STUDY

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SME focus - Long-term strategy for the European industrial future

Policy Department for Economic, Scientific and Quality of Life Policies
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SME focus - Long-term strategy for the European industrial future

Abstract

This study focuses on the role of SMEs in Europe's long-term industrial strategy. It presents the recent SME and digital strategies, together with the European Green Deal. The author recommends the rigorous application of the *Think Small First* principle in impact assessments for legislation and policy evaluations, the development of different strategies for different SME segments, arguing in favour of an SME support policy which mirrors the ambition of the digital and green transitions.

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AI	Artificial Intelligence
CAP	Circular Economy Action Plan
CEF	Connecting Europe Facility
CF	Cohesion Fund
CIP	Competitiveness and Innovation Framework Programme
CoR	Committee of the Regions
COSME	Competitiveness of Enterprises and SMEs
DEI	Digitising European Industry Initiative
DEP	Digital Europe Programme
DESI	Digital Economy and Society Index
DIH	Digital Innovatin Hubs
DSM	Digital Single Market
DT	Digital Transition
EAFRD	European Agricultural Fund for Regional Development
EASME	Executive Agency for Small and Medium-sized Enterprises
EC	European Commission
ECBF	European Circular Bioeconomy Fund
EcoAP	Co-innovation Action Plan
EEN	Enterprise Europe Network
EFSI	European Fund for Strategic Investments
EGD	European Green Deal
EIAH	Euroean Investment Advisory Hub
EIB	European Investment Bank
EIC	European Innovation Council
eID regulation	Regulation (EU) N°910/2014 on electronic identification and trust services for electronic transactions in the internal market
EIF	European Investment Fund
EIPP	European Investment Project Portal
EIT	European Institute of Innovation and Technology
EMFF	European Maritime and Fisheries Fund
ERDF	European Regional Development Fund
EREK	European Resource Efficiency Knowledge Centre

ESF	European Social Fund
ESIF	European Structural and Investment Funds
EUREKA	An intergovernmental network facilitating innovation, providing a platform for international research, development and innovation co-operation
FET	Future and Emerging Technologies
FTI	Fast Track to Innovation
GAP	Green Action Plan
H2020	Horizon 2020
HPC	High-performance computing
I4MS	ICT Innovation for Manufacturing SMEs
ICT	Information and Communication technologies
InnovFin	EU Finance for innovators
IPI	Initial Public Offering
ITRE	(Committee on) Industry, Research and Energy (of the European Parliament)
KIC	Knowledge and Innovation Communities
LEIT	Leadership in Enabling and Industrial Technologies
LIFE	Programme for the Environment and Climate Action
MFF	Multiannual Financial Framework
MS	European Member State
MSME	Micro, small and medium-sized enterprises
NCAP	New Circular Economy Action Plan
PF4EE	Private Finance for Energy Efficiency
R&D	Research and Development
REACH regulation	Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorisation and Restriction of Chemicals
REFIT	Regulatory fitness and performance programme
RTOS	Research and Technology Organisations
SBA	Small Business Act
SDG	Sustanable Development Goals
SME	Small and medium-sized enterprises
SMEI	SME Instrument
UEAPME	Now called SME United - the association of crafts and SMEs in Europe
VC	Venture capital

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EXECUTIVE SUMMARY

The aims of this analytical study on *'SME focus - Long-term strategy for the European industrial future'*, are to: inform the general debate about the role of an EU coordinated and integrated industrial policy in contributing to the competitiveness of Europe's enterprises in a future-ready economy that takes into account digital transition and carbon neutrality; provide independent expert opinion to enable Members of the ITRE committee to establish their own views, in particular regarding strategic topics that may give rise to future political initiatives; and, to describe the range of EU policies, that are dedicated to supporting SMEs and their evolution in the context of a new EU strategy.

Europe's long-term industrial strategy and SMEs

In recent years there has been a demand for a cohesive and coherent long-term industrial strategy for the EU. The *New Industrial Policy Strategy* of 2017 was a major step in this direction and focused on two main thematic concerns: digitalisation and the green economy, supported by a range of initiatives. Subsequently there has been a call for an industrial policy looking ahead to 2030. At the same time it became apparent that little had been done on the overall industrial strategy front regarding SMEs specifically since the *Small Business Act* and the establishment of the *Think Small First* principle.

Among the initiatives to support the political goals of the new commission is the launch of a European Green Deal and creation of a Digital Europe (the twin transition) as key drivers of a long-term sustainable industrial strategy. The *New Industrial Strategy for Europe* and the *SME strategy for a sustainable and digital Europe* aim to support the implementation of the twin transition.

The *SME strategy* is built on recognition of the heterogeneity of the EU's 23 million SMEs and their different needs from the point of view of making the transition. It is based on three pillars: capacity building and support; reducing regulatory burdens and improving market access; and, improved access to finance.

A review of funding for programmes supporting SMEs, and in particular for support with the twin transition, indicates that there is substantial scope for support under the EU's various budget headings - also when looking ahead to the 2021-2027 budget. However, it is not possible without further research to obtain a robust understanding of the extent to which SMEs active in the sectors covered by the twin transition have benefitted from such support, as a great deal of that support is carried out at Member State (MS) level through structural fund operational programmes.

The *SME strategy* aims to mainstream existing programmes to focus on sustainability and digitalisation and introduces some new instruments such as sustainability advisers based in the Enterprise Europe Network, a high-level SME-envoy, a Single Market Enforcement Task Force, an EU Start-up Nations Standard, and a Chief Trade Enforcement Officer, which will have to prove their worth in the coming years.

Europe's SMEs: a snapshot - profile

The nature of the challenge involved in transitioning Europe's SMEs into a sustainable digital future is made more concrete when considering the actual number of SMEs in the EU-27, their distribution throughout and within MSs in terms of shares of micro, small and medium-sized enterprises, bearing in mind the generally accepted policy principle that the smaller the enterprise the harder it is for it to comply with policy or legislation. There are also widely diverging responses within the SME population to innovation (leaders to laggards) that need to be catered for in policy implementation and support. It remains to be seen to what extent the *SME strategy* will encompass the whole SME population in moving towards the twin transition.

The European Green Deal (EGD)

The EGD builds on previous environmental policies but puts environmental policy at the centre of the EU's industrial strategy. Implementing the EGD and associated New Circular Economy Action Plan (NCAP) requires a very deep industrial transformation and as such will have major impacts on SMEs. The timetable of the EGD Roadmap is very demanding and there is a concern that policies and legislation will not be thoroughly assessed in terms of the *Think Small First* principle. The EGD presents opportunities and challenges for SMEs but different segments of the SME population will respond in different ways and opportunities and challenges are unlikely to be evenly distributed in the SME population.

To mirror the scale of transformation envisaged, equally wide-ranging transformation support should be put in place. Elements of support are present in the *SME Strategy*, but they will need time to become operational on the ground, be monitored, evaluated and adjusted as required to be effective and efficient to suit the specific circumstances of SMEs and their industrial environments. Different strategies are required for the different segments of the SME population.

Concerns have been expressed about costs of additional regulation and administrative burdens, and inconsistencies in existing environmental legislation and/ or weak implementation thereof. The challenges involved in the transition of SMEs to a sustainable future which does not necessarily impact their bottom line in a positive way have been exhaustively researched and should not be underestimated.

The Digital Transition

A wide range of policy statements express the view that the EU is lagging in terms of its digital potential with a resulting negative impact on competitiveness. It appears this may be the case particularly in MSs with the largest numbers of SMEs, and especially micro enterprises. There have been several major initiatives in support of digital transition, including the Digitising European Industry Initiative and the upcoming Digital Europe programme. The Communication on *Shaping Europe's Digital Future* provides an indication of the direction of movement and what is envisaged for SMEs in terms of opportunities and support.

Key elements of the *Digital Future* for SMEs include better access to the single market and to support through Digital Innovation Hubs (DIHs). However, there are questions surrounding the targeted client base of the DIHs and whether they will be suited to the wide range of SMEs including those at digital entry level. There are also structural barriers for the continued digitalisation of SMEs that need to be resolved, particularly in terms of access to and fragmentation of data. Individual barriers to SME transition are clearly identified but the so-called 'Dark side' of digital transition may have been underplayed in Commission policy communications.

Recommendations

The main recommendations from the study are to apply the *Think Small First* principle rigorously in impact assessments for EU legislation and in evaluations of EU policy; to address existing issues in EU legislation before adding much new law; to develop strategies for different segments of the SME population (not for SMEs as a whole); and, to mirror the profound twin transition envisaged in EU industry with appropriate support for the transition.

1. INTRODUCTION

KEY FINDINGS

The Commission has launched a range of communications regarding industrial strategy and SME strategy in support of the European Green Deal (EGD) and Digital Transition (DT) for the EU.

These strategies are wide-ranging and mainstream existing programmes towards supporting sustainability and digitalisation, and also introduce some new elements, the impacts of which remain to be seen. Both the EGD and the DT imply a very profound transformation of industry, and policy will have to be implemented in a way that reaches the diverse segments of the SME population.

There are both external structural and internal firm-level factors impeding the transition. In the case of the EGD there are issues regarding existing legislation to be resolved; in the DT access to data is a major issue. Enterprise level challenges include awareness, access to finance, skills, uncertain pay-back, and risks.

Looking ahead policy should rigorously apply the *Think Small First* principle, bearing in mind the wide variety of SMEs in the EU's SME population, and ensure that appropriate support is in place for SMEs so that they can undertake the transition successfully.

1.1. Aims of the study

The aims of this analytical study on ***'SME focus - Long-term strategy for the European industrial future'*** are to:

- **inform the general debate** about the role of an EU coordinated and integrated industrial policy in contributing to the competitiveness of Europe's enterprises in a future-ready economy that takes into account digital transition and carbon neutrality;
- **provide independent expert opinion** to enable Members of the ITRE committee to establish their own view, in particular regarding strategic topics that may give rise to future political initiatives; and,
- **describe the range of EU policies**, which are dedicated to support SMEs and their evolution in the context of a new EU strategy.

1.2. Scope

The analysis provides an overview of current SME policies and describes in a synthetic manner the adequacy of current SME policies for the new strategic objectives underpinned by the Green Deal and the Digital Transition. In view of the long-term challenges, the analysis indicates whether there is a need to reinforce or reorient some policies and identifies areas of possible initiatives. The analysis also identifies bottlenecks that may affect future industrial SME take-up.

1.3. Structure of the report

The study is structured as follows: Section 2 provides a short review of the Commission's approach to long-term industrial policy and SMEs, and some contextual data on European SMEs. Section 3 provides an overview of the main EU budget headings for SME programmes. Section 4 sets out the position of SMEs in the European Green Deal (EGD) and the Digital Transition (DT), also identifying challenges faced by SMEs in adjusting to green and digital initiatives. Section 5 concludes and makes some suggestions regarding long-term industrial policy for the future for SMEs.

2. EUROPE'S LONG-TERM INDUSTRIAL STRATEGY AND SMES

This section sets out, first, in summary form, recent developments in long-term industrial strategy that form the backdrop to this study. Then conceptual and empirical aspects concerning European SMEs are presented.

2.1. Long-term industrial policy in the EU

The development of EU industrial policy since the 1960's has been well documented.[1] A major theme in the evolution of EU industrial policy has been the development of an increasingly coherent long-term orientation to underpin and drive structural change.

2.1.1. The New Industrial Policy Strategy

From the point of view of this study, the story starts with the European Commission's launch of **The New Industrial Policy Strategy**[2] (2017) which identified six integrated and coherent pillars of action: innovation; investment; the international dimension; the single market and empowering people; going digital; and, the circular and low carbon economy. The actions would be carried out in partnership with Member States (MSs), regions, cities and the private sector. Whilst the pillars are in theory on an equal footing, in practice some Commission officials categorise these as having **two main thematic concerns – digitalisation and the green economy**; plus four 'I's' – internal market, investments, innovation, internationalisation; and, partnership.[3]

2.1.2. A long-term strategy for Europe's industrial future: the Vision for 2030

On 27 May 2019, the Council of the EU called for **An EU Industrial Policy Strategy: a Vision for 2030**[4]**,** in which 'due regard should be paid to an improved business environment for small and medium-sized enterprises (SMEs), skills development and the social dimension', and identified areas that deserve attention including: key strategic value chains, support to the Digitising European Industry and Artificial Intelligence strategy, the new Digital Europe Programme, the Commission's 'A Clean Planet for all' Communication[5] and transition towards a climate-neutral and circular economy, and the Circular Economy Action Plan.

The Council emphasised the importance of micro-enterprises and SMEs (MSMEs) for the competitiveness of the EU economy, the relevance of the *Small Business Act*[6] and continued provision of access to global value chains, scaling-up, innovation and finance, through the SME Window of the InvestEU Programme, Horizon Europe and EIC instruments to support the structural transformation of industry. Clusters and the new Interregional Innovation Investment Instrument under Cohesion Policy to develop EU value chains are considered key implementation tools.

In June 2019 a **Vision for Industry 2030**[7] proposed a new European integrated industrial model which requires increased innovation and technology take-up, transition to climate-neutral industry, strengthening global competitiveness and focus on people, skills and values.

