost set by the government. 1 460 spaces across the country were renovated by April 2021 (Bianchini and Kwon, 2021[14]). Private sector actors are also developing digital hubs to support firms and entrepreneurs in their ability to digitise their business and overcome the limitations of COVID-19. For example, Wix's WixHub is a knowledge base for website development and a training centre where Wix provides basic 'how to' courses for website building. WixHub collaborated with "ShoppingIL Academy" by Google, and "It's our Business" by Facebook to bring practical skills to users in Israel.

Digital hubs also play a key role in the development of smart manufacturing across OECD countries. In the European Union, the Commission has supported the development of "Digital Innovation Hubs" (DIH) to foster the creation of better network condition for the digital industrial transition. DIHs help companies become more competitive by integrating digital tools and practices in their business processes, offering technology infrastructure (in "Competence Centres"), access to the latest knowledge and expertise for piloting, testing and implementing digital solutions, as well as financing (European Commission, 2020[35]). Examples of the hundreds of DIH of this type present in Europe span from the Aachen Hub for Robotics in Healthcare in Germany, the Advanced Manufacturing DIH in Vilnius, Lithuania or the Lombardy Intelligent Factory Association in Milan, Italy (European Commission, 2021[36]). As part of the Italian National Transition Plan 4.0 to support the Fourth Industrial Revolution, Digital Innovation Hubs and i4.0 Competence Centers have been established across Italy to reinforce the innovation ecosystem. These hubs focus on spreading awareness of i4.0 technologies, courses on sector specific advanced skills and fundamental i4.0 skills and development of industrial research and experimental development projects.

Inclusive recovery: disadvantaged groups, women-led businesses, rural/regional SMEs

The lack of digital skills amongst SMEs from under-represented or disadvantaged groups, particularly women, seniors and youth, remains a barrier to an inclusive recovery. For instance, OECD research on computer usage indicates that there is a gap in basic digital skills for women, a gap which reinforces the existing inequalities (OECD/European Union, 2019[37]).

Female owned businesses were more vulnerable to the economic shock caused by the crisis. The gender gap in entrepreneurship and female run SMEs is a common feature across most economies, with women in OECD countries being 1.5 times less likely to run a start-up. Despite improvements made in recent years, the COVID-19 pandemic and subsequent economic crisis threatened to undo this progress (OECD, n.d.[38]). Facebook's survey from February 2021 indicates that female-led SMEs on average were 6% more likely to be closed due to pandemic social distancing measures than their male-run counterparts. This is also compounded by the concentration of female-run SMEs in sectors most impacted by NPIs. Globally, female-run SMEs were 4% more likely to report a drop in sales (Facebook, 2021[18]).

Yet, despite existing barriers, female run SMEs were more likely to increase use of digital tools in response to the pandemic than male-run firms. Facebook's survey of SMEs in February 2021 revealed that 66% of female owned SMEs had changed at least one aspect of their business model, compared to 60% of SMEs led by males (Facebook, 2021[18]).

Disadvantaged groups, such as women-led businesses and rural or regional SMEs, often need specific support. Policy issues relate to digital skills gaps, the lack of digital entrepreneurship role models from these groups, regulatory barriers and limited access to finance. For example, female run firms are less likely to benefit from liquidity support tools as on average they are not as likely to use bank loans, have lower financial literacy and are smaller in size so are not always eligible for programmes due to thresholds they do not meet (OECD, n.d.[38]) (OECD/European Union, 2019[37]).

The extensive COVID-19 recovery measures introduced by governments, including support for SME digitalisation, may not be gender-sensitive. There is a need to continue the pre-pandemic trend of tailored schemes to support the digital transformation of under-represented and disadvantaged groups. Initiatives such as building a stronger digital ecosystem for disadvantaged groups, improving their access to funds and online platforms and tools can be built upon and strengthened (OECD/European Union, 2019[37]).

Many OECD governments have been introducing programmes and initiatives to improve the access to digital infrastructure for rural areas. COVID-19 highlighted the existing inequalities between urban and regional communities in accessing high-quality broadband. Infrastructure bottlenecks remain a key barrier to digitalisation for isolated and marginalised communities. For example, the Canadian government

granted temporary access to additional spectrum to support extra capacity, addressing the increased internet usage and demand across the country.

Support to well-being and mental health

Digital tools can help to assess the effects of the crisis on mental health and to deliver support. The effects on mental health of the new working conditions vary between individuals and firms, and need to be assessed individually**.** The Bupa Global Executive Wellbeing Index indicated that throughout 2020, 78% of SME managers reported experiencing mental health challenges. In April – May 2020, the Australian government (Department of Industry, Science, Energy and Resources) commissioned McNair yellowSquares to conduct research into the mental health of Australian SME owners, with a focus on the context of COVID-19. The surveys indicated that the main factors contributing to stress for SMEs are financial concerns and concerns about the impact on family and personal life. Based on the results of this report, the Australian government built a mental health strategy for SMEs (Box 13), to be delivered through a digital hub. However, more research is needed to address the connection between teleworking and mental health for SMEs, particularly the increased time spent using digital tools.

In response to the pandemic, Microsoft conducted research into the connection between wellbeing and the heightened digital intensity of workdays. Microsoft's 'The New Future of Work' research indicated that back-to-back meetings can decrease levels of focus and engagement and be a source of high stress. In response to these findings, Microsoft Outlook's flagship teleworking tool, Microsoft Teams has developed a setting to automatically cut meetings down by five, ten or fifteen minutes to ensure breaks (Teevan, Hecht and Jaffe, 2021[39]).

Box 13. Policy Focus: Support to Well-being & Mental Health for Australian SMEs

The Australian Department of Industry, Innovation and Science as part of the Small Business portfolio policy functions launched The Ahead for Business digital hub to support SMEs mental health and well-being. The digital hub is run by mental health organisation Everymind with a budget of AUD 3.1 million as part of a small business mental health package.

Ahead for Business aims to offer support for SMEs mental health through adverse events, with a particular focus on the COVID-19 recovery. The platform offers SME owners access to services such as anonymous peer to peer forums; online wellbeing plans; support directory; personalised small business portal and tailored resources e.g. case studies, videos, podcasts.

Source: https://aheadforbusiness.org.au/

4.2. Private sector initiatives

SME ecosystems have proved an essential driver of transformation during the pandemic, enabling many small businesses to increase their access to digital services and tools. The COVID-19 pandemic, and the economic shock that followed, have triggered an unprecedented response from the private sector, including large firms, multinational technology companies, small digital firms, chambers of commerce and SME and business associations offering support to SMEs. This support has varied depending on the source, including free access to technology and platforms, trainings, mentorship, and access to finance.

SMEs and start-ups in Information and Communication Technology (ICT) sector have stepped up the offer of digital services and tools to SMEs. Box 14 showcases some selected examples. These SMEs often have the key support of sector associations, which can play an important role in connecting SMEs with specialised providers that offer tailored services in support of their digitalisation journey (Box 15; (European Digital SME Alliance, 2021[40]; OECD, 2020[6])).

Box 14. Spotlight on innovative SMEs providing IT for SME digital transformation

- *Smarthink* (Italy) is a technology start-up operating in the education sector, providing a skill development platform for entrepreneurs to prepare them for the future of work. In response to COVID-19, *Smarthink* added new services to enable companies to better prepare workers for the 'new normal.' This included adding training for remote working skills, online assessment tools for digital skills and additional consultancy services.

