



Enabling European Micro- enterprises to Digitalise and Grow



DiTEM

Digital Transformation of European Micro Enterprises

JULY 2019

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



Co-funded by the
Erasmus+ Programme
of the European Union



DiTEM

Digital Transformation of European Micro Enterprises

DiTEM

Digital Transformation of European Micro-enterprises

WWW.DITEM.EU

This project aims to develop an innovative training system to allow Micro-enterprises (MEs) to take up the Digital Transformation. In the competitive market of the third millennium, there is a need to equip businesses to become the enterprises of the future, where digitalisation of companies and e-leadership skills will be a must. Novel digital technologies (particularly Social, Cloud, Mobile and Big Data) are transforming the way companies operate across all markets. The DiTEM project builds upon previous initiatives in the field to create a unique and practical delivery model.

MEs play a crucial role within the European economy, making a major contribution to wealth creation, economic growth, and job creation. The DiTEM project has a specific focus on Micro-enterprises because they have very different needs, resources and capabilities in comparison to larger enterprises.

The consortium is comprised of 7 partners from 6 EU countries: UK, Italy, Finland, Greece, Bulgaria and Denmark. The partners include representatives of the target group and a combination of different actors able to guarantee exploitation of project results by external stakeholders. All project partners have worked with entrepreneurs and business for many years and have used different approaches in supporting innovation and business development.



Acknowledgements

The partners would like to thank all those who took part in the research and implementation of this project. We would like to thank the survey respondents for sharing their views.

Manchester Metropolitan University (UK)

Eurocrea Merchant (IT)

CrystalClearSoft (GR)

Turku University of Applied Sciences (FI)

BIC Innobridge (BG)

Exponential Training and Assessment (UK)

it-forum (DK)

And a special thank you to all of the Micro-enterprises across the 5 countries who took the time to complete the initial survey and those who participated in the training.

Foreword



This report introduced Micro-enterprises across Europe to digital technologies to transform aspects of the business. The Micro-enterprises are representative of a cross-sector of businesses that vary in size from 0 – 5 employees from the United Kingdom, Denmark, Finland, Italy, Greece and Bulgaria.

The project was developed to respond to research on Micro-enterprises, which showed that Micro-enterprises often fail to successfully implement and exploit digital technologies.

During the development phase of the project, the partners agreed that there should be two key components: face to face coaching and an online platform. The online platform provides an outline of the technologies available. It was felt that due to the pace of technologies, to be too prescriptive of a particular technology would date the platform before it was launched. Instead, we took the decision to provide an overview of alternative, more in-depth support available in the different regions.

We hope that the recommendations are adopted to start to empower Micro-enterprises to successfully implement the appropriate technologies for their business.

Best wishes,

Mandy Parkinson

*Mandy Parkinson
Head of Business and Public Engagement
Manchester Metropolitan University*



Contents

Acknowledgements3

Foreword4

About the project9

The challenge facing European Micro-enterprises9

Digitalisation of European Micro-enterprises: approach and aims10

Digitalisation platform10

Initial analysis13

Pilot training pre- and post-surveys14

Training format15

General findings.....15

Maintenance of the platform16

Content16

Community17

Personalisation17

Micro-learning17

Interactivity.....18

Conclusion18

Project dissemination and promotion of the DiTEM tools18

General objectives18

Key messages19

Target groups19

Communication tools19

Conclusions and Recommendations.....21

Policy recommendations24

Recommendation 1: More guidance and training for MEs in the future25



Recommendation 2: A European Digitalisation platform26

Recommendation 3: Suggestions for new EU programmes28

Digitalisation check.....29

Digitalisation mentor programme29

Digital process re-engineering.....29

Digital boost programme29

Recommendation 4: Policy Commitment.....30

Catalogue of other sources of training31

Online Resources31

Open up Entrepreneurship (OpEN project).....31

Framework for Innovation Competencies Development and Assessment (FINCODA).....32

SME GAP (Growing Apprenticeship Partnerships for SMEs).....32

Face to Face resources in the UK.....33

Digital Growth Programme33

Using technology to grow your business33

Cheshire and Warrington Business Growth Programme34

GRIP, GAINS and Start and Grow Enterprise services.....34

Training and knowledge.....35

References.....37

Executive Summary



The DiTEM project is meant to cover the following aspects of transferring knowledge to Micro-enterprises (MEs):

- An introduction to Digital technologies (e-learning platform)
- Practical workshops, where MEs relate the trends to their own business
- Advice – How to get started with digital technology in own business

The project covers the initial introduction to digital technologies; however, it does not advise or provide guidance to MEs on how to use digital technologies. Instead, it allows MEs to be equipped with the necessary knowledge to get started.