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1 Centre for Strategy and Evaluation Services LLP (2016); Industry 4.0, ITRE committee, European Parliament, Policy Department for Economic, Scientific and Quality of Life Policies, Directorate-General for Internal Policies, pp.11-15; and, CSIL, University of Bari and CERPEM, University of Warsaw and EUROREG (2019), How to tackle challenges in a future-oriented EU industrial strategy? ITRE committee, European Parliament, Policy Department for Economic, Scientific and Quality of Life Policies, Directorate-General for Internal Policies, Sections 2-3

2 European Commission, Brussels, 13.9.2017, COM(2017) 479 final. "Investing in a smart, innovative and sustainable industry - a renewed EU Industrial Policy Strategy"

3 Ibid., p.33

4 Brussels, 27 May 2019 (OR. en) 9706/19 COMPET 433 IND 185 MI 476

5 Brussels, 28.11.2018 COM(2018) 773 final. 'A Clean Planet for all. A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy'

6 European Commission COM(2008) 394 final. "Think Small First" A "Small Business Act" for Europe {SEC(2008) 2101} {SEC(2008) 2102}

7 High level industrial roundtable (2019); A vision for Industry until 2030 Report and Factsheet, European Commission, DGGROW

Then, on the 5th of November 2019, the Commission published recommendations from the *Strategic Forum on Important Projects of Common European Interest*[8] to boost EU competitiveness and global leadership in six strategic and future-oriented industrial sectors: connected, clean and autonomous vehicles; hydrogen technologies and systems; smart health; Industrial Internet of Things; low-carbon industry; and cybersecurity.

On the 26th of November Industry4Europe, a coalition of 149 sector associations, published a Joint Paper on **'A long-term strategy for Europe's Industrial future: from words to action'** which makes explicit reference to the New Political Guidelines of the new President of the EC.

2.1.3. The New Political Guidelines

The new **Political Guidelines for the next European Commission 2019-2024**[9] set out six themes and supporting policy measures: a European Green Deal; an economy that works for people; a Europe fit for the digital age; protecting our European way of life; a stronger Europe in the world; and, a new push for European democracy. This study focuses on the **European Green Deal** (EGD) and a **Europe fit for the digital age** (the 'twin transition').

2.1.4. A New Industrial Strategy for Europe

On the 10th of March 2020, the EC published a Communication on *A New Industrial Strategy for Europe*.[10] This was part of a package of communications including *An SME strategy for a sustainable and digital Europe* (see below), a *Strategy for the Single Market* and a *Strategy for enforcement and implementation of the Single Market*.

The *New Industrial Strategy* will be informed by support for EU sovereignty, while implementing the twin transition in the Political Guidelines and the Council's Strategic Agenda 2019-24. The strategy is to be entrepreneurial and co-designed with social partners and other stakeholders, will maintain Europe's social and environmental standards, its locational attractions, and be based on the European Pillar of Social Rights, while supporting competitive sustainability.

The strategy has three drivers: a globally competitive industry, climate-neutrality, and an industry shaped by a digital future. The next five years are seen as decisive for this industrial transformation which is to be underpinned by a set of enabling conditions: a deeper and more integrated digital single market; a global level playing field; support for industry towards climate neutrality; building a more circular economy; a spirit of industrial innovation; skilling and reskilling; and, financing the transition. This strategy is aimed at supporting the EU's industrial and strategic autonomy; and requires a partnership approach with MSs and regions to be implemented.

2.2. SME policy

2.2.1. The evolution of SME policy in the EU

Within the flurry of industrial strategies generated in recent years, there has not been much explicit mention of SMEs until the publication of the *SME Strategy* in March 2020,[11] even though, for some years, the accepted view within the EU has been that SMEs are the backbone of the EU economy. The EC has worked to create a small-business friendly environment – both for existing and new businesses - as one of the EU's main objectives, in close co-operation with MSs.[12] SME policy took shape with the adoption

[8] Report of the Strategic Forum for Important Projects of Common European Interest (2019) Strengthening Strategic Value Chains for a future-ready EU industry, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, European Commission

[9] Von der Leyen, U. (2019); A Union that strives for more: my agenda for Europe

[10] Brussels, 10.3.2020 COM(2020) 102 final. A New Industrial Strategy for Europe

[11] Brussels, 10.3.2020 COM(2020) 103 final. An SME strategy for a sustainable and digital Europe

[12] Interreg Europe (2016); Policy Learning Platform – SME Competitiveness Policy Brief: The SME policy of the European Union

of the **European Charter for Small Enterprises** in 2000.[13] The Charter recommends 10 ways which governments can improve the business environment for SMEs.

A comprehensive EU SME policy framework was developed with the implementation of the **Small Business Act**[14] (SBA) in 2008. It aims to improve the approach to entrepreneurship in Europe, simplify regulations and remove existing barriers for SMEs by establishing the *Think Small First* principle. The SBA sets out ten principles by which the EU intends to strengthen SMEs. The EC has also put forward suggestions regarding how MS can implement the principles, and revised the SBA to ensure that it is fit for purpose. The **SME Performance Review** monitors and assesses progress in implementing the SBA and performance of SMEs.

2.2.2. An SME strategy for a sustainable and digital Europe

The March 2020 Communication for **An SME strategy for a sustainable and digital Europe** recognises the diversity of the SME population and SMEs' needs (not just growth/scale-up but also competitiveness, resilience and stability). Building on the existing SME policy framework, the objective is to considerably increase the number of SMEs engaging in the green and digital transition. The ultimate goal is to make Europe the most attractive place to start, grow and scale-up a new business in the single market.

In order to achieve its goals, the strategy adopts a comprehensive, horizontal approach but also targets specific needs. The strategy is based on the following three pillars:

- **Capacity building and support for the twin transition,** which includes: provision of dedicated Sustainability Advisors for the Enterprise Europe Network; support through the Energy Resource Efficiency Knowledge Centre (EREK); disruptive start-up funding through the European Innovation Council (EIC); increased openness to SMEs of the European Institute of Innovation and Technology's (EIT) Knowledge and Innovation Communities (KICs); a network of up to 240 Digital Innovation Hubs (DIHs); fair access to data (see 4.2.2); an Intellectual Property Action Plan; Digital Crash Courses; a SME component in the Pact for Skills; and, support for the collaborative economy.
- **Reducing regulatory burdens and improving market access,** which includes: a Single Market Enforcement Task Force to minimise barriers in terms of regulations, standards, labels and administrative formalities; regulatory fitness screening; the 'one-in, one-out' principle; EU SME-envoy screening; launching an EU Start-up Nations Standard; Border Regions partnerships; providing a Single Digital Gateway; mutual recognition alliances; European Defence Fund, mapping RTOs and university capabilities; increasing space sector scale-ups; public procurement to lead markets and use 'SME-friendly' practices (regulatory sand boxes); a Business Transfer friendly environment; fairness in value chains – late payments monitoring and enforcement; open global markets (rule-based and SME chapters); support for Trade Defence Instruments – a Chief Trade Enforcement Officer; and, expanding Erasmus for Young Entrepreneurs.
- **Improved access to finance by providing:** continued support for access to a wide range of financing options; diversifying sources of finance - VC and non-EU; new EC risk-sharing with the private sector; an SME IPO Fund; support for Fintech; a review of state aid rules; a gender-SMART financing initiative; an EU Investment plan to support more than 1 million SMEs; through the InvestEU SME window – guarantees and VC, and encouraging leverage from other sources; and, measures to address geographical imbalances and skills issues.

[13] European Commission, D G Enterprise (2000); The European Charter for Small Enterprises, (Annex III of the Presidency conclusions of the Santa Maria da Feira European Council, which took place on 19 and 20 June 2000)

[14] European Commission 25.6.2008 COM(2008) 394 final. "Think Small First" A "Small Business Act" for Europe {SEC(2008) 2101} {SEC(2008) 2102}

The policy is to be i*mplemented* through an EU-MS delivery partnership, with strong collaboration at EU-national-regional-local levels, and provision of a renewed mandate for SME Envoys and appointment of a high-level SME Envoy. There are also to be Strategic Entrepreneurship Ambassadors (from the private sector), and regular dialogue with Regulatory Scrutiny Board.

This communication is **the first major SME policy statement for some time** and as such is to be welcomed. It contains several new elements, although there are questions surrounding them. For example – what impact can sustainability advisors (how many, where) be expected to make? Will the DIHs (see 4.2.2) address the broad base of SMEs or selected segments? Will the Single Market Enforcement Task Force lead to a significant increase in cross-border SME business? How will addition of another layer of bureaucracy – an EU SME Envoy – change things – was the SME Envoy network not working well enough? What will the impact of a Chief Trade Enforcement Officer be when so few SMEs export outside the EU? How will an EU IPO fund for SMEs work in an era of very low interest rates and strong Private Equity?

While there are clearly many questions to be asked of the strategy, it does serve a very valuable purpose by reminding EU and national institutions to *Think Small First*. Also, the Communication draws together a wide range of initiatives and while many of them have been on-going, provides a refocusing on SME needs. A significant part of the responsibility for implementation lies with MSs (see 3.1.2).

2.3. A snapshot - profile of Europe's SMEs

In order to provide a contextual setting for the discussion which follows, this sub-section provides some conceptual and quantitative detail on the European SME landscape. Across the EU Member States, SMEs make a significant contribution to the 'non-financial business economy'. In 2018, some 23 million or 99.8% of EU firms were SMEs, and 93% were micro firms. They generated €4,357 billion of value added and employed 97.7 million people. SMEs accounted for two thirds of overall employment and 56.4% of overall value added in the 'non-financial business economy'.[15]

2.3.1. What is a SME?

The term 'SME' is open to different perceptions. At one extreme, SMEs are seen as dynamic, flexible organisations that can readily adjust to changes in circumstances, giving them a competitive advantage. At the other extreme, SMEs are seen as financially constrained, conservative, inflexible, and averse to innovation. Of course, there are so many SMEs that both these extreme perceptions, and many more, can be accommodated in the term. Most SMEs are **family businesses**.[16]

2.3.2. Defining SMEs

In the EU SMEs are defined according to the criteria in the table below. There are other definitions.

Table 1: The definition of Small and medium-sized enterprises (SMEs)[17]

Company category	Staff headcount	Turnover	or	Balance sheet total
Medium-sized	< 250	≤ € 50 m		≤ € 43 m
Small	< 50	≤ € 10 m		≤ € 10 m
Micro	< 10	≤ € 2 m		≤ € 2 m

Source: European Commission

[15] European Commission, 2019 SBA Fact Sheet & Scoreboard, p.1

[16] EFB, KPMG (2017); European Family Business Barometer Confidence in Unity, Sixth edition, p.4

[17] As defined in the EU recommendation 2003/361 (there is a 54-page guide for using the SME definition). Although it is often asserted that SMEs account for over 99% of businesses in the EU and more than two thirds of employment it was pointed out in the 2012 *Evaluation of the SME Definition* for DG Enterprise by CSES, that this is not completely correct

For example, in the USA, to benefit from some government programmes, the Small Business Administration defines a small business as one with less than 500 employees.[18] In Germany, definition of the *Mittelstand* as a statistical category is firms with less than 500 employees. In Australia, micro businesses have 1–4 employees, small 5–19, medium 20–199, and large businesses 200 or more.

2.3.3. How many SMEs are there, where are they and what are they doing?

How many SMEs are there, how many people do they employ and how much value do they add?

The distribution EU-27 enterprises in terms of numbers, employment and added value by size (employment), is presented in the following tables. The data suggest that whereas an 'average' SME has approximately 4 employees, the 'average' large enterprise has nearly a 1000.

Table 2: European SMEs[19] (numbers–millions; employment–millions, value added-€billions)

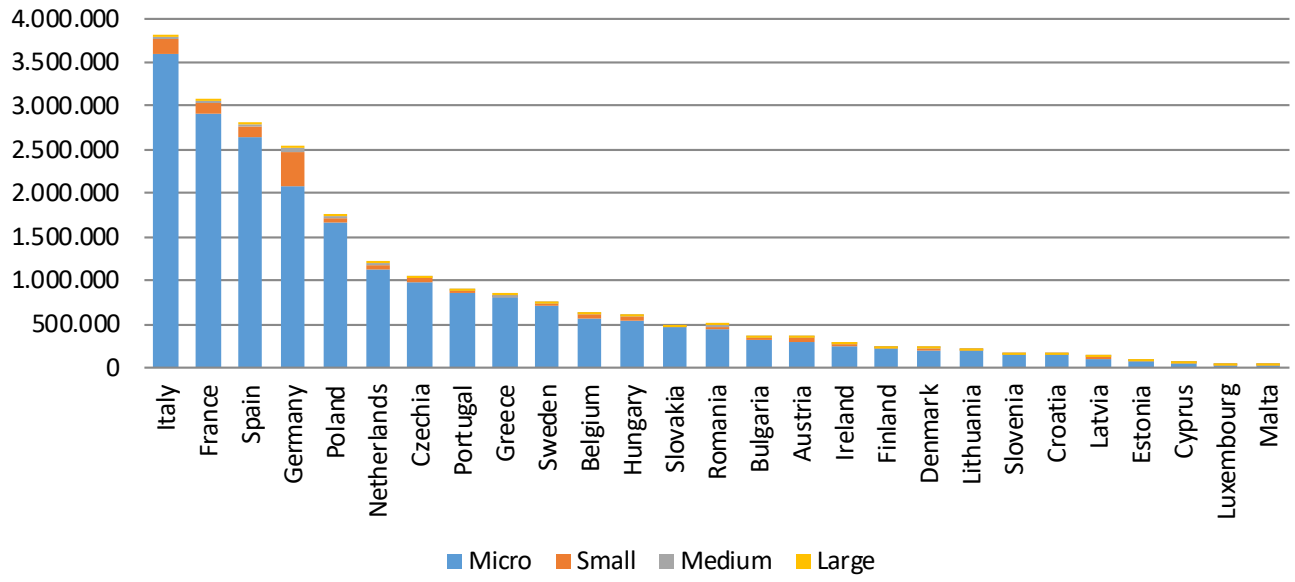
	Micro	% Total	Small	% Total	Med	% Total	SMEs	% Total	Large	% Total	Total
Number	21,4	93.3	1,3	5.6	0,2	0.9	22,9	99.8	0,04	0.2	22,9
Employment	39,7	31.3	25,8	20.4	21,5	16.9	86,9	68.6	39,8	31.4	126,7
Value added	1345.9	21.1	1174.3	18.4	1193.0	18.7	3713.8	58.3	2661.3	41.7	6,375.0

Source: European Commission

In which MS are they located – how are SMEs distributed?