- *Quantum BITS* (Greece), a firm providing accounting and IT services to SMEs, supporting them in designing and implementing their digital strategy and online business presence, including digitalising their bookkeeping, budget management, tax compliance operations as well as introducing AI powered automation tools, experienced a sharp increase in demand for its services during the crisis. One of Quantum's clients, a family run florist that risked closure after the first lockdown was able to transform its business model by increasing its online presence.

- *ATLAS Intelligence Gmbh* (Germany), is a cybersecurity service and technology provider with products targeted towards SMEs. In response to the pandemic, and the increase in SMEs operating online, *ATLAS Intelligence Gmbh*, targeted many of their products to smaller firms.

Source: D4SME Databank; European Digital SME Alliance

Box 15. Empowering SME ecosystems to enable SME digitalisation – public-private cooperation

Initiatives in support of strengthening the SME ecosystem emerged throughout the pandemic. These policies involved cooperation between the public and private sector, ICT start-ups as well as business associations.

- Digital Team Austria is a private initiative of companies of the technology industry that have committed themselves to offer services to SMEs free of charge for at least three months.

- European DIGITAL SME Alliance, Europe's largest association of digital small firms and entrepreneurs, launched a campaign in order to showcase innovative digital solutions to mitigate the COVID-19 crisis. In addition, the alliance launched a platform that allowed traditional or non-technological SMEs to have access to a catalogue of digital solutions that could assist in their recovery or response to the crisis. These solutions were diverse, from smart working or video conferencing tools to 3D printing, e-learning and AI-modelling technologies. The platform was designed to promote SMEs supplying digital services and solutions in the ecosystem, competing with larger technology firms.

- As part of Australia's Small Business Digital Champions project, 15 Australian industry associations received AUD 50 000 each over a period of 2 years to establish a digital advisory service in response to the COVID-19 pandemic. These industry associations promoted the benefits of going digital to their association membership. This included advice on technology trends and adoption, digital training, online content development and planning, and coaching and support. As well as sector-specific digital advice, the sector associations offered general business advice to support small firms throughout the pandemic.

- The French government, in collaboration with large digital providers, created a programme in which free or discounted digital offers were provided to SMEs in the retail sector who were affected by social distancing measures.

- Italy launched an initiative called Digital Solidarity, which includes the creation of an online portal where SMEs and the self-employed can register to access free digital services provided by large private-sector companies in fields such as teleworking, video conferencing, access to mobile data and CC.
- The Spanish government cooperated with Vodafone, along with other private sector actors, to develop a Digital Toolkit to support the rapid digitalisation of SMEs. Companies have leveraged their communication and marketing channels to help raise awareness among SMEs of the Digital Toolkit. They also provided feedback on its structure and objectives and cooperated with the government to ensure that the Toolkit would allow SMEs to access a broad range of solutions including digital marketing; e-commerce; cyber-security; digital business solutions and smart-working.
- The Flanders government of Belgium cooperated with Microsoft, along with other private sector actors within the open standards community, to streamline access to government services using a digital identity. Administrative bottlenecks for opening a business in Flanders, such as obtaining a proof of age and minimum legal capital are now lowered for SMEs and entrepreneurs. This pilot programme illustrated how the use of decentralized identity technology can lower the administrative burden for citizens, whilst increasing their trust in the government.
- The United States Small Business Administration's 'Paycheck Protection Program' (PPP) allows firms, including SMEs, to apply for low-interest private loans to pay for their payroll and certain other costs. The Small Business Administration partnered with PayPal and other non-bank institutions to help facilitate PPP loans. Private sector providers like PayPal were able to reach some of the most vulnerable communities that traditionally struggle to access capital.'

Source: (OECD, 2021[1]) Private Sector Initiatives

Large technology companies have reacted to the pandemic by launching or updating programmes to support the digitalisation of SMEs. Large digital service providers across the OECD stepped up initiatives in response to the pandemic to support the uptake of digital business tools and the integration of digital business practices by SMEs in their vast global networks.

From a public policy perspective, it is relevant to have an understanding of the offers for training and support that are available for SMEs, including from the private sector itself. From the perspective of SMEs, the path to digitalisation can be autonomous, or it can leverage one or more of the available support programmes from public or private sector, depending on their needs and level of digital maturity. A large number of SMEs across OECD countries find it convenient and effective to avoid the costs linked to building their own software and hardware infrastructure and decide to leverage instead large digital platforms to sell their goods, digitalise their business functions or provide new digital services. To facilitate this process, they have often access to trainings and tools to make the use of such platforms simpler.

This section presents insights from twenty-two programmes introduced by the D4SME private sector partners (Amazon, Facebook, Kakao, Microsoft, PayPal, Vodafone and Wix) to support SME uptake of digital tools. All these programmes are targeted to SMEs and most focus on SMEs recovery from COVID-19, and their ability to build back more digital and resilient in a post-pandemic economy. Measures span from digital skills training, e-commerce guides, discounts and offers to services and products to consultancy services, coaching webinars and live events and providing access to finance. Detailed descriptions of these programmes are found in Private Sector Initiatives.

The private sector initiatives analysed were mostly introduced as a response to COVID-19. Ten of the private sector programmes were introduced in response to the COVID-19 crisis and the economic shock that SMEs faced globally. Many of these initiatives were introduced in the first half of 2020, in direct response to the initial period of stringent containment measures. Five of the pre-existing initiatives were adapted to have a focus on digitalisation in response to the pandemic specifically.

Several programmes have been designed or implemented by large private companies in cooperation with national governments. Such initiatives include: SheMeansBusiness (*Facebook)*; Amazon Small Business Accelerator (Amazon); Accelera con Amazon (Amazon); Quickstart Online *(Amazon);* Accelerateur du Numerique *(Amazon);* Despega (Amazon); TodosDesedeCasa (Everyone from home) (Microsoft); Kakao Class (Kakao); Wix & Eilot municipality (Wix); Wix Marketplace (Wix). The level of involvement with the government varies across programmes. Facebook for example collaborates with governments to connect female entrepreneurs to the local trainings as part of *SheMeansBusiness.* Amazon cooperated with the UK Department of International Trade and the Greater London Authority, the Italian and Spanish trade organisations ITA and ICEX as well as multiple small business associations in the creation and promotion of its small business digitization programmes.. Detailed descriptions of these programmes are reported in ANNEX A (Private Sector Initiatives).

Among these cases of public-private sector cooperation, a handful of initiatives concern collaboration with regional or state governments. Cooperation varies, from the dissemination and advertisement of a given initiative, to the initiative design itself. Microsoft's TodosDesdeCasa (Everyone from home) works with the different regional Spanish governments to implement the programme, whilst Wix's cooperation with the Eilot Municipality in Israel concerned the inception and design of the initiative.

While spanning across many sectors, the analysed private sector initiatives tend to be most relevant for SMEs operating in the retail sector or engaging with selling online. Several of these initiatives are sector specific e.g. Amazon's five European Small Business digitization programmes. Many of the programmes target the retail sector e.g. Wix's *Marketplace* and Amazon's *Despega.* Facebook's *SheMeansBusiness* does not focus on a specific sector, but on female run firms.