The training format within the workshop element and access to the e-learning platform has worked satisfactorily. However, it seems that more than 40% of the participants did not complete the e-learning course. Analysis of why participants did not complete the e-learning element has not been undertaken at this time.

From the workshops, we gained information about MEs' needs and compared them against the results of EU project LEAD, which analysed leadership skills for Small to Medium-sized Enterprises (SMEs). In this project, it is obvious that there is major difference between an SME of 20 employees and an SME with 200 employees. It appeared that smaller SMEs had the same or similar challenges as MEs. It therefore seemed sensible to limit future projects to MEs, which the DiTEM project has understood as a company with up to 20 employees.

Based upon the experience gained, we developed four policy recommendations in the following categories:

- **Training format for further training for MEs**

MEs focus on operating the company and rarely focus on implementing new ways of running the business. Therefore, learning must be done on the job and based on the company's specific needs. MEs need more hands-on guidance and training in digitalisation than the DiTEM project offers.

- **A Micro-enterprise platform – offering overview of tools, consultancy companies and technologies available for MEs (and potentially SMEs)**

For a small company, it is quite impossible to find out which digital methods can be used to maximise their investment (time and financial investment). There is a need to support knowledge of technology trends and create a platform with a broader set of tools and methods than just digitalisation.

- **Programmes supporting digital transformation**

MEs involved in the DiTEM project have welcomed such European initiatives on digitalisation, and expressed their need for further programmes providing targeted offers.

Digitalisation is a task that they find difficult to solve themselves, therefore EU programmes should continue to provide targeted offers to MEs and smaller SMEs to motivate them to further work on digitalisation.

- **Policy commitments**

If individual member states fail to focus on the need for digitalisation, even for smaller companies, a large number of businesses will face competitiveness issues in the future. It is therefore necessary that politicians and other national decision-makers adopt the digital agenda and help create optimal framework conditions.

These policy recommendations are explained further in this document.

About the project

The challenge facing European Micro-enterprises

Beckinsale and Ram (2006) believe that within a Micro-enterprise, the failure to successfully implement and exploit digital technologies is due in part to management limitations. This limitation can result in the organisation not viewing digital technologies strategically, therefore implementation becomes ad hoc and unformulated (Nath et al, 1998, Darch (2002) and Lucas, 2002, and Beckinsale and Ram, 2006). Furthermore, Ashurst et al (2012) and Chibelushi and Costello (2009) argue that due to their size, Micro-enterprises have fewer resources and reduced access to specialist expertise which has the impact of constraining their digital technology adoption.

The challenge for Micro-businesses (MBs) is to identify the technologies that are not only useful to them now but that will support their future plans. It is equally important that, when MBs are considering digital technology adoption, this is not done in isolation but part of a wider holistic review of the business strategy of the organisation (Parkinson, 2019).

Within many Micro-enterprises there is lack of strategic perspective when it comes to digital technologies and social media (Rodgers et al, 2002, Nath et al, 1998, Darch and Lucas, 2002, and Beckinsale and Ram, 2006). The lack of guidance within this arena places considerable pressure on Micro-businesses to adopt the latest technologies even when they are unclear as to how to maximise these (Kalakota and Robinson, 2001 and Jeyaraj et al (2006). Furthermore, the sectoral differences can have a detrimental impact when imposing a one-size-fits-all digital strategy (Drew, 2003).

Furthermore, Pickernell *et al* (2013 pp: 868) highlights that “.... organisational readiness was, however, dependent on the personality of the owner/manager...” Indeed, the owner/manager’s attitudes have been cited as having a direct impact on digital technology adoption and productivity, both positive and negative (Grandon and Pearson, 2004, Goldman Sachs, 2015 and Morrison *et al*, 2003). Gray (2002) argues that an understanding of the Micro-business owners’ work motivations is essential.