Further features of SMEs relevant for policy are the differences in numbers of SMEs in MSs, and the distribution of MSMEs and large enterprises within MSs, reflecting the different industrial histories of those countries. Figure 1 sets out the number of enterprises in MS by size category.

Figure 1: Enterprises in the EU by number and size category



Source: SME Performance Review 2019

[18] https://www.fundera.com/blog/sba-definition-of-small-business (deals with SME definition)

[19] SME Performance Review, 2019

Some salient features of EU SMEs are listed below.[20]

- **Microenterprises (1-9 employees).** Italy has some 3.6 million microenterprises, compared to Germany's 2 million, even though the German economy is some 90% larger than that of Italy in terms of GDP. As a percentage of all enterprises, the lowest shares are in Germany (82%) and Austria (87.1%).
- **Small enterprises (10-49 employees).** Germany has more than double the number of Italy in second place (381.7 thousand compared to 172 thousand). As a percentage of all enterprises, Germany tops the list with 15.1%, followed by Austria at 10.9 percent.
- **Medium-sized enterprises (50-249 employees).** Germany leads the field with more than three times the number of second-placed Italy (62 thousand compared 19 thousand). France and Spain come next with 18 and 15.5 thousand respectively.
- **Large enterprises (250 or more employees).** Germany has 11.9 thousand, more than three times as many as France (3.8 thousand). Poland, Italy and Spain each have 3.4 thousand.

These data suggest that when talking about SMEs as if they are some 'unified entity' from a policy point of view, key policy-related factors can be overlooked. In the first place, **there are substantial differences between MSs' SME populations and their composition which need to be accommodated** when making policy. Secondly, based on the premise that it is more difficult for smaller firms to adjust to policy initiatives or legislation, it is clear that **policies will affect different MS in different ways** – given the distribution of enterprise sizes within them.

How are SMEs distributed between sectors?

Within the SME population, the largest share of SMEs in terms of both number of enterprises and employment (28% and 26% respectively) is in '**Wholesale and retail trade, repair of motor vehicles and motorcycles'**.[21] This is followed by Manufacturing (less than 10% of enterprises but nearly 20% of employment), Construction (14.5% enterprises, 12% employment), Professional, scientific and technical services (17.5% enterprises, 10.5% employment), and Accommodation and food activities (8% of enterprises, 9.5% employment). The distribution of SMEs across sectors has implications for policy design and implementation, as there are sector-related impacts throughout the value chain, as will become clear with the discussion of Digital Transition and the EGD.

2.4. The challenges of SME industrial policy - across the EU

The above comments suggest that there are challenges when designing and implementing industrial policy for SMEs across the EU: identifying market failures, gaps in delivery of support services, and working with MS and regions. MS are also at different stages of industrial maturity and have different capacities to absorb and implement policies.

From a policy response point of view, it is generally accepted that SMEs face more challenges than large enterprises. General challenges faced by SMEs (as compared to large enterprises) are listed in Box 1. As a rule of thumb, the smaller the enterprise, the more the challenges.

Box 1: Why are SMEs challenged more than large enterprises in responding to policy?

- **Financing difficulties:** SMEs (especially start-ups and small enterprises) can face problems in access to external finance, higher financing costs and therefore higher economic risk.
- **Lack of time:** for the senior manager/owner to devote to familiarisation with legislation and implementing policy, or identifying and applying for public support.

[20] Data from the SME Performance Review, 2019

[21] Eurostat, Business economy – size class analysis, data from 2015

- **Shortage of and difficulties in the recruitment of specialist staff:** SMEs usually have less or no specialist labour force and face proportional higher costs in acquiring new specialists.
- **Less experience and limited internal know on how to manage change processes:** these barriers especially affect traditional handicraft enterprises or enterprises in low-tech sectors.
- **Lack of market knowledge:** SMEs have less knowledge about customer needs and foreign markets, which hinders marketing and internationalization of their activities.
- **Bureaucratic hurdles:** slow/costly administrative procedures and restrictive laws or regulations may constrain SME adaption, especially in highly regulated sectors (e.g. construction or chemicals).
- **Intellectual property management:** SMEs have less resources and capabilities for the economic exploitation of intellectual property rights.
- SMEs usually have a **smaller network of partners** or lack access to relevant actors with specialist knowledge (e.g. regulations, R&D, standards).
- **Knowledge and technological transfer:** SMEs may face greater challenges adjusting to new technological trends (e.g. digitalisation) or find it harder to exploit new developments (e.g. building information modelling).

Source: author's own elaboration

A recent EIB paper (Veugelers et. al.) looked at the extent, role and difficulties faced by SMEs and, particularly, young SMEs regarding innovation. It found that firms that do not engage in any type of R&D or innovation are more likely to be young SMEs, who are also the most likely to be credit constrained, while innovators are more often old and large firms. This is particularly the case for companies introducing innovations that are new to the market. Andrews et. al. show an increasing divide in productivity performance between leading and following firms, which Veugelers et. al. suggest is consistent with a lack of incentives or capabilities to adopt the latest innovations by non-leading firms. They suggest that leading innovators are more likely to receive grants than young SMEs. Should support be for those who are likely to innovate anyway, or should non-innovators be encouraged to innovate?

2.5. How deeply is policy penetrating the mass of SMEs?

The preceding points raise a key question from a long-term industrial policy point of view: to what extent do policies penetrate the mass of SMEs? Or is the aim just to penetrate some - the leaders/innovators - and accept that many will not adapt and go under? Or will a two-stream economy emerge, as in Israel with its very high-tech industries on the one hand, and the traditional sector on the other? Will the 'digital divide' extend into the regions?

From this point of view, it is useful to consider the theory of diffusion of innovation developed by Rogers[22]. His model argues that the adopters of innovation go through a specific series of stages in responding to new technologies as set out in the table below. Moore[23] has argued that movement beyond the 'early adoption' to the 'early majority' stage is the most challenging as it requires a major share of the population to change behaviour.

[22] The theory is elaborated here: http://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehavioralChangeTheories/BehavioralChangeTheories4.html

[23] (2014); Crossing the Chasm: Marketing and Selling Technology Products to Mainstream Customers

Table 3: The Rogers Model of innovation adoption in a population

Process	Diffusion stages				
Type	Innovators	Early adopters	Early majority	Late majority	Laggards
Percentage %	2.5	13.5	34	34	16
Cumulative %	2.5	16	50	84	100

Source: Diffusion of Innovation Theory, E. M. Rogers, 1962

From a long-term point of view, the question is which groups are SME policies reaching? Is the focus on the innovators and early adopters who would have changed anyway?

2.6. Conclusions

Given the role of SMEs in the EU economy, they will need to play a key role in bringing about any envisaged long-term strategy. In this respect, the foregoing comments suggest the following:

- While there is a *Think Small First* principle that (theoretically) guides EU policy, and SMEs are considered the 'backbone' of the EU economy, the March 2020 *SME strategy for a sustainable and digital Europe* has been the first significant statement of SME strategy in a decade. The strategy offers some new initiatives that have to prove their worth, and consolidates and refocuses existing policies in a wide range of intervention areas of relevance to SMEs.
- However, some questions do remain.
  a. How meaningful is it to talk about SMEs as if they are a homogenous group? To what extent does policy recognise and address the different circumstances of micro, small and medium-sized enterprises and their different national, regional and industrial contexts?
  b. To what extent is policy addressing the bulk of SMEs, or just selected target segments? What should the roles be of innovators/early adopters compared to the whole population? Are different approaches needed for the different segments?
  c. Given the structure of their SME population and the role of large enterprises in the economy, different MSs will be in different positions in terms of being able to adapt to EU policies. Those with a larger percentage share of micro/small enterprises will face a more challenging situation, a heavier burden of adjustment and will require more support to move in the direction of the twin transition.
- A significant responsibility for implementation of the new SME strategy rests on MS and regional bodies. Will they lead the way on this?

3. SME POLICIES AND PROGRAMMES – AN OVERVIEW

This section provides an overview of the level of SME support for implementing long-term industrial policy in the long-term programmes for SMEs under the 2014-2020 EU budget headings where relevant in terms of the EGD and DT. Comments are made regarding the 2021-2027 EU budget.

3.1. SMEs in the EU budget

3.1.1. Heading 1a, the Competitiveness for Growth and Jobs programme

Items of relevance to the DT and the EGD under this Heading are:

The **Connecting Europe Fund** (CEF, €21.9 billion), part of which is for the development of high-performing, sustainable and efficiently interconnected trans-European networks in the field of telecommunications within which are programmes (e.g. the Digital Single Market programme) that support SMEs.

The **Competitiveness of Enterprises and SMEs (COSME)** programme (€2.3 billion) supports the competitiveness, growth and sustainability of EU enterprises, in particular SMEs, and promotes entrepreneurship. COSME eases SME access to finance, facilitates access to new markets (inside and outside the EU) and reduces the administrative burden on SMEs. Some COSME initiatives specifically support SMEs in the green economy or promote digitalisation, for example specific Enterprise Europe Network (EEN) sector groups, the *Watify* campaign, which promoted the adoption of IT and advanced technology, actions to support the Smart use of ICT, and the *COSME Digitalisation Pilot*, launched under the *Loan Guarantee Facility* that enables Financial Intermediaries to offer comprehensive financing to SMEs to digitalise.

The **European Observatory for Clusters and Industrial Change and the European Cluster Collaboration Platform** are supported by COSME to promote the development of clusters.

The **European Fund for Strategic Investments (EFSI), European Investment Advisory Hub (EIAH), and European Investment Project Portal (EIPP):** EFSI is established within the European Investment Bank (EIB) to provide finance for SMEs and small mid-caps channelled through the *European Investment Fund* (EIF).

Horizon 2020 (€79.4 billion) is the main EU programme supporting research, development and innovation. It encompasses: encouraging excellence in science, developing research infrastructures, improving the mobility of researchers, promoting industrial leadership and tackling particular societal challenges (e.g. secure, clean and efficient energy; smart, green and integrated transport; climate action, environment, resource efficiency and raw materials). There are many opportunities in H2020 for SMEs to benefit from support for green economy and DT-type innovation.

The **European Institute of Innovation and Technology (EIT),** supported by Horizon 2020, aims to increase Europe's ability to innovate by nurturing entrepreneurial talent and supporting new ideas. *The EIT's Innovation Communities* have a strong presence in green and digital activities – e.g. innovation for climate action (EIT Climate-KIC), sustainable energy innovations (EIT InnoEnergy) and breakthrough digital innovations (EIT Digital). There is scope for SMEs in EIT and Knowledge and Innovation Communities (KICs).

SMEs can also benefit from **Marie Skłodowska-Curie actions** that place researchers in enterprises in order to support SMEs' research efforts. Provision for e-Infrastructures establishes digital-based services and tools for data- and computing-intensive research.

Support for SMEs is also available under **Future and Emerging Technologies (FET)** in Horizon 2020, which promotes visionary thinking and opening up of promising avenues to powerful new technologies. *FET Proactive*, for instance, may involve launching new enterprises involving disruptive ICT or new technologies for energy and functional materials.

Horizon 2020 also supports Innovation in SMEs through **intermediated support services**. These include the *EIC Accelerator Pilot* that offers support to entrepreneurs with breakthrough ideas and the *Enhanced EIC Pilot*, which funds and supports high-potential and high-risk innovation developed by SMEs through the *EIC Accelerator Pilot*. *Eurostars,* a programme with 36 EUREKA countries, assists development of new products and services for high R&D spending SMEs.

3.1.2. Heading 1b: Economic, social and territorial cohesion

Within this EU budget Heading is **Regional Policy, the EU's main investment policy**. Regional Policy targets regions and cities to support job creation, business competitiveness, economic growth, sustainable development, and quality of life. Regional Policy is delivered through two main funds: the *European Regional Development Fund* (ERDF) and the *Cohesion Fund* (CF). €355.1 billion was set aside for *Cohesion Policy* for 2014-2020. With the *European Social Fund* (ESF), the *European Agricultural Fund for Rural Developmen*t (EAFRD) and the *European Maritime and Fisheries Fund* (EMFF), they make up the *European Structural and Investment Funds (ESIF)*. Funds have a common overall framework with 11 thematic objectives of which several are relevant for SMEs, DT and the EGD.