Online trainings for skill upgrading and e-commerce toolkits were the most common business functions targeted. Of the twenty-two initiatives analysed, twelve targeted online training for skill upgrading. This illustrates the emphasis placed on digital skills and the re-skilling of entrepreneurs by the private sector, and alludes to the digital skill gap remaining a barrier for SME digitalisation. Seven of the initiatives are e-commerce toolkits, three are business development services (e.g. legal advice, consulting) and one is a programme that targeted access to finance. The three remaining initiatives are indicated to target other business functions.

Many private sector initiatives tend to be place-based e.g. specific to the country in which the company operates, or have a regional or local focus. Ten of the initiatives were designed for specific countries. Amazon for examples runs similar programmes in different countries, adapting the initiative to each specific country e.g. Quickstart Online is run by Amazon Germany, whilst Accelera con Amazon is run by Amazon Italy. Several of the initiatives have a regional or local focus e.g. Wix & the Eilot Municipality in Israel and *Kakao Class* in the Jeju Province of Korea.

Table 3. Examples of private sector initiatives to support SMEs digital transition (1)

Stakeholder engagement and multi-level governance & target populations

Name of initiatives	Stakeholder engagement and multi-level governance		Target populations				
	Public sector cooperation	Regional/state government cooperation	SMEs	Firms of all size	Sector specific	Regional/ Local focus	Place-based (e.g. country specific)
Facebook's SheMeansBusiness (Facebook)	✓		✓			✓	
Amazon Small Business Accelerator (Amazon)	✓		✓		✓		✓
Quickstart Online (Amazon)			✓		✓		✓
Accelerateur du Numerique (Amazon)			✓		✓		✓
Accelera con Amazon (Amazon)	✓		✓		✓	✓	✓
Despega (Amazon)	✓		✓		✓	✓	✓
Ma PME Numerique (MyDigitalSME) (Microsoft)			✓			✓	✓
TodosDesdeCasa (Everyone from home) (Microsoft)	✓	✓	✓			✓	
Ambizione Italia per le PMI (Italian Ambition for SMEs) (Microsoft)			✓			✓	
Virtual Mittelstand Tour (Virtual SMEs Tour) (Microsoft)			✓			✓	✓
V-Hub (Vodafone)			✓			✓	
#Thosewhodare event (Vodafone)			✓			✓	
Plans to boost your business (Vodafone)			✓			✓	
Support for Partner Business Loan (Kakao)			✓				
Kakao Makers (Kakao)			✓				
Kakaowork (Kakao)				✓			
Free education for partners (Kakao)			✓				
Kakao Class (Kakao)	✓	✓	✓			✓	
Eilot Municipality X Wix (Wix)	✓	✓	✓			✓	✓
Wix Marketplace (Wix)	✓	✓	✓				
India Digital Trade Facilitation Forum (PayPal)	✓	✓	✓		✓		✓
AmCham Launchpad: The SMEs and startup navigator – Hong Kong (PayPal)			✓				✓

Source: D4SME Database

Table 4. Examples of private sector initiatives to support SMEs digital transition (2)

SMEs business function targeted

Name of initiatives	SME business functions targeted					
	Online training for skill upgrading	E-commerce toolkit	Business development service (e.g. legal advice)	Digital access to finance	Free access to products and services	Other
Facebook's SheMeansBusiness (Facebook)	✓					
Amazon Small Business Accelerator (Amazon)	✓	✓				
Quickstart Online (Amazon)	✓	✓				
Accelerateur du Numerique (Amazon)	✓	✓				
Accelera con Amazon (Amazon)	✓	✓				
Despega (Amazon)	✓	✓				
Ma PME Numerique (MyDigitalSME) (Microsoft)	✓					
TodosDesdeCasa (Everyone from home) (Microsoft)	✓					
Ambizione Italia per le PMI (Italian Ambition for SMEs) (Microsoft)			✓			
Virtual Mittelstand Tour (Virtual SMEs Tour) (Microsoft)			✓			
V-Hub (Vodafone)						✓
#Thosewhodare event (Vodafone)						✓
Plans to boost your business (Vodafone)		✓				
Support for Partner Business Loan (Kakao)				✓		
Kakao Makers (Kakao)						✓
Kakaowork (Kakao)					✓	
Free education for partners (Kakao)	✓					
Kakao Class (Kakao)	✓					
Eilot Municipality X Wix (Wix)			✓			
Wix Marketplace (Wix)	✓	✓				
India Digital Trade Facilitation Forum (PayPal)		✓				✓
AmCham Launchpad: The SMEs and startup navigator – Hong Kong (PayPal)	✓					

Regardless of the programmes being introduced or adjusted in response to the pandemic, private sector actors intend on continuing the initiatives after the COVID-19 recovery period has ended. Thirteen of the initiatives analysed have plans to continue the programmes after the pandemic and economic crisis has ended (Table 5).

Table 5. Examples of private sector initiatives to support SMEs digital transition (3)

COVID-19 Response

Name of initiatives	COVID-19 response			
	Introduced as a response to the crisis	Adjusted in response to the crisis	Will remain in place after the recovery period	Launched before and unrelated to the crisis
Facebook's SheMeansBusiness (Facebook)		✓	✓	
Amazon Small Business Accelerator (Amazon)	✓		✓	
Quickstart Online *(Amazon)*	✓		✓	
Accelerateur du Numerique *(Amazon)*	✓		✓	
Accelera con Amazon *(Amazon)*	✓		✓	
Despega (Amazon)	✓		✓	
Ma PME Numerique (MyDigitalSME) (Microsoft)	✓		✓	
TodosDesdeCasa (Everyone from home) (Microsoft)	✓			
Ambizione Italia per le PMI (Italian Ambition for SMEs) (Microsoft)		✓		
Virtual Mittelstand Tour (Virtual SMEs Tour) (Microsoft)	✓			
V-Hub *(Vodafone)*	✓		✓	
#Thosewhodare event *(Vodafone)*		✓		
Plans to boost your business *(Vodafone)*		✓		
Support for Partner Business Loan *(Kakao)*			✓	✓
Kakao Makers *(Kakao)*			✓	✓
Kakaowork *(Kakao)*		✓		
Free education for partners *(Kakao)*			✓	✓
Kakao Class *(Kakao)*			✓	✓
Eilot Municipality X Wix *(Wix)*	✓			
Wix Marketplace *(Wix)*			✓	✓
India Digital Trade Facilitation Forum (*PayPal*)				✓
AmCham Launchpad: The SMEs and startup navigator – Hong Kong (*PayPal*)				✓

Several of the analysed measures focussed on an inclusive recovery from the pandemic for SMEs. Private sector initiatives and programmes target disadvantaged groups such as rural and regional SMEs or women-led businesses. Facebook's *SheMeansBusiness* for examples trains over 200,000 female business owners annually, assisting them to become more digitally literate. There has also been a general shift towards strengthening SMEs that operate outside of city centres in rural and regional areas (e.g. Wix, Kakao).

4.3. Focus: Enabling the greening of SMEs and the role of digital tools on the path to a circular economy

The COVID-19 recovery presents an opportunity to place a greater emphasis on the transition to a greener and circular economy. Countries have committed to ambitious policy targets for moving towards

a more sustainable economy and these objectives have taken on a new urgency in the wake of the COVID-19 pandemic. The pandemic has triggered renewed conditions and incentives for firms to adopt more sustainable business models and "greener" practices, as also reflected in the growing focus on supporting a sustainable recovery within governments' recovery packages, often in explicit connection with the digitalisation of firms (Table 1) Table 1 (OECD, 2021[1]) (OECD, 2021[41]) (OECD D4SME Initiative, 2021[42]).