Digitalisation of European Micro-enterprises: approach and aims

Digital technology is transforming the way enterprises of all sizes and across sectors (public, social or private sectors) operate. However, not all enterprises embrace or are equipped to exploit the benefits offered by digital technologies. This is especially true of Micro-enterprises which often lack the knowledge, skills and resources to develop and implement digital transformation strategies.

The Erasmus+ Innovation project, 'Digitalisation of European Micro-Enterprises' (DiTEM) is aimed to help MEs prepare for a digitalisation process.

This report explores the challenges and issues faced by European Micro-enterprises committed to the digitalisation of one or more business processes. It describes the project methodology and the results of a series of pilot tests involving Micro-enterprises from the United Kingdom, Italy, Greece, Finland, Bulgaria and Denmark.

Digitalisation platform

Following initial research, partners developed the DiTEM learning portal. The portal comprises of a set of six e-learning modules, each exploring different aspects of digitalisation: E-leadership, Social Media, Cyber security, Cloud, Mobile solutions and the Use of Big Data.

The e-learning platform also comes with a related workshop, where a coach guides the company representatives through the most important areas in relation to developing a digital strategy.

Partners developed the DiTEM learning portal with the learning modules available in English, Danish, Italian, Finnish, Bulgarian and Greek.



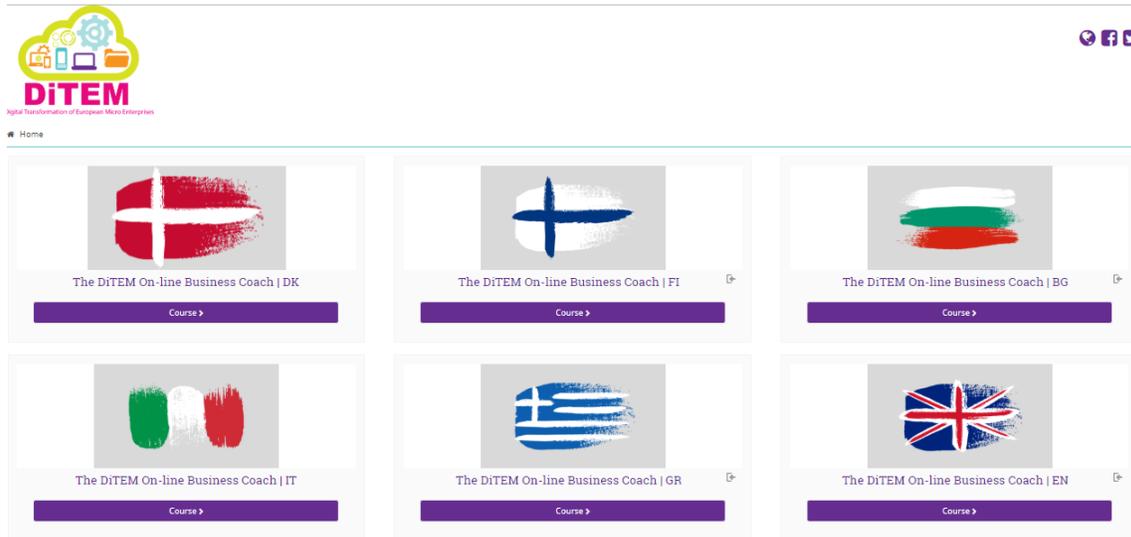


Figure 1: The Home Page of the Multi-lingual DiTEM Learning Portal

The DiTEM learning portal was populated with six e-learning modules and supported by a DiTEM coach to introduce participants to the DiTEM project and learning portal.



Figure 2: The Six DiTEM Learning Modules

The project is by nature an introduction to the main areas of digitalisation, and therefore only gives an **overall introduction to the topic and a simple toolbox to continue the work.**



In the workshop and 1:1 coaching, a more specific discussion is initiated in relation to the individual company's needs and opportunities.

A pilot training was undertaken in five European countries with a total of 120 attendees.

Following the coaching workshop, companies were encouraged to continue their work and develop a digital strategy for their own company. Not all partners have the means to provide follow-up advice, so there is a risk that good intentions are not followed by concrete actions.