The ESIF are implemented in close collaboration with the MSs who determine which of the thematic objectives are to feature in their Operational Programmes. Measures to promote digitalisation, climate change adaptation, a shift to a low-carbon economy, sustainable transport or resource efficiency are likely to feature. SMEs active in the Green Economy or digitalisation have benefited from the ESIF but it is difficult to provide an overall picture of the nature and extent of support for SMEs in these areas.

Most of the instruments providing access to finance for SMEs in these programmes are managed by the *European Investment Bank* group – the *European Investment Bank* (EIB) and the *European Investment Fund* (EIF). The EIB group is committed to sustainability throughout its financing operations and is responsible for implementing the *Investment Plan for Europe* which aimed to stimulate €315 billion of additional investment in the EU by mid-2018, leveraging funds in a €21 billion guarantee programme, the *European Fund for Strategic Investments* (EFSI). The initiative has generated €458.8 billion investment, with €84.6 billion of financing approved in more than 1,200 operations, benefitting 1,096,000 SMEs. *InvestEU* will transform EFSI into a long-term instrument to support EU policies. The EIB is also in the process of launching a *European Circular Bioeconomy Fund* (ECBF), which will provide equity, debt or quasi-equity to innovative circular bioeconomy companies and projects of various sizes. The target fund volume is €250 million.

Of the **five regional policy targets for the EU in 2020** one is directly related to the EGD - climate change and energy sustainability (to reduce greenhouse gas emissions by 20% or 30%, if the conditions are right); to obtain 20% of energy from renewables; and, achieve a 20% increase in energy efficiency). Each MS has adopted national targets in these areas.

3.1.3. Heading 2: Sustainable growth: natural resources

Within EU budget Heading 2 is the *Programme for the Environment and Climate Action* (LIFE) (€3.5 billion). The *LIFE* programme, launched in 1992, aims at improving the implementation of EU environment and climate policy and legislation and to contribute to the shift towards a resource-efficient, low-carbon and climate resilient economy, the protection and improvement of the quality of the environment and to halting and reversing biodiversity loss.

LIFE has two sub-programmes, one for environment and one for climate action, representing 75% and 25% respectively of the overall financial envelope. Under both sub-programmes, it co-finances pilot and demonstration projects to develop, test and demonstrate policy or management approaches and, in particular, projects developing and demonstrating innovative technologies, where the EC seeks technologies and solutions that are ready to be implemented at industrial or commercial scale. A wide range of organisations are eligible to apply for support under LIFE, including SMEs.

LIFE also funds the *Private Finance for Energy Efficiency (PF4EE)* fund, which aims to address the limited access to adequate and affordable commercial financing for energy efficiency investments. The instrument provides a Risk Sharing Facility - credit risk protection by means of cash-collateral, an EIB Loan for Energy Efficiency (long-term financing) and the Expert Support Facility for support services for Financial Intermediaries. It is available in 9 Member States. Private individuals and SMEs can be beneficiaries.

3.1.4. Heading 3: Security and citizenship - Creative Europe

Within Heading 3 is the *Creative Europe* programme (€1.5 billion) which supports tens of thousands of artists, cultural professionals and cultural organisations in the performing arts, fine arts, publishing, film, TV, music, interdisciplinary arts, heritage, and the video games industry, allowing them to operate across Europe and to develop digital skills.

3.1.5. The Executive Agency for Small and Medium-sized Enterprises (EASME)

In order to **focus on delivery and management** of EU programmes on its behalf in the fields of **SME support & innovation, environment, climate action, energy and maritime affairs**, the EC set up the **Executive Agency for Small and Medium-sized Enterprises (EASME).**

EASME delivers a wide range of programmes including most of COSME; part of Horizon 2020; the SME Instrument (now the Enhanced European Innovation Council - Pilot, to become the Pathfinder for Advanced Research and the Accelerator in Horizon Europe 2021-2027); Fast Track to Innovation (FTI); Part of LIFE, and CIP Eco-Innovation; part of the European Maritime and Fisheries Fund (EMFF); the legacy of the Intelligent Energy – Europe programme and the Eco-innovation initiative; and organises the EU Sustainable Energy Week. One example of an instrument delivered by EASME and its evolution is set out in the text box below.

Box 2: The SME Instrument (SMEI) and its evolution

In response to a lack of access to early stage high-risk capital and the relatively low level of EU performance in breakthrough innovations and private sector commercialisation of research results, H2020 funds high-potential innovation through a dedicated SMEI (launched in 2014), which offers grants and business innovation support under the section Societal Challenges and Leadership in Enabling and Industrial Technologies (LEITs). The SMEI targets a small segment of EU SMEs: those with the potential to grow and internationalise across the single market and beyond, which involve significant innovation activities in Technology Readiness Level 6 (TRL6).[24] SMEI was provided with about €3 billion in funding over the period 2014-2020.

The Mid-Term Review of the SMEI found that it reached SMEs that previously did not participate in EU Framework programmes. Over the entire period 2014-2015, 89% of the SME applicants and 83% of those awarded under the SMEI were 'new-comers'.[25]

In 2018 a work programme was proposed which grouped the SMEI with other programmes under the European Innovation Council (EIC) Pilot.[26] An 'Enhanced EIC Pilot' was launched in 2019 to transition towards the Horizon Europe programme where EIC is envisaged as the third pillar in a framework programme that would combine all EU support for breakthrough and market-creating innovation in one place comprising the Pathfinder for Advanced Research and the Accelerator.

[24] Technopolis (date Technopolis (2017); Evaluation of the SME instrument and the activities under Horizon 2020 Work Programme "Innovation in SMEs", Final Report, DG GROW and DG RTD p.40

[25] Technopolis (2017), p.1

[26] European Court of Auditors (2020); Special Report The SME Instrument in action: an effective and innovative Programme facing challenges, pp.11-12

In 2020 a review by the European Court of Auditors[27] found that while the SMEI had provided effective innovation support to SMEs, there were some challenges in delivery, for example in terms of *regional coverage* and the late introduction of *the non-bankability criterion*. The review found that for phase 2 projects, 36% of respondents believed that their projects could have received funding from the private sector, and 17% replied that they could have used their company's own resources to fund innovation.

Source: European Commission, European Court of Auditors

3.2. Programmes and policies under the 2021-27 EU budget

The long-term EU 2021-2027 budget is being modernised in line with new political priorities,[28] in particular there is a stronger climate change and environmental ambition and changing economic and social circumstances need to be accommodated. Expenditure on Horizon Europe, Erasmus+ and the security fund is to increase and new programmes are to be funded: e.g. Digital Europe and the Defence Fund, to support Europe's strategic agenda for 2019-24. The LIFE programme received the largest proportional increase for 2021-27 (to meet Paris Agreement targets and UN Sustainable Development Goals), with a budget €5.45 billion. The LIFE programme will also act as a catalyst for other funds. The Commission has proposed that at least 25% of EU expenditure across all EU programmes should contribute to climate objectives.

Overall, the Commission proposes to reduce the 58 programmes in the multiannual financial framework (MFF) by more than a third**,** by consolidating them under **InvestEU**. InvestEU will mobilise public and private investment in four policy areas: sustainable finance; research, innovation and digitalisation; SMEs; and, social investment and skills. InvestEU will centralise managed financial instruments (COSME, InnovFin, Creative Europe, EFSI, etc.). There is potential for EGD and DT-type projects under all four headings. In addition, supporting the EU's transition to a zero-carbon economy by 2050, the EIB is to become the EU's 'climate bank'.

3.3. Conclusions

At a European level, therefore**, a wide range of programmes are implemented that may support SMEs undertaking the twin transition.** Many of these are generic, but open to SMEs in the twin transition sectors and indeed they may have been used accordingly. In terms of the total funding available, they are also the most significant supports to the relevant SMEs. Nonetheless, there are also initiatives and funds that are more specifically targeted at SMEs in the two relevant areas within the CEF, COSME, H2020, LIFE and Creative Europe. Under regional policy, arguably involving the largest sums, it is not so clear as to what share is earmarked for SMEs and the areas targeted as these depend on operational programmes in MSs. The EIB Group is a major source of funds and support, and through EFSI has funded over a million SMEs and smaller mid-caps, but it is not clear how many of these were in digital and green economy areas. In the next section some of the twin-transition related programmes will be considered in terms of their SME focus.

It is not possible at this stage, given the information available and the scope of this study, to assess the extent to which the 'majority' and the 'laggards' within the EU's population of SMEs have been reached or penetrated by programmes supporting the deep long-term industrial transformation envisaged by the twin transition, nor what the overall impacts are as many programmes also work through intermediaries and MS initiatives. It is also not always possible to obtain a full view of SME participation as where large enterprises lead a project, there may be SMEs in the supply chain.

[27] European Court of Auditors (2020); p.17

[28] European Commission; EU Budget for the Future. A modern EU budget rising to future challenges, October 2019

While it will be useful for 2021-2027 to rationalise the EC's programmes as intended as it means, among other things, that they can more readily be focused on the green and digital transitions. It would also be useful to consider more specifically SME-related needs within those programmes, given the challenges they face in adapting to and adopting new policy initiatives, and more rigorously specify SME (*Think Small First*) aims and impacts in those programmes not just at a generic SME-level, but in terms of the requirements of the micro, small and medium-sized enterprises that form the backbone of the EU economy.

4. SMEs IN PROGRAMMES SUPPORTING THE EUROPEAN GREEN DEAL AND DIGITAL TRANSITION

This section looks at programmes that have been on-going during 2014-20 that are of a type that would support the twin transition envisaged in the EU's long-term industrial policy. The SME aspects of the *EGD* and the *Shaping Europe's Digital Future* communications are also considered, as well as the Just Transition Fund. The aim is to identify what the SME focus has been and how the long-term future of SMEs is seen in these recently announced major industrial development initiatives. Challenges faced by SMEs to transition are also set out.

4.1. The European Green Deal

4.1.1. Precedents to the European Green Deal (EGD)

The EC has been active in the environmental field for many years.[29] As part of the Lisbon Agenda and the *Europe 2020 Strategy*[30] one flagship initiative was a *'Resource efficient Europe'* to drive and support the transition to a sustainable economy. The *7th Environment Action Programme* (EAP) was launched in 2013 to guide European environment policy until 2020 and provide more long-term direction by setting out a vision for 2050.

Programmes supporting transition to a green economy include the following:

The Eco-innovation Action Plan (EcoAP)

The EcoAP (2011) contributes to sustainable development by reducing impacts on the environment, increasing resilience to environmental pressures or using natural resources more efficiently and responsibly.[31] Actions are in policy, regulation, demonstration projects, partnerships, standards and performance targets, funding and SME support (H2020, InnovFin, COSME, LIFE, ESIF, Investment Plan), international co-operation and European Innovation Partnerships. EcoAP has become increasingly integrated with the Circular Economy and other green initiatives and funding sources.

The Green Action Plan (GAP) for SMEs

The environmental impact of an individual SME may be insignificant but the cumulative impact of SMEs is considerable. However SMEs often find it difficult to comply with environmental policy and legislation (see 4.1.6). The GAP (2014)[32] aimed to support SMEs to comply with EU environmental laws, regulations, standards and other requirements by providing guidance and by converting environmental compliance into a business opportunity.[33] The GAP also aimed to help SMEs take advantage of opportunities offered by the transition to a green economy[34] through resource efficiency improvements, driving down costs, the circular economy and green markets.[35] It also aimed to inform SMEs about the Financial Support Mechanisms (COSME, Horizon 2020, LIFE, and the ESIFs) and EREK which provides services for both businesses and business support organisations. (EREK is currently merging with the European Cluster Collaboration Platform).

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29 Already in the 1970's measures were introduced to limit pollution and protect birds. This was followed during the1980's by Regulations supported by the ACE (EU Actions for the Environment) financial instrument to support development of, among other things, clean technologies and habitat protection. In 1992 the first LIFE programme was launched

30 European Commission (2010): Europe 2020: A strategy for smart, sustainable and inclusive growth. COM(2010) 2020 final, p.4, 14

31 Decision N° 1639/2006/EC establishing a Competitiveness and Innovation Framework Programme

32 List of actions: Ref. Ares(2016)6573188 - 23/11/2016 Green Action Plan for SMEs enabling SMEs to turn environmental challenges into business opportunities

33 https://ec.europa.eu/environment/sme/index_en.htm (deals with SMEs and the environment)

34 https://ec.europa.eu/growth/smes/business-friendly-environment/green-action-plan/ (sets out the overall GAP)

35 https://ec.europa.eu/environment/waste/index.htm (dealing with waste)

The Circular Economy Action Plan (CAP)

The CAP was launched in 2015 to stimulate Europe's transition towards a circular economy, boost global competitiveness, foster sustainable economic growth and generate new jobs. It included measures covering the whole cycle from production and consumption to waste management and the market for secondary raw materials as well as a revised legislative proposal on waste. The actions aimed to help 'close the loop' of product lifecycles through greater recycling and re-use, benefiting both the environment and the economy. The plan was supported financially by ESIF funding, €650 million from Horizon 2020, €5.5 billion from structural funds for waste management, and investments at national level.