Any success in achieving environmental objectives and a green transition of economies will need to involve SMEs, given their aggregate environmental footprint. In the European Union, SMEs contribute to between 60% and 70% of industrial pollution and total industrial waste (Calogirou, 2010[43]) (Mitchell, Dimache and Roche, 2011[44]). SMEs will need to acknowledge that they are part of the problem, and many small businesses will need to become eco-adopters. Furthermore, SMEs and start-ups across different sectors can drive substantial change through eco-innovation, addressing challenges like climate change and resource efficiency (OECD, 2021[41]; OECD, 2021[45]).

Digital tools can play an important role in supporting SMEs achieving their green objectives (Berlingieri et al., 2020[46]). Digitalisation can drive resource efficiency, enhance transparency around ecological practices and provide an effective channel for education amongst entrepreneurs. SMEs can accelerate their transition towards sustainable models by implementing digitally-based eco-innovations, such as, for example, carbon footprint testing technologies, the tracing of sustainable materials in supply chains through distributed ledger technology, or the use of ecological sensors connecting with IoT devices to promote ecological practices through social media (OECD, 2021[41]).

However, engaging in greening activities whilst simultaneously transforming digitally present challenges for SMEs. SMEs often face barriers in accessing strategic resources for the transformation, such as finance, skills, knowledge and technology. Vodafone's research from 2020, shared at the D4SME webinar on *SME Digitalisation & Sustainability: the Twin Transition*, indicates that firms with less than 50 employees were the least likely to prioritise sustainability (Box 16). This can be a result of the costs associated with sustainability and digitally transforming firms, which may deter SMEs. There are other hidden fees, such as the cost of certain environmental certification, which may deter SMEs from spending time or money to apply for such verifications. Moreover, for many SMEs it can be challenging to make a significant change to supply chain sustainability without influential purchasing power (OECD, 2021[41]) (OECD D4SME Initiative, 2021[42]).

The promotion of a circular economy, in which SMEs are able to responsibly manage the lifecycles and environmental costs of using digital technology and equipment, is needed from the beginning of their digital journey. While digital technologies and practices can help SMEs become "greener", they can also have a negative impact on the environment, such as in the form of electronic waste (E-Waste), growing energy and water use and pollutant emission from technology use. The environmental footprint and energy consumption of digital technologies should be taken into consideration as an important dimension to assess in the digital transformation of SMEs.

There needs to be a business case for the SME twin transition. For many firms, increased productivity is the driving motivation to undergo a digital and sustainable transition. Combining environmental objectives with performance objectives produces a 'win-win' for a business's sustainability transformation. For example, in the agricultural sector, there is a strong economic rationale to uptake sustainable practices, because there is a consumer demand for green and sustainable products. Where there is no business rationale, there is a place for regulations to provide incentives, as observed in the waste sector (OECD D4SME Initiative, 2021[42]).

Policy makers have a role to play in enabling SMEs to overcome size related barriers. Governments can introduce programmes and initiatives to increase SMEs access to relevant digital and sustainable skills. For example, the Portuguese recovery and resilience plan, mirroring the European Commission's plan, revolves around three pillars; resilience, green transition, and digital transition. The Portuguese

structural reforms aim to create the right regulatory and institutional frameworks to enable SMEs with their recovery. The Portuguese government are investing in the digital upskilling and reskilling of SMEs across all components of their post-pandemic resilience plan. As well as access to skills, there is a need to increase knowledge on sustainable practices by SMEs. Initiatives such as a one-stop-shop model to provide SMEs with relevant information on how to operate more sustainably, would give support to small firms which, due to size and funding constrains, often do not have a sustainability officer like in larger firms (OECD D4SME Initiative, 2021[42]).

Government regulation can drive firms to adopt technologies to become more sustainable, and regulatory reforms can remove existing regulatory barriers around reuse and regeneration. Policy can encourage the twin transition through the regulation of supply chains, such as by strengthening tools and frameworks for transparency, which can help SMEs have better control over their supply chain due diligence. A policy framework would be particularly beneficial for large firms, who are often at the top of the supply chain, with important trickledown effects to small firms (OECD D4SME Initiative, 2021[42]).

Box 16. SME Digitalisation & Sustainability: The Twin Transition

The D4SME webinar on *SME Digitalisation & Sustainability: The Twin Transition* was held virtually on 11 May 2021. It gathered over 128 participants from 34 countries to discuss the connection between SME digitalisation, sustainability and resilience to "build back better" our economies and societies. The webinar focused on how digitalisation can enable SMEs, including 'traditional' ones, to be more sustainable and achieve environmental goals. There was a focus on what policy solutions governments can deploy in order to help SMEs improve their sustainability practices whilst simultaneously transforming digitally.

The panel of experts included representatives from Vodafone, the Portuguese government and green SMEs Banish, Starlab and BioFab.

SME experiences from the SME Digitalisation & Sustainability: The Twin Transition webinar

- *Banish* (Australia) is an online market place for Australian sustainable products. *Banish* saw an increase in sales throughout the pandemic and explained that this increase was a result of an increased reliance on e-commerce, as well as an increased awareness of the consumer towards their ecological footprint. *Banish* exemplifies how digital tools can power SME sustainability, providing a digital platform for small firms, many from rural and remote regions to access new consumers.
- *BioFab* (New Zealand) is an SME producing ecologically friendly packaging. *BioFab* shared how for their firm, and other businesses operating in the manufacturing sector, digital tools are able to accurately measure the carbon footprint of firms.
- *Starlab* (Span) is a tech start-up that is focused on building digital solutions around remote sensing, AI and geospatial data that assist businesses in sustainable decision making.

Source: D4SME webinar (OECD D4SME Initiative, 2021[42])

---

5. Conclusions

This policy paper provides new evidence on the role of SME digitalisation in public recovery packages across the OECD and examples of public-private cooperation and private sector initiatives. The paper is the result of a close cooperation between the OECD Secretariat, OECD governments and private sector partners of the D4SME Global Initiative, including SMEs, SME and industry associations and large digital service providers.

There are deeply-rooted barriers to the digitalisation of SMEs. SMEs face a gap vis-à-vis large firms in the uptake of digital technologies and the lack of resources to invest in ICT equipment and complementary organisational assets, including digital skills both among managers and employees. Moreover, SMEs do not always have access to fast and affordable digital infrastructure and they are often not prepared to face digital security risks.

However, there is a steady upward trend in digital uptake by SMEs, as various solutions to their medium and long-term issues are emerging. In the past decade, the participation to e-commerce by SMEs has increased across the OECD, independently of size. An upward trend is also observed in the uptake of cloud computing services, a flexible and relatively cheap solutions to scale up digital capabilities. SMEs tend to outsource to digital providers for some business functions (e.g. advertising) while they mostly perform core functions such as Big Data Analysis in-house.

The COVID-19 pandemic has accelerated the digitalisation of SMEs, a transformation that is predicted to last. A larger share of SMEs across OECD countries have adopted new digital technologies in response to the crisis. Surveys from across OECD countries highlight that a large share of SMEs are planning to continue to use the new digital tools that they have picked up during the pandemic. Through research and knowledge exchange among stakeholders, the D4SME Global Initiative has contributed to identify important trends during the crisis, as well as new opportunities and persistent challenges that will need to be addressed to build on this momentum for SME digital transition, such as to reap full benefits from the increased digital presence and participation to e-commerce, telework efficiently and increase well-being, and improve digital security and data protection practices.