Initial analysis

The most interesting findings from the initial analysis were:



Less than
50%
of MEs surveyed had a digital strategy

MEs are
aware
about the importance of using digital tools

Only about
1/3
use the Cloud, Mobile or Social Media in their business

The project started with an initial survey analysis, to ascertain MEs' need for digitalisation knowledge and to identify which parts of the digital trends were most relevant to them.

The survey was completed by 224 MEs, and it highlighted that a majority of them did not have a digital strategy for their business. Following the survey, participants showed a high interest for **e-commerce topics**, i.e. new technologies helping to boost their activity. They were also interested in broadening their knowledge of **social media**, considering that the most used are those 'traditional' platforms such as Facebook and Twitter. Finally, they were keen to learn about online solutions to improve their business in relation to **file storage, collaborative and remote working** among cloud tools.

Big Data is mostly used for the disclosure of protected figures, gaining knowledge of customers and product/service development.

MEs' use of mobile solutions included online payment, communication and advertising.

Most of the respondents are very small enterprises (1 to 3 employees), largely consisting of IT/software companies and management consulting.

The analysis formed the basis for the e-learning platform and development of the coaching workshops in connection with using the e-learning modules developed during the project.



Pilot training pre- and post-surveys

Prior to the pilot training, pre-training surveys were undertaken with approximately 120 participating companies. Participants completed a questionnaire about their prior knowledge of digitalisation strategies and about their knowledge of the current digital trends.

The survey confirmed the findings of the first analysis: it identified that knowledge about digitalisation strategies, methods and concepts is generally limited amongst MEs; and the use of digital tools remains limited to the areas of most relevance for the companies (based upon the owner's gut feeling). This means that MEs typically use very few digital technologies in their businesses, and often not even the basic tools.

There has been a two-year period between the initial analysis and the completion of the pilot training platform, during which it seems that the level of understanding and the usage of digital technologies remained static. From a development perspective, this is a reason for concern – as it seems that MEs are not adopting digital technologies at the same speed as larger enterprises.

Based upon an analysis of the respondents' answers, we can conclude the following:

- Knowledge about digital tools is similar across partner countries (except from Bulgaria, where there is a significantly higher rating);
- Surprisingly, the advanced knowledge of Cybersecurity and Cloud seems to be top scorer, whereas the use of Social Media is generally lower, and so is, unsurprisingly, the use of Big Data;
- Most of the MEs surveyed are aware about the importance of using digital tools – and acknowledge that it could help them grow their business;
- The use of the digital technologies is low across MEs and it would appear that the majority of them do not have a strategy for starting to use digital tools.

Based upon the post survey undertaken after the MEs' training, the following can be concluded:

- Knowledge about digital opportunities was significantly strengthened;
- MEs appear to be more enthusiastic about developing a digital strategy and using digital tools in their business;



- MEs are still lacking practical knowledge regarding where and how to start implementing digital tools.

Furthermore, the post-training surveys completed by participants in the pilot training and related workshop show, that a large number of companies have a great need for follow-up and continued assistance post training.

Training format

A number of requirements regarding the format and operational details of training and education provision were evident from the qualitative research, namely the importance of self-learning, the day to day requirements at work allowing only short training sessions, or even one-to-one coaching. Consultancy projects are often used to transfer knowledge and gain skills.

Consequently, there is a preference for **affordable and short training** (a few days, with flexible hours), and more targeted towards current acute business issues.

It is also important to note that some business founders and key employees may have a deep Higher Education background. Hence, both targeted training as well as a broad and deep foundational education is important in finding e-leadership.

General findings

The results highlight that many MEs actually need leaders with **very strong, practical, hand-on ICT skills** for the potential e-leadership education offers to be developed.

Abilities clearly differ between large corporate companies and MEs. Leaders of large businesses only need a general understanding of ICT capabilities (knowing what is possible, being able to budget, source and allocate work to be done etc.). However, MEs tend to need to be more closely involved in the production of their digital technologies (such as IT support for business function e.g. finance, marketing etc.).



Another significant finding is that many MEs rely heavily on **outsourcing** their ICT needs. Outsourcing recipients may be consultants, vendors or other partner enterprises in the supply chain.

It is also very important to highlight that we have found **significant differences in the need for training across the EU countries**, e.g. MEs in Denmark have other challenges than MEs in Italy/Bulgaria. The reason can be the different level of digitalisation in the sector. Denmark is often mentioned as having one of the most digitalised public sectors, which sets a benchmark in the level of digitalisation required by MEs.