In the 2018 **Circular Economy Package** a range of initiatives were adopted in the context of the Circular Economy Action Plan. These dealt with plastics; the interaction between chemical, product and waste legislation; critical raw materials; and, water usage. The Circular Economy Action Plan was completed three years after adoption, including all 54 measures identified.[36]

The Action Plan recognised explicitly that SMEs are '*at the core the transition*'[37] and refers to the EEN and EREK to help transform SMEs' production processes, as well as accompanying measures such as the Environmental Technology Verification pilot programme, Best Available Techniques Reference Documents, ecodesign and ecolabelling measures for material efficiency, and new standards for enhanced durability, reusability, reparability, recyclability.

When assessing the 54 actions in some detail it appears that only three of them have an explicit SME focus (European Commission, 2019). These are:

- To set-up an EU funded platform KET4CleanProduction[38] bringing SME users, technology infrastructures and suppliers of innovative advanced manufacturing technologies together to make SMEs' production processes more energy and material efficient. The platform provides access to experts that provide support for transition to a Factory of the Future.
- Support to facilitate substituting hazardous substances in industrial processes and promote access to innovative technologies by SMEs through a COSME-funded project[39] for the dissemination of best practices and support of EREK.
- Providing online training services to SME support organisations through the project 'Boosting the circular economy amongst SMEs in Europe'.

Actions that do not explicitly focus on SMEs can still be beneficial for this target group, e.g. the Levels initiative[40] and the European Construction and Demolition waste management protocol, or the 'Industry 2020 and the circular economy' initiative under Horizon 2020. Yet it remains a point of attention to cater to the specific needs and conditions of the EU SMEs, particularly given the increased importance of global value chains, environmental technology development, and transformation towards sustainable business models.

The LIFE Programme for the Environment and Climate Action

According to the REFIT Mid-term evaluation of the LIFE Programme[41], the main focus of LIFE remains fostering environmental quality in Europe rather than SMEs and in this the Programme is comparable

[36] https://ec.europa.eu/environment/circular-economy/index_en.htm (details of the CAP)

[37] European Commission Brussels, 4.3.2019 COM(2019) 190 final Report on the implementation of the Circular Economy Action Plan {SWD(2019) 90 final} p.3

[38] See https://www.ket4sme.eu/ for more detail on the platform

[39] Contract 'Substitution of Chemical Substances of Potential Concern (Phase II' EASME/COSME/2017/025

[40] See http://ec.europa.eu/environment/eussd/buildings.htm (to improve buildings' sustainability)

[41] European Commission, Brussels, 6.11.2017 SWD(2017) 355 final. MID-TERM EVALUATION Accompanying the document Report on the Mid-term Evaluation of the Programme for Environment and Climate Action (LIFE) {COM(2017) 642 final} - {SWD(2017) 356 final}

to Horizon 2020. LIFE grants have been awarded to SMEs: in the period 2014-2015 33% of the grants went to SMEs compared to 56% to non-commercial organisations and public bodies.[42]

4.1.2. Progress towards the Green Economy

There is not at present a unique 'scoreboard' that can be used as an indicator for overall progress to the Green Economy, although there is a **Circular Economy Monitoring Framework** (Eurostat) with 10 indicators tracking data such as recycling rates of waste streams, and the **Eco-Innovation Scoreboard**.[43] The New Circular Action Plan (NCAP) (see below) indicates that the monitoring framework is to be updated and further developed by 2021 to enable measurement of progress.

4.1.3. The European Green Deal (EGD)

The EGD[44] was launched on the 11th of December 2019. The EGD builds on previous programmes but it represents a step change in terms of scope, sets a higher ambition, and provides new financing tools. In the Commission's view the EGD is *de facto* the prime and new economic growth policy agenda for Europe aiming at competitive, sustainable and inclusive economic growth. Existing policies are being or have been reviewed against the EGD's objectives and new instruments are to be rolled out in support thereof. Box 3 sets out key elements of the EGD.

Box 3: The European Green Deal

The EGD involves a wide ranging set of deeply transformative policies including:

An increased EU climate ambition: a European 'Climate Law' to enshrine the 2050 climate neutrality objective in legislation; and to increase the EU's greenhouse gas emission reduction target for 2030 to at least 50% (possibly 55%) of the 1990 levels. Also to investigate a carbon border tax (WTO compliant) to reduce leakage.

Supply clean, affordable and secure energy by further decarbonising the energy system and investing in smart infrastructure.

Mobilise industry for a clean and circular economy: through an EU industrial strategy for a 'future-ready' economy and a new circular economy action plan with sustainable product design and a focus on resource intensive sector such as textiles, construction and plastics. In addition, to promote new forms of collaboration and use digital technologies as enablers.

Build and renovate in an energy efficient way through a 'renovation wave' in public and private buildings – with robust enforcement of legislation.

Accelerate the shift to sustainable and smart mobility – by reducing transport emissions; shifting to multimodality, automated and connected multimodal mobility; changing pricing of transport (e.g. extending emissions trading to maritime and air transport, include traffic and construction); and developing alternative fuels.

From 'Farm-to-Fork': introduce a fair, healthy and environmentally friendly food system to include EU farmers and fishermen; reduce use of chemical pesticides, fertilisers and antibiotics; and, sustainable food consumption.

Preserve and restore ecosystems and biodiversity through a new Biodiversity Strategy, restore the EU's natural capital, a new EU Forest Strategy and a sustainable 'Blue economy'.

[42] European Commission, 2017, p. 23

[43] See also Flash Eurobarometer 456 Report SMEs, resource efficiency and green markets September 2017, TNS political & social at the request of the European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs

[44] European Commission, 11.12.2019 COM(2019) 640 final. The European Green Deal

A zero-pollution ambition for a toxic-free environment: to better monitor, report, prevent and remedy pollution; and a chemicals strategy for sustainability.

These policies are to be supported **by mainstreaming sustainability in all EU policies** through:

Green finance and investment and a just transition through a Sustainable Europe Investment Plan; EU budget support; InvestEU budget support (30%); structural funds; the EIB, national promotional banks and international financial institutions; the Just Transition Fund; and, private sector finance.

Green national budgets and sending the right **price signals** using a Green budgeting tool, tax reforms, and a review of state guidelines.

Mobilise research and foster innovation: at least 35% of the Horizon Europe budget to be for 'Green Deal Missions'; and make data accessible and interoperable.

Activate education and training - schools, skilling and training.

Use of existing platforms, simplifying legislation.

Source: European Commission

The funding target for the EGD is more than a trillion Euro, to be met through the institutions mentioned above, e.g. transforming the EIB into Europe's 'climate bank', Horizon Europe and increased funding for the LIFE programme. Implementation is addressed through the New Industrial and SME Strategies discussed above (2.1.1 and 2.2.2).

4.1.4. The New Circular Economy Action Plan

The **New Circular Economy Action Plan** (NCAP)[45] launched in March 2020 aims is to reduce the EU's consumption footprint and double the EU's circular material use rate in the coming decade, while boosting economic growth. According to a Commission Official, the new '*Circular Economy Action Plan' will represent half of the EU effort to achieve net-zero carbon emissions by 2050 – it is the 'number one' priority of the Green Deal*'.[46]

Central to the NCAP is a **sustainable product policy** (based on the Ecodesign Framework) with prescriptions on how to make things in order to use fewer materials and ensure that products can be repaired, reused and recycled.[47] There will also be initiatives to encourage green public procurement. There are action plans for electronics and ICT, textiles, plastics, building and construction, packaging, batteries and vehicles, food and waste.

These are sectors in which SMEs play a strong if not predominant role. For instance, construction and demolition waste is by far the largest waste material flow in terms of volumes and is part of the (circular) construction value chain which is characterised by a relatively high share of SMEs. According to the EU '*The circular economy is a transition. And it is meant to be a rather harsh and at times disruptive transition … meant to leave companies doing things the old way as simply going out of business.*' The text box below illustrates some of the challenges faced by SMEs in the plastics sector in a circular economy context.

Box 4: Implementation and compliance with the Single Use Plastics Directive for SMEs

The **Single Use Plastics Directive** (2019/904 – art. 6.5) requires MS to ensure that as of 2025, single use PET beverage bottles placed on their market contain on average 25% of recycled content, and as of 2030 these bottles contain at least 30% recycled content. However, currently there are no techniques available to determine the recycled content exogenously in a PET bottle, which implies

[45] For details see: European Commission (2020); Circular Economy Action Plan For a cleaner and more competitive Europe

[46] Simon, F.; Circular Economy erected as 'number one' priority' of European Green Deal, EURACTIV, 13 November 2019

[47] Simon, F.; EU Commission unveils 'European Green Deal': The key points, EURACTIV, 11 December 2019

that for monitoring and control of the implementation of this directive other methods have to be used that focus on the input side of the production process, such as chains of custody. Currently the Commission is elaborating the appropriate reporting and verification schemes for MS. This will undoubtedly have ramifications for enterprises and SMEs in particular. According to Plastics Europe (2019) the European Plastics Industry employs 1.6 million people in about 60.000 companies, most of which are SMEs.

In the context of extended producer responsibility, whatever the precise reporting and verification schemes chosen, the practical implementation will certainly have an effect in terms of administrative burden for the enterprise and potentially direct financial costs and compliance costs such as the introduction of sensors, adjustment and re-organisation of the production processes, purchasing and installing new software. For SMEs this may require an adjustment of the business model in order to valorise the benefits of chain of custody schemes.

Source: European Commission

4.1.5. The European Green Deal Roadmap

Accompanying the EGD communication is a roadmap for key actions to be taken. These actions are in 8 key areas: climate ambition; clean, affordable and secure energy; industrial strategy for a clean and circular economy; sustainable and smart mobility; greening and the Common Agricultural Policy, 'Farm to Fork' strategy; preserving and protecting biodiversity; towards a zero-pollution ambition for a toxic free environment; mainstreaming sustainability in all EU policies; the EU as global leader; and, working together – a European Climate Pact, and are accompanied by an indicative timetable. Most actions involve reviews of strategies and legislation, drafting new legislation and new strategies and action plans. The scope of the actions can only be described as very wide, and the timing as ambitious.

A consultation was launched on the Roadmap. One response, from Orgalim, referring to the Circular Economy[48] element stressed (among other things) the need to create a market through coherent policy objectives with appropriate incentives as retail markets do not reward circularity. This would involve removing existing conflicts between EU laws in the areas of waste, product and chemicals policy, and having public sector purchasing policies leading the market by applying life cycle costing in public procurement. It would also include upholding the Ecodesign Directive (2009/ 125/ EC), aligning existing financial instruments, improved surveillance and enforcement of existing legislation and implementing the Energy Performance of Buildings Directive (2018/ 844/ EU).

The European Environmental Bureau[49] suggested that several laws still need to be fully implemented and enforced, for example related to air quality, the REACH Regulation, and the Water Framework Directive, while other directives need to be transformed. At the same time, Green 10, a group of leading environmental NGOs active at EU level, have argued that the 'one in, one out' principle in legislation[50] is not appropriate for environmental legislation.[51]

4.1.6. SMEs in the European Green Deal - opportunities and challenges

In the EGD Communication SMEs are rarely mentioned. However, as is clear from the thrust of the document and the associated NCAP that SMEs will be affected. Some examples of areas that will affect SMEs are those to do with repair and maintenance of domestic appliances, ICT equipment and motor

[48] Orgalim; Position Paper: Response to Commission Circular Economy Roadmap Consultation, Brussels, 17 January 2020

[49] European Environmental Bureau; Media Briefing on European Green Deal: early test of Von der Leyen's commitment to environment, 2 December 2019

[50] European Commission; Main principles of the working methods A College in which we will all work, decide and deliver together, Brussels, 10 September 2019

[51] Open letter for European Parliament to reject misguided "One in, one out principle" and introduce sustainability screening of new initiatives, Brussels, 16th September 2019

vehicles, waste and removal of construction waste. Many of the sectors identified are highly populated by SMEs, e.g. textiles, plastics (Box 4), packaging, etc.

The 'Farm to Fork' actions will affect many farmers. They are often small family businesses that operate on low margins, and there is a concern that administrative burdens and other compliance rules as a result of the EGD could have negative effects on them, although organic farming might benefit. Issues of concern include reducing herd sizes, carbon farming and how to develop 'precision agriculture' using digital technologies.

Food processing is an important SME sector. Although there is a clear push for local production and distribution chains with cross valorisation of side-products and new business models, the effects of global trade regimes and competition remain for SMEs an exogenous factor. Farmers and SME food processing companies remain price takers on the global market. Hence the importance of a coherent EU trade policy levelling the playing field with the same conditions for imported products as those produced domestically in the EU.

An area where SMEs could benefit is the envisaged 'renovation wave' in building. Industry organisations such as the European Builders Confederation (representing construction MSMEs and craftsmen) are following developments closely[52] – as is the European Construction Industry Federation and other building industry stakeholders.