Most recovery packages across OECD countries have included financial resources and programmes aimed at supporting the digitalisation of SMEs. More than 80% of the 33 OECD countries analysed have a specific "digitalisation" component as part of the "recovery packages" aimed at SMEs.

Public policy programmes often focus on enhancing external and internal conditions for SME digitalisation, but also include more targeted support. Governments have invested in setting up appropriate framework conditions and strengthening horizontal measures to spur digitalisation among SMEs, for example developing digital infrastructure and providing digital skill training. But there are examples of government providing more targeted support, for example to SME participation in e-commerce (especially if export-oriented) or to improve teleworking capabilities.

The analysis of 20 private sector initiatives by D4SME partners show how they are using their reach and resources to support the digital transition of SMEs. Programmes span from digital skills training, e-commerce guides, discounts and offers to services and products to consultancy services, coaching webinars and live events and providing access to finance. Most of these initiatives were launched in response to the COVID-19 crisis, and most are expected to stay in place after the emergency.

SMEs and SME associations are also very active in promoting digitalisation among their networks and ecosystems. The D4SME experience and survey of SMEs participants suggest that most SMEs prefer to learn from their peers, and numerous initiatives that are carried out in cooperation with local and national governments go in this direction (e.g. Australia's *Digital Champions*; Italy's *Digital Solidarity*).

This paper presented original evidence to complement the OECD analysis in this area and will be a stepping stone for future research. Some of the key aspects of SME digitalisation to build back better are only briefly outlined here, as for example the key role of the twin digital and green transition. The analysis of this and other trends in the future activities and knowledge sharing events of the D4SME, within its Programme of Work 2021-22, will provide additional evidence on how the digitalisation of SMEs is evolving across OECD countries, key lessons that can be learned for the recovery, and the role that diverse stakeholders can play to support SMEs in their digital transformation.

References

Amazon (2020), *Small business success in challenging times: 2020 Amazon European SMB Impact Report*, https://d39w7f4ix9f5s9.cloudfront.net/bf/78/0bfc1dda40b181b7dcc91638b351/amazon-eu-smb-report-2020.pdf. [23]

Andrews, D., G. Nicoletti and C. Timiliotis (2018), "Digital technology diffusion: A matter of capabilities, incentives or both?"*, OECD Economics Department Working Papers*, No. 1476, OECD Publishing, Paris, https://dx.doi.org/10.1787/7c542c16-en. [15]

Bailin Rivares, A. et al. (2019), *Like it or not? The impact of online platforms on the productivity of incumbent service providers*, OECD Publishing, Paris, https://www.oecd-ilibrary.org/economics/like-it-or-not-the-impact-of-online-platforms-on-the-productivity-of-incumbent-service_080a17ce-en (accessed on 31 August 2020). [9]

Berlingieri, G. et al. (2020), "Laggard firms, technology diffusion and its structural and policy determinants"*, OECD Science, Technology and Industry Policy Papers*, No. 86, OECD Publishing, Paris, https://dx.doi.org/10.1787/281bd7a9-en. [13]

Berlingieri, G. et al. (2020), "Laggard firms, technology diffusion and its structural and policy determinants"*, OECD Science, Technology and Industry Policy Papers*, No. 86, OECD Publishing, Paris, https://dx.doi.org/10.1787/281bd7a9-en. [46]

Bianchini, M. and I. Kwon (2021), "Enhancing SME resilience through digitalisation: the case of Korea", *OECD SME and Entrepreneurship Papers*, Vol. 27, https://doi.org/10.1787/23bd7a26-en. [14]

Bianchini, M. and V. Michalkova (2019), *Data Analytics in SMEs. Trends and Policies*, OECD Publishing, https://doi.org/10.1787/1de6c6a7-en. [7]

Bican, P. and A. Brem (2021), "Digital Business Model, Digital Transformation, Digital Entrepreneurship: Is There A Sustainable "Digital"?", *Sustainability*, https://www.mdpi.com/2071-1050/12/13/5239/htm.
[51]

Calogirou, C. (2010), "SMEs and the enviroment in the European Union", https://op.europa.eu/en/publication-detail/-/publication/aa507ab8-1a2a-4bf1-86de-5a60d14a3977.
[43]

CERT NZ (2021), *Quarterly Report: Data Lanscape 2021, January 2021 - March 2021*, https://www.cert.govt.nz/assets/Uploads/Quarterly-report/2021-q1/quarterly-report-data-landscape-2021-1-january-31-march.pdf.
[30]

Costa H., et al. (2020), *Are online platforms killing the offline star? Platform diffusion and the productivity of traditional firms*.
[10]

Deloitte (2021), *The contribution of National Recovery and Resilience Plans to achieving Europe's Digital Decade ambitions*, https://www.vodafone.com/sites/default/files/2021-06/deloitte-llp-europe-digital-decade-rrf-gap-analysis.pdf.
[33]

Digital Austria (2021), *Digital Team Österreich: Wirtschaft hilft Wirtschaft*, https://www.digitalaustria.gv.at/schwerpunktthemen/Digital_Team_Oesterreich_Wirtschaft_hilft_Wirtschaft.html.
[63]

European Commission (2021), *Smart Specialisation Platform - Digital Innovation Hubs*, https://s3platform.jrc.ec.europa.eu/digital-innovation-hubs-tool.
[36]

European Commission (2020), *An SME Strategy for a sustainable and digital Europe*, https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1593507563224&uri=CELEX:52020DC0103.
[64]

European Commission (2020), *Digital Innovation Hubs*, https://s3platform.jrc.ec.europa.eu/digital-innovation-hubs.
[35]

European DIGITAL SME Alliance (2020), *Sustainable Digitalisation: Strengthening Europe's Digital Sovereignty*, https://www.digitalsme.eu/digital/uploads/Position-paper-Sustainable-Digital-Transformation_FINAL.pdf.
[12]

European Digital SME Alliance (2021), *European Digital SME Alliance*, https://www.digitalsme.eu/.
[40]

Eurostats (2021), *Eurostat*, https://ec.europa.eu/eurostat/web/main/data/database.
[29]

Facebook (2021), *Global State of Small Business: Insights into women-led and minority-led businesses in early 2021*, https://dataforgood.fb.com/wp-content/uploads/2021/04/Global-State-of-Small-Business-Report-April-2021.pdf.
[18]

Facebook (2021), *Small Businesses Dial in Digital Marketing with Personalised Ads*, https://www.facebook.com/business/news/small-businesses-facebook-personalised-ads?form=MY01SV&OCID=MY01SV.
[62]

Facebook, OECD, The World Bank (2020), *Global State of Small Business Report: Reflection on six waves of data collection*, https://dataforgood.fb.com/wp-content/uploads/2020/12/State-of-Small-Business-Wave-VI-Report.pdf.
[21]

George, G., R. Merrill and S. Schillebeeckx (2019), "Digital Sustainability and Entrepreneurship: How Digital Innovations Are Helping Tackle Climate Change and Sustainable Development", *Entrepreneurship Theory and Practice*, https://journals.sagepub.com/doi/pdf/10.1177/1042258719899425. [52]

GlobalData (2020), *Multichannel Retail and COVID-19*, https://bit.ly/mcretail2. [49]