In terms of technical content most needed, **cloud computing, big data/data analytics and mobile apps** development have been mentioned as technology trends that result in increased training and education needs for MEs.

Regarding other **e-leadership skills** required, answers from the participants were quite diverse and training could cover a full range of topics. **Communication skills** were mentioned, an understanding of the customers and the market, as well as **change management and project management, business development and sales and marketing**.

Maintenance of the platform

Following the analysis and considering e-learning trends that have become stronger in 2018, we examined the emerging needs which would need addressing to keep the platform up to date, develop it even further and increase its impact.

Content

In terms of content, emphasis should be given on practice. An addition of practical segments for each module should provide the confidence and skills to take actions and transfer participants' theoretical knowledge into practice. In order to improve practical skills further, a final segment can be included, with scalable difficulty and case studies that will require the use of tools and the knowledge gained from the different modules. It is also worth mentioning that revisions of content on a regular basis should be considered essential, e.g. every six months, or even shorter periods to keep it up to date and constantly improved.



Community

A greater effort should be placed into building a strong DiTEM community. Evidence shows that education improves when knowledge is shared among peers. Forums, chat boxes, note sharing help people share ideas, encourage discussion and provide useful hints and contacts in a collaborative environment. It becomes easier for trainers to provide extra information for a module that needs more clarifications, answers for participants' questions and practical help by signposting. A stronger and more energetic community helps participants build their confidence in overcoming issues, as when they understand that the same issues were encountered by their peers. It also strengthens interpersonal relationships and builds better practical skills, as learners commonly share hints and solutions to difficult situations.

Personalisation

Instead of asking participants to rate their knowledge with a pre-training questionnaire to evaluate themselves, learners can be provided with a series of questions to test their expertise and skills in each module. Once learners choose their priorities from the modules available, areas where they have scored low can be addressed first. The best way to satisfy a variety of learning preferences is to design content that combines text, graphics, videos or other elements mentioned in Micro-learning section.

Micro-learning

Micro-learning has already become a strong trend, as individuals' attention span is getting shorter. Specific benefits include quick deployment in their actual businesses, fast learning through regular 'refreshers', increased productivity and easy tracking. Since the structure of the course is already made of short modules, short revision videos can be made to summarise the information contained in each module. The learning experience can also be enhanced by adding short games and quizzes, interactive infographics or even short videos to address specific questions that the participants might have difficulties understanding such as search engine optimisation, cyber security issues, GDPR etc.



Interactivity

More time must be invested in **interactivity**. When learners are able to interact with their learning platform in more creative ways, they become more involved and more interested in logging in and pushing their learning forward. The graphical interface could be improved to it make easier to include some or all the propositions contained in the previous sections above. Finding out participants' initial reasons for signing up to the course can help tailor notifications to best respond to MEs' needs, therefore increase engagement. Finally, one of the greatest ways to improve commitment and advance interactivity even further is by implementing more visually appealing rewards for participants who accomplish the tasks required, such as badges that are also accompanied by a pleasing sound effect when acquired by the participant (e.g. Nintendo games). Badges and leader boards would surely make training exciting and fun. Gamification can drive strong behavioural change and make learners take a more active role in the DiTEM course learning.

Conclusion

Content, Community, Personalisation, Micro-learning and Interactivity are the five basic categories that need to be further explored to enhance the DiTEM platform and increase its impact. All five can be implemented one by one to provide an improved platform. However, for optimal results, it is recommended to consider implementing as many of these categories as possible to advance the platform for future use.

Project dissemination and promotion of the DiTEM tools

General objectives

The main objectives of the informational and promotional activities ensuring project sustainability are as follows:

- To inform MEs about the DiTEM project, its implementation and results,
- To promote the main objectives, as well as the benefits arising from the implementation of the digitalisation not only in business enterprises, but in every aspect of modern life.



Key messages

The aim of the DiTEM project is to contribute to the development of Digital Entrepreneurship across the EU by facilitating the development and acquisition of e-leadership skills and digital competences in Micro-enterprises.