The **challenges surrounding SME responses to environmental legislation/initiatives** are well known: lack of awareness, accessing new value chains, finance, staffing, new business models, etc. It is not just the lack of awareness that is an important barrier. It is more the identification of potential opportunities and cost implications. SMEs with a business value proposition in the circular economy, climate, nature, biodiversity, renewable energy and other EGD themes have an inherent incentive to explore, invest and pursue new business opportunities in those areas. The most vulnerable group of SMEs are those for whom the EGD seems just additional legislation adding to the cumulative administrative burden, putting the current business model under pressure and limiting profitability in a business as usual scenario. It is not clear how large that segment is, and how it will be affected. But the role of intermediate business organisations is paramount to inform and support their members, in addition to any other channels that can be identified such as schools, universities, training centres, regional development offices, and cluster organisations to support the vulnerable laggards and followers as well as the leaders.

SME business representative organisations generally highlight the potential benefits for EU SMEs[53], but at the same time stress the need for 'SME compatibility' of the strategy.[54] With respect to the latter it will be important to pay particular attention to the EU SMEs' competitive position in wider global value chains. Programmes fostering strategic value chains for Europe (e.g. Key Enabling Technologies, digital B2B technologies) need to take the SME explicitly dimension on board.

Looking at the challenges faced by SMEs in 'going green', already in 2010 a substantial report was published on **SMEs and the Environment in the European Union**[55] which looked at the environmental impact of SMEs in Europe; analysed the administrative burdens resulting from EU environmental legislation; and, considered the related business opportunities for the SMEs with examples from SMEs in 13 EU MSs. Additional insight is gained from the **Econet Workshop** (Box 5).

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52 European Builders Confederation (2020), available at: https://www.ebc-construction.eu/2019/12/18/ebc-welcomes-the-european-green-deal-communication/

53 SME United (2020) Green Deal should be an opportunity for SMEs, available at: https://smeunited.eu/news/green-deal-should-be-an-opportunity-for-smes

54 SME United (2019) Green Deal: Lights and shadows for SMEs, available at: https://smeunited.eu/news/green-deal-lights-and-shadows-for-smes

55 Danish Technological Institute and PLANET S.A. (2010); SMEs and the environment in the European Union, European Commission, DG Enterprise and Industry

Box 5: The Green Econet Workshop – challenges in 'going green'

This FP7 funded project (N 603939) workshop addressed two areas with project participants: the role of online and offline working for SMEs; and, barriers for SMEs in 'going greener'.[56]

Three main obstacles among SMEs to online networking emerged: reticence in information sharing due to potential competitive advantages and commercial sensitivity; preference for personal contact with sector organisations and multipliers, based on trust (they have limited time to search and evaluate online networks); and, lack of familiarity with green business opportunities (not a priority, high cost awareness).

Barriers to 'going green' include: lack of technical and managerial knowledge, skills and information; lack of long-term scenario thinking and time for it, and aversion to change; not knowing where to get trustworthy information, loss of confidential business information and IP; distrust and costs of external consultants; and, high up-front investment but long payback time.

Source: GreenEcoNet Workshop, 2014

Between June 2017 and February 2019 DG Environment implemented a pilot project **'Boosting the circular economy among SMEs'**[57] in order to identify the most efficient and effective way to boost transition towards a circular economy among SMEs. This looked at training of SME support organisations (28), advising regional authorities how to boost the transition (6), helping scale-up of promising projects across Europe (13), and bringing stakeholders from across Europe together (including banks and potential investors) at a 2-day workshop. The report noted that there is an increase in companies desiring to adopt resource efficiency, eco-innovation and/or circular economy strategies and practices but it is not as strong in SMEs as in large enterprises due to 'their more limited organisational, technological and financial capacity, and less access to (pre-) financing for circular solutions'. The report highlighted that 'the hurdles faced by SMEs to adopt circular economy practices significantly limit the speed at which the European economy can transition towards a circular economy'.

A 2018 report **'Addressing resource efficiency challenges and opportunities in Europe for SMEs'**[58] identifies the challenges that SMEs have to face to achieve a green transition. The report provided an overview of the implementation of selected actions of the GAP until end of 2017 to demonstrate intermediate progress and outcomes and draw lessons for future actions. Whilst it concluded that progress is being made, it said it is still too early to identify impacts and it also points out challenges remain and there are matters to address.

A **2018 OECD** study[59] categorises challenges faced by SMEs when attempting to move into green markets into two groups: *uncertainty* (stemming from technological uncertainty, demand uncertainty, or policy uncertainty); *and, the financial and human resource burden*. Demand uncertainty concerns whether consumers will buy a given product; policy uncertainty concerns changes in the policy environment (e.g. regulation) that may alter the appeal of investing in a certain product; and, technological uncertainty concerns the risks that are inherent in R&D processes and new technologies.

The dual effects of the high resource burden (both financial and human) of greening and the limited resources of SMEs pose a challenge for SMEs in balancing business performance with environmental objectives. Greening often entails investment in infrastructure and technology, compliance activities, and innovation, which pose a financial burden on SMEs that generally face financial constraints. In

[56] GreenEcoNet (2014); Write-up from the GreenEcoNet Workshop, Funded by EU's Seventh Programme, Grant Agreement No 603939

[57] KPMG, MVO, Circle Economy (2019); Boosting the transition. Impact assessment, for project Boosting the circular economy among SMEs

[58] EREK (2018); Green Action Plan for SMEs – implementation report 'Addressing resource efficiency challenges and opportunities in Europe for SMEs', European Commission

[59] Koirala, S (2018); Inclusive solutions for the green transition SMEs: Key Drivers of Green and Inclusive Growth, Issue Paper, Environment Directorate, OECD, pp.14-21

addition to the financial burden, greening initiatives impose a drain on the constrained human capital resources of SMEs. For example, eco-innovation and eco-adoption in SMEs require a certain degree of managerial skills, technological understanding, learning ability and capability to make use of external technology. In this regard, SMEs may be limited because top talent is usually diverted to large firms. The nature and extent these challenges depends on whether the SME is an entrepreneurial start-up or a follower.

4.1.7. The Just Transition Fund

It has been estimated that 160,000 jobs in the coal mining sector (mining and power plants) might be lost by 2030 as part of the long-term industrial transition process (although some 105,000 of these are already at risk).[60] Depending on what assumptions are made about family size and married couples working, the livelihoods of some 500,000 Europeans, many of which will be of voting age, might be at stake from this sector alone. When estimates are made of jobs to be created or lost from implementing EGD initiatives, it is not clear whether these are gross or net, or where they are located. For example, in mining, some 350 jobs might be lost in Italy, compared to 10,000 in Poland.[61]

To support the transition envisaged in the EGD, a **Just Transition Fund** is to be set up as part of the Just Transition Mechanism which is part of the Sustainable Europe Investment Plan. It will focus on regions and sectors most affected by moving away from fossil fuels and carbon intensive processes. Support will: target those transitioning to low-carbon client resilient activities; protect those vulnerable to transition (e.g. by re-skilling); and, provide jobs in 'new' economic sectors such as energy efficient housing. The Commission aims to work with MSs to put in place plans to ensure a socially just transition.

The sum to be allocated to this fund is (at time of writing) in the region of €100 billion. But it is not just the sum of money that is relevant. From the point of view of sustainable long-term transition, the quality - how it is spent - is also important. For development of long-term transition plans that include SMEs best practice experience is available from other parts of the world that have dealt with similar challenges.

4.2. Digital Transition

Digital Transition (DT) is achieved by increased interaction between connected devices and data flow. It involves both integration of digital technology in enterprises and societal impacts.[62] The Commission has for some decades recognised the importance of telecommunications and ICT in increasing productivity and one of its earliest and most significant achievements was the liberalisation of the telecommunications market in 1998. Since then this has been an important field of intervention for the Commission and many initiatives have been taken. For example, '*A digital agenda for Europe*', to speed up the roll-out of high speed internet and reap the benefits of the single market for firms and households, was an EU 2020 Flagship project.[63] This has evolved into the Digital Single Market Strategy[64] and its range of programmes.

[60] Widuto, A. (2019); Briefing: EU support for coal regions, EPRS, Members' Research Service PE 642.217 p.1

[61] Widuto, p.3

[62] Negreiro, M. and Madiega, T. (2019); Briefing: Digital Transformation, EPRS, Members' Research Service PE 633.171 p.1

[63] European Commission, Brussels, 3.3.2010 COM(2010) 2020 EUROPE 2020 A strategy for smart, sustainable and inclusive growth, p.3

[64] European Commission (2015); A Digital Single Market Strategy for Europe - COM(2015) 192 final

Achieving Digital Transition (see section 2.1.3) is one the new Commission's political goals. Elements underlying this goal are summarised set out in the text box below.

Box 6: A Europe fit for the digital age – key elements

The aim of the Digital Transition is to grasp opportunities that are within safe and ethical boundaries. This includes:

Developing **joint standards** for 5Gnetworks.

Achieving technological sovereignty in and to lead the way on next-generation hyperscalers including blockchain, high-performance computing, algorithms for data sharing and usage, and defining global standards in these areas.

Presenting legislation for Artificial Intelligence – investing in AI through multi-annual financial frameworks.

A new **Digital Services Act**

A **Joint Cyber Unit** (for information sharing and better protection)

Full **digitalisation of the Commission**

Realising the **European Education Area** by 2025

Updating the **Digital Education Action Plan**

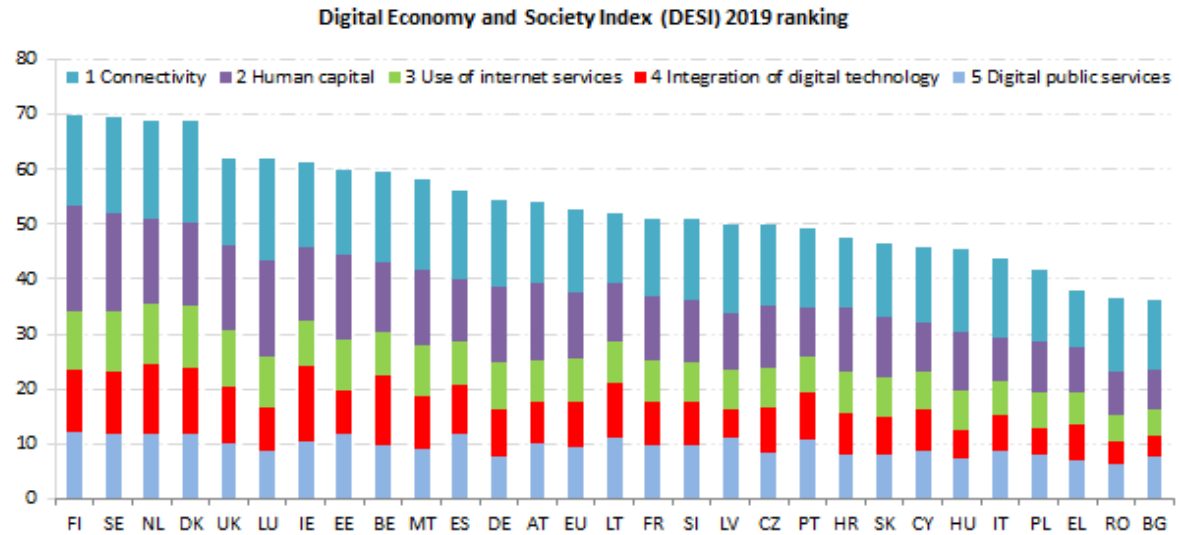
Tripling the **Erasmus+** budget

Source: European Commission

4.2.1. Measuring the transition to the digital age

There is no way to accurately measure the degree of digital transition achieved in the EU, but one proxy indicator thereof might be the Digital Economy and Society Index (DESI). The chart below presents the results from 2019.[65]

Figure 2: Digital Economy and Society Index (DESI) ranking (2019)



Source: European Commission

[65] Digital Economy and Society Index, available at: https://ec.europa.eu/digital-single-market/en/desi

To understand what this means in terms of SMEs, it is necessary to refer to absolute numbers underlying the percentages (see Figure 2). According to the DESI three of the five MSs with most SMEs are in the below EU average group: Poland, Italy and France. The other two, Germany and Spain, are just above the EU average. Relevant data are provided in Table 4. Between them just the three large MSs below the EU average represent some 37.5% of EU SMEs, and with the other two, that represents 60.7% of EU SMEs. The point is that absolute numbers are important, and that also has policy implications in terms of the break down by SME size category within MSs.

Table 4: DESI rankings below and above the EU average – the 5 largest MS[66]

Country	Micro	Small	Medium	SME	% Total SMEs
- **Poland**	1,664,944	49,890	14,389	1,729,223	7.5
- **Italy**	3,599,695	172,324	19,226	3,791,245	16.6
- **France**	2,924,655	117,089	17,985	3,059,729	13.4
+ **Spain**	2,641,722	130,221	15,540	2,787,483	12.2
+ **Germany**	2,079,078	381,739	62,073	2,522,890	11.0

Source: European Commission

The DESI Report indicates that the state of digitalisation of industry varies across sectors, particularly between high tech areas and more traditional ones, and also between MSs and regions. Different sectors also tend to use different types of digital technology more often.[67] There are big disparities between large companies and SMEs.[68] The large majority of SMEs and midcaps are seriously lagging behind in embracing digital innovations and European industry risks falling behind when it comes to building the very foundations of its digital future.[69] According to the OECD, 'use of ICT by business has gone slowly in the EU, and use for advanced e-business applications is particularly low. Traditional sectors (like construction, agro-food, textiles or steel) are particularly lagging behind in their digital transformation'.[70]

4.2.2. Some key digital initiatives

Some of the key initiatives launched to drive and support DT among the EU's SMEs are dealt with below.