ITU Publication (2019), *Turning digital technology innovation into climate change*, https://www.uncclearn.org/wp-content/uploads/library/19-00405e-turning-digital-technology-innovation.pdf. [54]

Ker, D., P. Montagnier and V. Spiezia (2021), "Measuring telework in the COVID-19 pandemic", *OECD Digital Economy Papers*, No. 314, OECD Publishing, Paris, https://dx.doi.org/10.1787/0a76109f-en. [26]

KOSTAT (2019), *Supplementary Labor Type Survey Results of Economically Active Population Survey, 2019 August*, http://kostat.go.kr/portal/korea/kor_nw/3/index.board?bmode=download&bSeq=&aSeq=378318&ord=2 (accessed on 16 May 2021). [57]

Microsoft (2021), *Five ways SMBs can benefit from using Microsoft Azure to move to the cloud - US Partner Community Blog - Microsoft*, https://www.microsoft.com/en-us/us-partner-blog/2019/10/02/five-ways-smbs-can-benefit-from-using-microsoft-azure-to-move-to-the-cloud/ (accessed on 4 May 2021). [8]

Microsoft (2020), *Helping small and medium-sized businesses work remotely with Teams*, https://www.microsoft.com/en-us/microsoft-365/blog/2020/03/17/helping-smb-customers-work-remotely-microsoft-teams/ (accessed on 4 May 2021). [48]

Microsoft (2020), *Microsoft Customer Story-Ciacci Piccolomini d'Aragona winery creates a perfect blend of tradition and technology with Microsoft Teams to expand and improve business*, https://customers.microsoft.com/en-us/story/821768-ciacci-piccolomini-d-argona-consumer-goods-teams (accessed on 4 May 2021). [50]

Ministry of Internal Affairs and Communications (2019), *Telework Days 2019 Implementation Results (in Japanese)*, https://www.soumu.go.jp/main_content/000667934.pdf (accessed on 15 May 2021). [58]

Mitchell, S., A. Dimache and T. Roche (2011), "The Issue of Waste in European Manufacturing SMEs", https://www.researchgate.net/publication/344863151_THE_ISSUE_OF_WASTE_IN_EUROPEAN_MANUFACTURING_SMES. [44]

OECD (2021), "An in-depth analysis of one year of SME and entrepreneurship policy responses to COVID-19: Lessons learned for the path to recovery", *OECD SME and Entrepreneurship Papers*, No. 25, OECD Publishing, Paris, https://dx.doi.org/10.1787/6407deee-en. [22]

OECD (2021), *Enabling the greening of SMEs and fostering green entreprenruship Scoping Paper*, https://one.oecd.org/official-document/CFE/SME/(2021)7/en. [41]

OECD (2021), *ICT Access and Usage by Businesses*, https://oe.cd/bus. [25]

OECD (2021), "No net zero without SMEs: Exploring the key issues for greening SMEs and green entrepreneurship", *OECD SME and Entrepreneurship Papers*, Vol. 30, https://doi.org/10.1787/bab63915-en.   [45]

OECD (2021), *OECD Broadband statistics*, http://www.oecd.org/sti/broadband/broadband-statistics (accessed on 26 February 2021).   [55]

OECD (2021), *OECD Economic Outlook, Volume 2021 Issue 1*, OECD Publishing, Paris, https://www.oecd-ilibrary.org/sites/edfbca02-en/index.html?itemId=/content/publication/edfbca02-en.   [56]

OECD (2021), *OECD SME and Entrepreneurship Outlook 2021*, OECD Publishing, Paris.   [1]

OECD (2021), *Strengthening Economic Resilience Following the COVID-19 Crisis: A Firm and Industry Perspective*, OECD Publishing, Paris, https://dx.doi.org/10.1787/2a7081d8-en.   [27]

OECD (2021), *The Digital Transformation of SMEs*, OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris, https://dx.doi.org/10.1787/bdb9256a-en.   [3]

OECD (2021), *The role of online platforms in weathering the COVID-19 shock*, OECD, Paris, http://doi.org/10.1787/2a3b8434-en (accessed on 31 March 2021).   [11]

OECD (2020), *OECD Digital Economy Outlook 2020*, OECD Publishing, Paris, https://dx.doi.org/10.1787/bb167041-en.   [6]

OECD (2020), *OECD Digital for SMEs Initiative (D4SME)*, http://www.oecd.org/going-digital/sme (accessed on 27 March 2020).   [61]

OECD (2020), *Policy options to support digitalisation of business models during COVID-19: Annex*, https://www.oecd.org/sti/policy-options-to-support-digitalization-of-business-models-during-covid-19-annex.pdf (accessed on 28 April 2021).   [31]

OECD (2020), *Productivity gains from teleworking in the post COVID-19 era: How can public policies make it happen?*, https://www.oecd.org/coronavirus/policy-responses/productivity-gains-from-teleworking-in-the-post-covid-19-era-a5d52e99/ (accessed on 31 March 2021).   [28]

OECD (2019), *OECD SME and Entrepreneurship Outlook 2019*, OECD Publishing, Paris, https://dx.doi.org/10.1787/34907e9c-en.   [5]

OECD (2019), *OECD SME and Entrepreneurship Outlook 2019: Policy Highlights*, https://www.oecd.org/industry/smes/SME-Outlook-Highlights-FINAL.pdf.   [2]

OECD (2019), *Unpacking E-commerce: Business Models, Trends and Policies*, OECD Publishing, Paris, https://dx.doi.org/10.1787/23561431-en.   [24]

OECD (2018), "Analysing megatrends to better shape the future of tourism", *OECD Tourism Papers*, No. 2018/02, OECD Publishing, Paris, https://dx.doi.org/10.1787/d465eb68-en.   [19]

OECD (2017), *OECD Digital Economy Outlook 2017*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264276284-en.   [47]

OECD (n.d.), *OECD Studies on SMEs and Entrepreneurship*, OECD Publishing, Paris, https://dx.doi.org/10.1787/20780990.   [38]

OECD (Forthcoming), *SME Finance Scoreboard*, OECD Publishing.   [32]

64 |

OECD D4SME Initiative (2021), *2nd D4SME Roundtable: SME Digitalisation and responses to COVID-19*.

[20]

OECD D4SME Initiative (2021), *SME Digitalisation & Sustainability: The Twin Transition Key Highlights*, https://www.oecd.org/going-digital/sme/events/.

[42]

OECD D4SME Initiative (2021), *The Frontiers of Digital Learning: Bridging the digital skills gap for SMEs and entrepreneurs*, https://www.oecd.org/going-digital/sme/events/Frontiers%20of%20Digital%20Learning%20-%20Key%20Highlights%20-%20June%202021.pdf.

[16]

OECD D4SME Initiative (2020), *Roundtable Proceedings of the first D4SME Roundtable*.

[4]

OECD/European Union (2019), *The Missing Entrepreneurs 2019: Policies for Inclusive Entrepreneurship*, OECD Publishing, Paris, https://dx.doi.org/10.1787/3ed84801-en.

[37]

OliverWyman (2020), *Is e-commerce good for Europe? Economic and enviromental impact study*, https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2021/apr/is-ecommerce-good-for-europe.pdf.

[53]

Statistics Canada (2019), *Canadian Internet Use Survey*, https://www150.statcan.gc.ca/n1/daily-quotidien/191029/dq191029a-eng.htm (accessed on 15 May 2021).

[59]

Teevan, J., B. Hecht and S. Jaffe (2021), *The New Future of Work: Research from Microsoft on the Impact of the Pandemic on Work Practices*, Microsoft, https://www.microsoft.com/en-us/research/uploads/prod/2021/01/NewFutureOfWorkReport.pdf.

[39]

US Bureau of Labor Statistics (2019), *Table 1. Workers who could work at home, did work at home, and were paid for work at home, by selected characteristics, averages for the period 2017-2018*, https://www.bls.gov/news.release/flex2.t01.htm (accessed on 15 May 2021).

[60]

Vodafone (2020), *SME Digitalisation - charting a course towards resilience and recovery*, https://www.vodafone.com/sites/default/files/2020-10/sme-digitalisation.pdf.

[17]

Vodafone (2019), *Regional digital hubs could generale over Euro300 million and create nearly 9000 new jobs, according to a new economic report from Vodafone Ireland*, https://n.vodafone.ie/aboutus/press/regional-digital-hubs-could-generate-over-300-million-and-create.html.

[34]

Annex A. Private Sector Initiatives

Facebook's SheMeansBusiness (Facebook)

SheMeansBusiness enables digital and financial inclusion for women entrepreneurs to encourage females to join and leverage the digital economy.

SheMeansBusiness was launched in 2016 to empower female entrepreneurs through digital and financial inclusion. SheMeansBusiness trains over 200,000 female business owners annually. The programme operates across 38 markets, working with 40 community partners.

In some countries, Facebook actively collaborates with governments to connect female entrepreneurs to the local trainings. The programme was adjusted in response to the COVID-19 crisis and will continue in place after the recovery period.

Source: http://shemeansbusinessfb.com/

Amazon Small Business Accelerator (Amazon UK)

The Amazon Small Business Accelerator (ASBA) aims to educate local retailer who are not yet selling online about e-commerce. This initiative is for SMEs who want to grow their online business, using Amazon or more generally. This initiative is SME specific, and is a place-based initiative within the UK.

Amazon UK partnered with "Enterprise Nation", a business advisory network, to create the Amazon Small Business Accelerator (ASBA). The programme includes a self-service e-learning curriculum, events and boot camps for offline SMEs to move online, discounts and offers from third parties on business related products and services, and 12 months free Enterprise Nation membership which gives access to free 1:1 advice from 12K business experts.

Amazon cooperates with the UK Department of International Trade and the Greater London Authority in the creation and promotion of the ASBA training events. Amazon reports that the program has exceeded the initial expectations in terms of political and media interest and the number of SMEs educated across Europe.

This program is part of a greater European wider initiative that began in July 2020 in response to the pandemic with over 250 000 beneficiaries across Europe so far. ASBA will be continued independently of the development of the COVID-19 crisis.

Source: www.enterprisenation.com/accelerator

Quickstart Online (Amazon Germany)

In Germany, Amazon cooperates with Germany's largest trade association HDE, the SME COVID support organization "Merchants helping merchants" as well as more than 20 other private sector companies and coaches on the programme *Quickstart Online. Quickstart Online* is a website that offers free webinars, videos and brochures across more than 30 themes such as fundamental principles of e-commerce, logistics and online marketing.

The program was launched in September 2020 in response to the pandemic and is part of a greater European wide initiative which has reached over 250 000 beneficiaries across Europe so far. It will be continued independently of the development of the COVID-19 crisis.

Source: www.quickstart-online.de

Accelerateur du Numerique (Amazon France)

Amazon created Accelerateur du Numerique, a free learning website including a self-service e-learning curriculum and webinars from private partners or Amazon experts. This initiative is targeted exclusively to French SMEs.

The program was launched in December 2020 in response to the pandemic and is part of a greater European wide initiative which has reached over 250 000 beneficiaries across Europe so far. It will be continued independently of the development of the COVID-19 crisis.

Source: www.accelerateur-du-numerique.fr

Accelera con Amazon (Amazon Italy)

Amazon launched Accelera con Amazon, a cost free program to provide education and support for 10K SMBs and entrepreneurs to develop digital competencies and successfully sell their products online (Amazon or any other channel).

The program offers several initiatives, including an E-Learning hub and Virtual Bootcamps in collaboration with MIP-Politecnico di Milano Business schools and Virtual Academies, in partnerships with national institutions and sector associations (such as ITA-Italian trade agency, Confapi, Confagricoltura).

The program was launched in November 2020 in response to the pandemic and is part of a greater European wide initiative which has reached over 250 000 beneficiaries across Europe so far. It will be continued independently of the development of the COVID-19 crisis.

Source: services.amazon.it/accelera-con-amazon.html

Despega (Amazon Spain)

In Spain, Amazon launched the Small Business digitization programme Despega. Amazon cooperates with several national associations (Cepyme, AECOC), national and regional government agencies (Spanish Exports Agency, Catalonian Agency for business competitiveness, Castilla-La Mancha Exports Agency) as well as with IE University on the design and implementation of the initiative. The e-commerce education programme offers an e-learning platform, webinars, and boot camps.

The program was launched in September 2020 in response to the pandemic and is part of a greater European wide initiative which has reached over 250 000 beneficiaries across Europe so far. It will be continued independently of the development of the COVID-19crisis.

Source: https://sell.amazon.es/despega

Ma PME Numerique (MyDigitalSME) (Microsoft)

In 2020, Microsoft France launched the project My Digital SME to provide concrete answers to the challenges of economic recovery of SMEs around three pillars: digital training, the provision of solutions adapted to their needs and local support through the local ecosystem. For example, it offers a set of free

courses to consume anywhere and at any time. The online courses have been designed by Microsoft experts for employees and SME executives.

The initiative was designed in response to the COVID-19 crisis and will remain in place after the recovery period.

Source: https://experiences.microsoft.fr/categorie/mapmenumerique/

TodosDesdeCasa (Everyone from home) (Microsoft)

Launched in March 2020, Todos Desde Casa is a platform co-launched by Microsoft Spain. The platform has been connecting technology companies and private volunteers offering solidarity resources, knowledge and experiences to help enable telework environments for SMEs that need to start working remotely in response to the pandemic.

This initiative has a regional focus within Spain, with Microsoft cooperating with the relevant Spanish public entities. There are over 100 Spanish collaborating organizations.

Source: https://www.todosdesdecasa.es/

Ambizione Italia per le PMI (Italian Ambition for SMEs) (Microsoft)

Ambizione Italia per le PMI is a Microsoft Italy project that leverages the digital knowhow of Microsoft and its partners, accompanying Italian SMEs along their innovation journeys. The objective of this initiative is to inspire a digital culture amongst Italians SMEs.

This Microsoft Italy project leverages on technological know-how and its partners spread throughout the country to accompany the country's SMEs in the path of innovation, inspiring the spread of a digital culture. The programme focuses on Made-in-Italy, sharing digital success stories and first hand experiences to disseminate good practices for an Italian SME digital transformation. The programme includes digital training and re-skilling initiatives to support SMEs smart working.

The initiative existed pre-COVID-19, but was adjusted in response to the pandemic.

Source: https://www.microsoft.com/it-it/ambizioneitalia/pmidigitali

Virtual Mittelstand Tour (Virtual SMEs Tour) (Microsoft)

Microsoft Germany introduced this program in response to the COVID-19 crisis to support German SMEs with adopting technology, sharing tips and resources that are specifically tailored to their needs. The virtual SME tour beginning in April 2020 was part of this effort. The programme consists of webcasts and webinars.