The Digital Single Market (DSM) programme

Under the DSM a number of initiatives were launched in 2015.[71] The DSM has achieved a great deal[72] to support transformation into more digitally oriented businesses for the EU's SMEs. In 2017 a Mid-Term Review (MTR) of the DSM[73] found that significant use was being made of digital resources, but also that major challenges remained. According to the MTR, 42% of SME respondents to a Eurobarometer survey reported using online marketplaces to sell their products and services, and 66% state that their position on search engines significantly impacted their sales.

An important challenge to digitalisation in an increasingly digital platform economy is that SMEs may find themselves lagging behind larger industry competitors. Digital platform companies like Uber and

66 Data from the SME Performance Review 2019

67 DESI (2019), Integration of Digital Technology, p.7

68 European Commission, European Digital Progress Report 2017 – Integration of Digital Technology, p.6

69 European Commission, COM(2016) 180 final Digitising European Industry Reaping the full benefits of a Digital Single Market {SWD(2016) 110 final}

70 Widuto, A.,p.2

71 European Commission; Press Release,' Commission sets out path to digitise European industry' Brussels, 19 April 2016. However, it is not clear whether this was a net figure or not – would it include businesses that close down due to the presence of new digital competitors (e.g. traditional high street retailers)?

72 Factsheet: Digital Single Market #DSM #DigitalSingleMarket Creating a Digital Single Market European Commission actions since 2015

73 European Commission, 10.5.2017 SWD(2017) 155 final. The Mid-Term Review on the implementation of the Digital Single Market Strategy A Connected Digital Single Market for All {COM(2017) 228 final}

Airbnb have demonstrated potential threats which can harm a small business income and appeal to investors, as well as limit SMEs' ability to innovate.

To support the digitalisation of industry, as part of the DSM, the EC aimed to raise €50 billion of public and private investments, the majority of which (€37 billion) would be devoted to boosting digital innovation. I4MS has received €100 million in investments since 2013, and a supplementary €35 million was invested in 2017.

A leading initiative in support of the DSM was the **Digitising European Industry strategy** (DEI), launched in 2016 to reinforce EU's competitiveness in digital technologies and to ensure that every business in Europe, whatever the sector, wherever the location, whatever the size, could fully benefit from digital innovation.[74] Box 7 below provides some details about the DEI.

Box 7: The Digitising European Industry Initiative

The DEI's **five pillars** were: creating an appropriate regulatory framework, the co-ordination of national initiatives, the development of digital industrial platforms, large-scale piloting and Public-Private Partnerships and preparing Europeans for the digital future. The fifth pillar is of most relevance in the current context in that it promotes digital innovation *for all*, primarily through the **Digital Innovation Hubs (DIHs)**. These are one-stop-shops where enterprises, especially SMEs, start-ups and mid-caps, can get help in using digital technology to improve their business operations, production processes, products and services. There are now over 200 fully operational hubs across the EU, largely based in technical universities or research organisations where enterprises can access technology-testing, financial advice, market intelligence and networking opportunities.

One public private partnership promoted by the Initiative is the 'Factories of the Future', which has developed **ICT Innovation for Manufacturing SMEs (I4MS)**, a measure to support the adoption of innovative ICT in manufacturing SMEs. It brings together eleven 'Factories of the Future' projects as Integrated Projects, together with two 'road mapping' projects. Integrated Projects can launch their own 'open calls' for experiments and validation activities and have simpler application processes and shorter duration than is usually the case. They are therefore suited to SMEs and allow SMEs to experience EU collaborative research, make new connections and share knowledge.

Source: European Commission

The Start-up and Scale-up initiative

This initiative was launched during 2016 and aims to remove barriers to scaling up in the single market with ecosystem building projects and to develop networking opportunities, by connecting clusters, people, and local ecosystems across Europe. **Startup Europe** is a set of EU initiatives to connect start-ups, investors, accelerators, entrepreneurs, corporate networks, universities and the media through an ecosystem in which start-ups can thrive, an approach frequently followed at a national and regional level too. The *Startup Europe Club* is a website for everyone to find everything they need in one place. *Startup Europe Partnership (SEP)* is an open innovation platform supported by the Commission, that helps the best EU scale-ups grow by providing a place where they can meet corporates and investors.

Linked to these is the **Digital Innovation and Scale-up Initiative (DISC)**, aimed at addressing some regional imbalances within the EU in funding support for innovating SMEs. Under the DISC**,** six regional investment facilities that target early–stage digital innovations and scale-ups in the Central European regions will be established (one has already been established in Bucharest). DISC also offers technical assistance to strengthen the institutional capacity of public agencies to design, develop and implement digital innovation programmes. DISC will boost investment in the enabling environment for innovation and entrepreneurship, with a focus on cross border digital infrastructure and digital skills

[74] European Commission, Digital Single Market: The 'Digitising European Industry' Initiative

projects. DISC is a joint undertaking between the EC, the EIB, the EIF, the EBRD and the World Bank Group.

Box 8: Digital Innovation and Scale-up Initiative (DISC)

46% of start-ups incubated in the Central, Eastern and South Eastern Europe (CESEE) region raise financing from investors outside of Europe and move, most often to the US and China. This substantial investment gap is a major bottleneck for start-ups and the digital economy.[75]

Source: European Commission

The Digital Europe Programme (DEP)

Following the DEI, and included in the long-term EU budget for the period 2021-2027, the EC has proposed the Digital Europe programme. The DEP will focus on building the strategic digital capacities of the EU and facilitating the wide deployment of digital technologies to be used by EU citizens and businesses. With a planned budget of €9.2 billion, it aims to shape the digital transformation of Europe's society and economy, and improve the EU's global digital competitiveness and technological autonomy.

The programme will support investments in supercomputing, artificial intelligence, cybersecurity, advanced digital skills, and help ensure a wide use of digital technologies.[76] Of the €9.2 billion, €2.7 billion will go to supercomputing, €2.5 billion for artificial intelligence, €2 billion for cybersecurity, and €700 million for advanced digital skills. €1.3 billion will be allocated to ensuring the wide use of digital technologies across the economy and society. This includes supporting the uptake of advanced digital and related technologies by industry, notably SMEs, building up and strengthening the network of European DIHs aiming to have a DIH in every region. DIHs have been given a prominent role to stimulate the uptake of AI, HPC and Cybersecurity by industry and public sector organisations, and will function at both local and European levels.

The DEP will complement other EU programmes, such the proposed Horizon Europe programme and the CEF for digital infrastructure.

SMEunited (formerly UEAPME) and the **European Digital SME Alliance have commented on the DIHs** from the point of view of their SME members.[77] These comments include:

- If these are to operate as one-stop shops, what is their intended customer profile? Will they be targeting technology 'leaders' or 'followers'?
- It will be important that they 'speak the same language' as SMEs, relevant to their level of technological maturity, including very basic entry points – not just AI, supercomputing, etc. If the DIHs are staffed purely by technicians and academics it may put some potential clients off.
- The DIHs will have to be market-driven and build on existing support ecosystems (to the extent that they exist). They need to integrate rather than add a new layer.
- DIHs should simplify access to funding (different processes for research vs bridging a digital gap).
- DIHs need to support testing, provide training, match making, industry mapping, increase awareness, support standard development, and provide business intelligence.

[75] European Commission, Launch of the Digital Innovation and Scale-up Initiative (DISC), available at: https://ec.europa.eu/digital-single-market/en/news/launch-digital-innovation-and-scale-initiative-disc

[76] European Commission, Digital Innovation Hubs in the Digital Europe Programme, available at: https://ec.europa.eu/futurium/en/%20digital-innovation-hubs/digital-innovation-hubs-digital-europe-programme

[77] SMEunited, Position Paper- SMEunited comments on Draft working document "European Digital Innovation Hubs in Digital Europe Programme" December 2019; UEAPME Policy Paper Digital transformation in SMEs, February 2018; European Digital SME Alliance, Statement on European Commission Draft Working Document on European Digital Innovation Hubs (EDIHs) in Digital Europe Programme (DEP), December 2015, and European DIGITAL SME Alliance Position paper Digital Innovation Hubs (DIHs)

Shaping Europe's digital future[78]

The Communication of 19 February 2020 on *Shaping Europe's digital future* provides an overall vision and goals of what the new Commission wants to achieve in the digital world. The key theme is **European technological sovereignty** underpinned by **three key objectives**: technology that works for people, making a real difference in their daily lives; a fair and competitive economy with a frictionless single market; and, an open, democratic a sustainable society in a trustworthy data environment contributing to fundamental values, rights and a climate-neutral and resource-efficient economy. Actions aimed at supporting these goals are listed in the communication.

Within the part dealing with a fair and competitive economy there is mention of **the role of SMEs**. The Communication states: 'Many European companies – and SMEs in particular – have been slow at taking up digital solutions, and therefore have not benefitted from them and missed opportunities to scale up. The Commission will seek to address this issue with a new Industrial Strategy'.[79] (Key elements of the strategies have been set out and commented on in section 2).

From the SME point of view, **key support elements** are the frictionless single market that does not create impediments for SMEs and ensuring a level playing field in an environment where some platforms have acquired considerable scale and market power, which will require application of EU competition law. **Key issues** relate to data access, pooling and sharing, and the balance between online and offline services. Reviews and a 'fitness check' are under way in this regard. A sector enquiry is also to be launched. Another aspect of this digital future is the revision of the eID regulation and to promote its use.

The digital economy will also support the EGD. It is envisaged that digital solutions will enable a fully integrated life-cycle approach throughout the circular economy. As stated in the EGD communication, accessible and interoperable data are at the heart of data-driven communication – data combined with digital infrastructure interpreted by AI to support decision-making for environmental challenges for ecological transition – especially to predict and manage ecological disasters. The ICT sector will also need to undergo a green transition to reduce its environmental footprint.

With the publication of the communication on *Shaping Europe's digital future*, two other documents of relevance to SMEs and digital transition were also published: the White Paper on AI **'A European approach to excellence and trust'**,[80] and the communication on **A European strategy for data**.[81] SME-related aspects of the White Paper on AI are summarised in Box 8 below.

Box 9: The European Commission White Paper on Artificial Intelligence (AI) and SMEs

The White Paper aims to drive Europe towards a **leading global position** in the development and application of safe AI systems and presents a vision for the future of AI in Europe focused on: i) capitalising on Europe's strengths in industrial and professional markets; and ii) preparing to take advantage of new waves of available data.[82] The White Paper sets out **two objectives** to achieve this: developing an *ecosystem of excellence* and an *ecosystem of trust*.

Ecosystem of excellence objective actions include: working with MSs; focusing on the research and innovation community; skills development; public-private collaboration; promotion by the public sector; securing access to data and computing infrastructures; global co-operation; and ***focus on SMEs***.

[78] European Commission, 19.2.2020 COM(2020) 67 final Shaping Europe's digital future

[79] Ibid., p.10

[80] White Paper On Artificial Intelligence – A European approach to excellence and trust, COM(2020) 65 final

[81] European Commission,19.2.2020 COM(2020) 66 final A European strategy for data

[82] The White Paper builds on the previous European strategy for AI published in 2018: AI for Europe, COM/2018/237 final

The **Ecosystem of trust** objectives deal with regulatory aspects, including amendment of the existing EU regulatory framework and a future regulatory work.

The White Paper considers SMEs most prominently as a key aspect of the envisaged ecosystem of excellence and calls for the strengthening of the DIHs and the AI-on-demand platform to ensure greater collaboration between SMEs. The Digital Europe Programme is named as an important mechanism to support this and suggests that at least one DIH per MS should be specialised in AI. The document recognises that SMEs and start-ups will require access to finance to adapt their processes using AI. For this, Commission aims to scale up investment in AI through InvestEU, building on the forthcoming €100 million pilot investment fund in AI and blockchain.

From a regulatory perspective, the White Paper stresses the need to ensure the burden of compliance on SMEs is not disproportionate, considering in particular the potential introduction of compliance assessments for high risk AI applications.

Source: European Commission

The communication on a **European strategy for data**[83] sets out the Commission's vision for a **European data space** and points to the opportunities that could be harnessed from the data economy of the future. The Commission is to launch a consultation on specific measures that could support development of the data economy.

However, the communication also spells out the **challenges to be faced in bringing about a single market in data**. These are significant for SMEs and include: fragmentation of data throughout the EU's MSs; availability of data for re-use; use of public sector data by the private sector; sharing and use of privately-held data by other companies; use of privately-held data by government authorities; sharing of data between public authorities; imbalances in market power; data interoperability and quality; data governance; and, data infrastructures and technology.

Within these challenges, the communication sees a clear role for SMEs – especially start-ups and scale-ups - in driving this transition to the data economy of the future, but recognises a good deal needs to be done to build capacity in SMEs. The SME industrial strategy aims to address these issues.