Source: https://news.microsoft.com/de-de/microsoft-virtual-mittelstand-tour/

V-Hub (Vodafone)

Vodafone's *V-Hub* is a digital hub that provides SMEs across Europe access to online information and free online advice with relevant experts. This initiative is part of Vodafone's strategy to support SMEs through their digitalisation journey to enable them to deliver wider business objectives.

V-Hub is exclusively targeted towards SMEs and focusses solely on the regions in which Vodafone operates. The services provided include online training for up-skilling, business development services such as legal advice, 'chat and call' services. There are plans in the future to expand V-Hub to include an SME

community that share experiences. The digital advisory service for SMEs covers relevant topics such as security, teleworking, digital skills and advice on COVID-19 recovery funds and services available by national governments and the EU.

V-Hub was launched in July 2020 and has had over 1.6 million unique visitors since the website went live. The digital hub was launched in response to the pandemic and will remain in place after the recovery period.

Source: https://www.vodafone.co.uk/business/sme-business

#Thosewhodare event (Vodafone)

The #Thosewhodare virtual event was designed with the objective to inspire SMEs about the future of their business and the potential for business growth. The event was hosted in partnership with multiple partners including Microsoft, Google, Spotify, Unreasonable Group.

The five day virtual event focussed on different themes that were targeted specifically for SMEs: business resilience; changing social attitudes & behaviours; sustainability; digital & data; talent & retention. The event included over 40 industry leaders who shared their business experience.

The five day event ran over the week of the 17th of May 2021. There were over 16,000 live views and in the period following the event, and over 50,000 views of the available on-demand content so far (content is still available). The format of the event was adjusted in response to COVID-19 restrictions.

Source: https://www.vodafone.co.uk/business/sme-business/those-who-dare?icmp=TWD-Event-landing-page

Plans to boost your business (Vodafone)

Vodafone's *Plans to boost your business* initiative aims to assist SMEs in identifying new customers by growing their online business. The digital toolkit focusses on enabling SMEs to grow their website, e-commerce and digital security capabilities. Vodafone has partnered with other private sector actors which vary depending on which country the programme is active in e.g. Wix, BeeDigital, Sitoweb.

The initiative was launched in May 2021 and was adjusted in response to the COVID-19 crisis.

Source: https://www.vodafone.co.uk/business/business-apps/wix-website-builder

Support for Partner Business Loan (Kakao)

The objective of this programme is to enable SMEs to have better access to finance. This initiative is specifically targeted towards SMEs. Kakao supports its business partners to access loans with lower interest rates than available on the market.

This initiative was launched before the crisis and has been boosted in response to the pandemic.

Source: https://winwin.kakao.com/partner/support

Kakao Makers (Kakao)

Kakao Makers is a digital platform that provides SMEs and start-ups with opportunities for product development and mass-customization.

The e-commerce platform allows SMEs to actualize mass customization. SMEs pre-order per item and then begin the production period only when a certain level of demand is secured. This is the most effective supply solution for SMEs who cannot risk expanding of diversifying their supply chain due to inventory risk.

The platform is specifically targeted towards SMEs and was launched before the COVID-19 crisis.

Source: https://makers.kakao.com/aboutus

Kakaowork (Kakao)

Kakaowork provides a free version of Kakao's services and platform including messaging platform, live conference call, custom bot development (API access), management tools (e-approval and attendance management system) and default functions. Kakao Work also offers unlimited storage to support SMEs in the COVID-19 pandemic.

Kakaowork is targeted towards firms of all size. The initiative was adjusted in response to the pandemic.

Source: https://www.kakaowork.com/

Free education for partners (Kakao)

Kakao's *Free education for partners* is a free online education program targeted specifically to SMEs.

'Kakao edu' offers employees of SMEs education content including digital skills. The 'Kakao Business Seminar' offers free online seminars to SMEs who would like to increase their ability to engage with contactless marketing solutions throughout the COVID-19 pandemic. These education programmes have a focus towards skill development specifically relevant for Kakao's business marketing tools.

Source: https://winwin.kakao.com/partner/support

Kakao Class (Kakao)

Kakao Class is a training program provided by Kakao and the Jeju Center for Creative Economy & Innovation in order to support Kakao's partners, future entrepreneurs, small business owners and creators by providing lectures on how to utilize Kakao service platforms within their businesses. This programme also includes mentoring sessions led by Kakao service managers.

This initiative was launched before the COVID-19 crisis and is unrelated to the pandemic.

Source: https://www.kakaocorp.com/page/detail/9425

Eilot Municipality X Wix (Wix)

Eilot municipality, a small rural region in Israel, wanted to accelerate the digitalisation of their SMEs during the COVID-19 lockdown period to ensure these businesses remained in operation. The local government hired website developers and encouraged the entire SME community within the region to sign up for the programme. Over 80 businesses that applied to the initiative received a free website and skill development to ensure they have the knowledge to operate their website. Wix granted each of these businesses a voucher for the first year. Similar programs have since been duplicated in other, bigger municipalities in Israel. This is an example of the way big technology firms can cooperate with small municipalities and local governments.

Source: https://www.wix.com

Wix Marketplace (Wix)

Through Wix Marketplace, governments can partner with local agencies which will provide businesses with easy digitalisation solutions. Wix professionals can then assist businesses in designing and promoting their website and set up an online store.

Source: https://support.wix.com/en/wix-partners/the-wix-marketplace-for-partners

Starting a Business in Flanders (Microsoft)

The Flanders government of Belgium cooperated with Microsoft, along with other private sector actors within the open standards community, to streamline access to government services using a digital identity. The development of a decentralized identity and verifiable credentials allows businesses to have greater verifiability whilst protecting individual privacy. Administrative bottlenecks for opening a business in Flanders, such as obtaining a proof of age and minimum legal capital are now lowered for SMEs and entrepreneurs. This pilot programme illustrated how the use of decentralized identity technology can lower the administrative burden for citizens, whilst increasing their trust in the government.

Source: https://customers.microsoft.com/en-us/story/1351115614634143059-flanders-government-of-belgium-government-azure-active-directory

India Digital Trade Facilitation Forum: PayPal India & Indian Institute of Foreign Trade (PayPal)

PayPal India and the Indian Institute of Foreign Trade (IIFT) hosted a webinar highlighting the opportunities for Indian SME's to tap into the global consumer value chain and increase export of Made in India goods and services. The initiative is called India Digital Trade Facilitation Forum (IDTFF).

PayPal India in association with IIFT partnered with the state governments to provide tools to help businesses stay afloat throughout COVID-19. There is a focus on India's IT services & IT-led freelancing community.

Source: https://www.thehansindia.com/news/cities/bengaluru/paypal-cii-partner-to-enable-indian-msmes-connect-with-global-consumers-667367

AmCham Launchpad: The SMEs and startup navigator – Hong Kong (PayPal)

AmCham HK launched the PayPal Center of Excellence to provide information and resources on business intelligence, trends, and a platform for SMEs to access curated offerings to meet business needs. The Center also provides opportunities for SMEs to connect with other companies and large firms to develop commercial partnerships.

Source: https://www.amcham.org.hk/amcham-launchpad-smes-startup-navigator