4.2.3. Barriers to SMEs undertaking the digital transition

Whilst a great deal is being done to support digital transition for SMEs, there are some key challenges for SMEs as compared to larger enterprises in such a transition. Large enterprises have a scale advantage and more capacity to employ at least some ICT specialists. The result is that data sharing infrastructure such as Enterprise Resource Planning is much more common in large companies. However, SMEs are relatively active on social media (44%) and the usage of mobile internet to allow employees to exploit business application is also becoming more common; there was an increase from 20% to 29% from 2012 to 2016, while for large enterprises it remained stable at 64% over the same period.[84]

A Commission study provided useful information from demonstration projects in six sector supply chains as to where digitalisation challenges for SMEs can be found.[85] These are:

- **Lack of interoperability** between systems, formats, standards, etc. This is especially a problem for SMEs with multiple business partners who do not have the market power to force others to adopt their standard. Adopting new systems can be costly – or one may lose customers. The proliferation of proprietary standards also constrains SMEs.

[83] European Commission, Brussels, 19.2.2020 COM(2020) 66 final A European strategy for data

[84] European Commission, Integration of Digital Technology, Europe's Digital Progress Report 2017

[85] European Commission (2015); Fostering SMEs' growth through digital transformation. Guidebook for Regional and national Authorities, DG Internal Market, Industry, Entrepreneurship and SMEs, p.8 and p.46

- **Dominance of manual paper-based systems** especially in some sectors with relatively many micro and small enterprises (e.g. textiles).
- **Legal complications** with cross-border data exchange.
- Lack of **specialist ICT skills**.
- **Finance is expensive** in terms of direct costs: e.g. machines, programs; and indirect costs: time to identify the right system, develop it, integrate it with existing systems, train others - including in the external value chain if relevant – upstream and downstream.
- It may lead to **changing the company business model** (relationships with clients, suppliers, decision making, etc.).
- **Lack of awareness of support** (e.g. through ESIF or other financial instruments) and understanding of how instruments operate.
- **Isolated SMEs** go through digital transitions without access to a wider ecosystem which limits their understanding of potential and solutions.

There are **major challenges for SMEs to overcome** in order for them to benefit from digitalisation and **Industry 4.0**. SMEunited and a broad coalition of industry associations point out that a key issue is access to data.[86] **In the case of the auto industry and auto repair**, it is argued that it is necessary to bring forward legislation by 2020 to ensure a genuine digital level-playing field for remote access to in-vehicle data. Owning data is a key driver for large auto companies to invest in Industry 4-type initiatives because by owning the data they can control a great many other businesses related to, for example, servicing and repair, which as indicated in section 2.3, is a very SME intense sector. But data also opens doors to other innovative ideas in the pipeline that cannot be fulfilled due to the lack of effective access of SMEs to in-vehicle data and functions. This affects the whole automotive value chain and firms' ability to evolve their business models and compete on an equal footing with vehicle manufacturers to be able to continue to offer the competitive services expected by their customers (e.g. 'green repair', digital periodic technical inspection, predictive alerts to avoid breakdowns, etc.).

This issue is also relevant for sectors such as domestic equipment ('white goods') suppliers, garden machinery, and generally radio equipment attached to products, etc. At the same time, as has been pointed out in a report by Gimélec, it may not be a rational decision for a SME to link into Industry 4.0 value chains if there is not sufficient scale or added value generated to make the up-front investment worthwhile.[87] We have not identified any research dealing with this question.[88] The Commission's recently launched initiative to boost EU competitiveness and global leadership in six strategic and future-oriented industrial sectors might throw some light on this although no specific mention of SMEs was made. [89]

In view of the reluctance and inertia of many SMEs to embark on digital journeys beyond the basics, it is worth pointing out real issues they face: what might be called the '*Dark side of digital transformation*'.[90] One campaign - WATIFY - did address this matter, highlighting uncertainties, not just the prizes.

[86] SMEunited (2019); Manifesto for fair digitalisation opportunities

[87] Gimélec (September 2013); Industrie 4.0 L'usine connectée, p.13

[88] Centre for Strategy and Evaluation Services LLP (2016), pp. 57-9

[89] See above 2.1.2

[90] De Lemos, B. (2019) ; The Dark Side of Digital Transformation: 8 Emerging Digital Risks, RSA

Box 10: The Dark Side of Digital Transformation

The risks of digital transformation can be very high for SMEs. These include:

Cyberattacks (more linked devices mean higher risks e.g. loss of reputation, trust, law suits, etc.). It is difficult for SMEs to recover from cyberattacks: '60% of SMEs that were victims of cyberattacks did not recover and had to shut down within six months'.[91]

The **distributed workforce** in a gig economy creates challenges for identity governance and threat monitoring.

Cloud – there are risks of moving between suppliers.

Compliance costs, risks, challenges.

Use of **third party vendors/suppliers** means their vulnerabilities transfer to the company.

Process automation disrupts manual systems - unforeseen challenges could impact society.

Resilience: can SMEs be prepared for all eventualities? Might it not change the business forever?

Data privacy – security and regulation – can affect trust, reputation and the bottom line.

A McKinsey report[92] states that of those they surveyed, 8 out of 10 had undertaken digital transformation initiatives. Of those **30% said they were successful but only 16% said it had improved performance and increased the long-term business sustainability**.

Ultimately, digital transformation is a disruptive process that can lead companies into uncharted territories. It remains a risky option that may not be attractive for SMEs.

Source: author's own elaboration

[91] European Digital SME Alliance. (2020). The EU Cybersecurity Act and the Role of Standards for SMEs. Brussels

[92] October 2018, Unlocking success in digital transformations

5. CONCLUSIONS AND RECOMMENDATIONS

This section presents conclusions and recommendations based on preceding sections which have dealt with an integrated and co-ordinated policy as it affects SMEs for a competitive and future-ready economy, and in particular with regard to the Digital Transition and the European Green Deal.

5.1. Conclusions

SMEs have been considered to be at the centre of EU industrial policy for some years, as guided by the *Think Small First* principle. However, it is only recently (March 2020), for the first time in several years, that a substantial policy communication – the *SME Strategy* - has been devoted specifically to SMEs. Several major programmes operative in the field of the twin transition have had an SME element or focus, and an overview of EU budgets also indicates that SME support, including support for digitalisation and the green economy, has received substantial funding during the 2014-2020 period, and that this is set to continue going ahead into the 2021-2027.

Despite this, it is clear from policy assessments that significant challenges remain to move Europe's SMEs to a position where they might as a whole be said to be adjusting well or to have adjusted to the challenges posed by the twin transition. From this point of view, the *SME Strategy for a sustainable and digital Europe* is comprehensive and inclusive. It marshals many programmes and funding sources and refocuses on/mainstreams the twin transition, and introduces some new instruments, the value of which remain to be tested, for the future.

Moving forward, one key conclusion of this study is that it is of limited value to talk of SMEs as if they constitute a single identical mass. Within the landscape of 23 million European SMEs there is a great deal of heterogeneity and policy needs to address this if it wishes to have a broad impact on the *majority* of enterprises. At EU level, it appears that the focus is very much on the innovator/early adopter segment. Within the constraints of this study, it is not possible to gauge what is being done at MS or regional level to support a broad-based SME transition to a future-ready economy. Wide ranging support is needed, and it should be clear where support is available, and how it can be accessed by different types of SMEs.

5.1.1. The European Green Deal

The overview of environmental policies preceding the EGD indicates that, while the focus of programmes and funding has been on the environment, there have been substantial and on-going efforts, supported by significant budgets, to support SMEs in moving to a 'green' and sustainable future. However, feedback from evaluations suggests that there are different responses to such initiatives depending on the kind of company in question – whether they are innovators, early adopters, followers or laggards. For some SMEs some of the challenges are quite difficult to take on board and overcome.

In view of the wide scope and depth of ambition of the EGD, it is apparent that not just innovators and early adopters should be targeted – a total industrial transformation is envisaged. Following the *Think Small First* principle, if SMEs who are the backbone of the EU economy are not to 'simply go out of business', a very wide ranging support and capability development programme, which mirrors the ambition of the EGD, should be devised, launched, monitored and evaluated over the coming years. The aim would be to support SMEs through the well-documented issues they face when going green and complying with legislation.

5.1.2. The Digital Transition

A recurring theme of the Commission's announcements on digital transition is that EU businesses have been slow to take up digital technologies and reap the rewards thereof. The overview of initiatives, programmes and communications in the field of the digital transition has demonstrated that while there are substantial efforts backed by significant budgets being undertaken to provide wide ranging

support for SMEs (e.g. through DIHs), it appears that a great deal is being done to support especially one segment – the highly innovative start-ups and early adopters. There is nothing wrong with this, in principle, but it is an innovation strategy, not a SME development strategy. A good deal remains to be done before the bulk of the EU's SMEs can be considered to have successfully gone through the digital transition.

Different approaches will have to be adopted for different business types and sizes, and in many ways to speak of SMEs as a generic group has limited value in this context. Thus it is not clear to what extent addressing issues surrounding supercomputers in a DIH will be of value to local enterprises that might be at the very early stages of their digital journey.

For their digital journeys SMEs are very much dependent on the market environment they are operating in – in terms of access to data, market power, digital infrastructures, interoperability, etc. as set out in the communication on *A European Strategy for Data*. They are often part of a supply chain that will determine their behaviour – rather than the other way around. To create a supportive environment requires a judicious mixture of legislation and incentives.

If the aim is to get the majority of SMEs (particularly the large bulk of micro and small firms) to transition digitally, as opposed to encouraging a few high-tech firms and leaders to innovate, a very broad-based approach needs to be adopted (as in the case of the EGD) that harnesses a wide range of organisations. However, the risks are substantial when compared to the green transition - not complying with emission requirements for a week might lead to incurring a fine, or a batch of failed products, but need not necessarily destroy an enterprise in the way that a cyberattack can.

5.2. Recommendations

A basic general principle would be to thoroughly apply the SME Test – *Think Small First* – when designing and implementing policies and programmes in support of the twin transition. This requires not thinking of SMEs generically, but rather as different types of SMEs in terms of size (micro, small and medium-sized), and their orientation to adapting to or leading change.

When developing legislation, the impact assessments also need to apply the *Think Small First* principle, as mentioned above, and also when evaluating policy implementation, for example through *ex ante* evaluations, that should also be done in terms of the different SME types. When considering the profound changes in the EU industrial structure that are inherent in the EGD and DT, the whole body of SMEs needs to be considered, not just the leading innovators and early adopters.

Arguably, the main consideration to bear in mind when developing policy to support the twin transitions is that for the majority of SMEs transition is not just a technical or financial matter. Major personal and business issues need to be dealt with to get the broad majority of SMEs to adopt a long-term, future-proof sustainable digital path.

For both the EGD and DT, a scoreboard or equivalent should be developed which sets out the targets to be achieved and performance against those targets by MSs.

5.2.1. The European Green Deal

With regard to the EGD, there is a need to clarify and deal with inconsistencies between existing legislation before adding too much additional legislation. There is also a concern that additional legislation might be very demotivating for SMEs and add administrative burdens and financial costs that cumulate with those already in existence. The additional costs and administrative burdens need to be thoroughly assessed before legislation is enacted. Will it be possible to retain the 'one in one out' principle?

When designing programmes to support the implementation of the EGD, it will be necessary that the support is as wide ranging as the policy. This will require involvement of support at all levels (EU, national, regional, local) so that all SMEs come within scope. Different types of support and incentives

would have to be designed for the different segments of the SME population to make sure it is relevant to their needs. Thus, for example:

- For leaders/innovators/early adopters, there would be (and indeed there already is) innovation support/financial instruments/institutions etc. providing specialist support.
- For followers/later adopters/laggards, wide ranging support needs to be put in place through trusted local, regional and national networks/business and industry associations, and certification processes, etc.
- Consideration might even be given to a 'green' equivalent of the Digital Innovation Hubs – Green Transition Hubs?
- To achieve wide reach, it would also be necessary to reach out through Technical colleges, universities and schools (new courses or through existing curricula).
- Family business organisations/business transfer organisations are also key support organisations (e.g. Transeo).

5.2.2. The Digital Transition

It appears that most programmes at EU level have to date been developed for the innovators and early adopters, and arguably, more needs to be done in a co-ordinated manner at EU, national, regional and local levels to address the SME majority and laggards.

To draw the mass of SMEs further into the DT through the Digital Single Market, a great many issues need to be resolved, some of which are external to SMEs, such as those related to data sharing and market power of large enterprises; while others are internal to SMEs relating to SME goals and owners' orientations (human factors, risk aversion), the SME's capabilities (financial, technical, and staff) and relationships with support systems.

As in the case of the EGD, given the scope of the DT, support for SMEs should mirror the ambition of the transition, and draw on a wide range of social and economic actors, public and private. A bottom-up approach that draws on trusted local and regional support organisations, schools and colleges, that speak the language of SMEs, is required to complement top-down policy initiatives. To this end, a segmented approach, similar to that suggested for the EGD in the preceding paragraphs, should be followed.

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This study focuses on the role of SMEs in Europe's long-term industrial strategy. It introduces the recent SMEs and digital strategies, together with the European Green Deal. The author recommends the rigorous application of the *Think Small First* principle in impact assessments for legislation and policy evaluations, the development of different strategies for different SMEs segments, arguing in favour of an SME policy, which mirrors the digital and green twin transition.
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