The main objectives of the project can be elaborated on to ensure that the objectives of all focus areas convey the following messages:

- The importance of the ongoing digitalisation process in all sectors of social and economic life;
- The need for a qualified workforce, and how DiTEM could help in the first steps of acquiring additional qualifications;
- The availability of the training platform - it is free, available in 6 languages, with accessible content, especially for beginners;
- Funded by the European Commission under the Erasmus+ programme, in line with the Commission's priorities, for further development of a digital single market (the key aim of this priority reads: 'Bringing down barriers to unlock online opportunities');
- Long-term commitment of the project - the training platform is to be supported actively several years after completion of DiTEM project.

Target groups

Information and promotion activities on the DiTEM project shall be addressed to the following groups:

- ME Beneficiaries and potential ME beneficiaries
- Social partners, business environment, NGOs
- Vocational Education and Training (VET) organisations
- Media (e.g. press, TV, radio: local and countrywide, social media)
- General public

After the project's end date, messages should focus on the usefulness of the training platform, instead of the project itself.

Communication tools

Information and promotion activities can be conducted through:

- Opening/closing/information conferences, promotional events for general public (forums, fairs, open days), highlighting good practice and successful results (from users, digitalised businesses, VET organisations etc.)
- Contacts with the media: briefings, interviews, press releases, e-newsletters, articles etc. Due to the nature of the project, the use of online media and social media is strongly recommended
- Publications - electronic and paper (brochures, folders, leaflets etc.)
- DiTEM website www.ditem.eu
- Workshops
- Other promotional materials

Conclusions and Recommendations

Based upon the project research and results, feedback and impact from the pilot testing of the DiTEM learning portal, partners concluded that there is a huge need for digitalisation of MEs – much larger than the DiTEM project had scope to deliver.

A number of conclusions were drawn based upon feedback from the pilots carried out in six different countries.

Based on the research undertaken during the project and the piloting of the DiTEM Learning Portal and feedback from Vocational Education and Training (VET) teacher/trainers, managers and entrepreneurs, partners have concluded:

- MEs generally focus on the lowest hanging fruits. The management team can often be the same people also implementing strategic decisions. Therefore, the requirements for further learning initiatives must address the reality of MEs daily work pressure. Moreover, MEs often have limited financial resources and will have competing pressure to use money for extra resources instead of developing a digital strategy.
- The project found that more knowledge transfer is needed, in order to design training programmes. The following format requirements must be considered:
 - The need for digitalisation has never been higher than it currently is, and trends show that it will continue to grow. At the same time, more and more technologies, methods and supporting tools are being developed.
 - Based upon input from MEs, we are suggesting that the EU should be hosting a European wide platform of resources for MEs – which is the purpose of supporting MEs through their digital journey.
 - The generic content of the platform should be continuously updated – and must be open for all vendors to upload a description of their supporting tools. However, the EU must define a set of criteria that has to be fulfilled in order to register products and consultancy services on the platform.



- Many MEs do not have resources (financial and time) to start a digital transformation. A number of these companies are in danger of closure due to competition from more digitalised companies.
- MEs run by leaders aged 50+ tend to have greater scepticism or resentment about the need for digitisation.
- There is a broad agreement amongst European stakeholders and policy makers that digital leadership and entrepreneurship will be key policy topics in Europe over the coming years especially in the context of the digital transformation of the economy.
- The report of the Strategic Policy Forum on ‘Digital Transformation of European Industry and Enterprises’ includes a set of policy recommendations for the digital transformation in the EU including the development of e-leadership. The European Commission has been instrumental in launching initiatives on e-leadership skills since 2013 and the Digital Entrepreneurship Monitor and the Watify campaign in 2015.
- Activities and initiatives are only slowly emerging at national level. First examples and best practice cases have been identified and are showcased on different European Commission web portals. National policy makers and stakeholders now need to become more active and show a strong commitment, implement necessary infrastructures and initiatives and operate these in each Member State so these topics can be anchored in national policies.
- Enterprises need to be made aware of the need and benefits of digitalisation. They need more exemplars and examples that ordinary MEs can relate to in order to inspire and motivate them to engage in the digitalisation agenda.
- Stakeholders and MEs need to understand the reasons for digitalisation and then the process they need to adopt. This must start with a diagnostic and one recommendation could be the development of the DiTEM self-assessment tool as an open education resource (OER) which any ME can use. It is imperative that the tool is in a digital format to ‘practice what we preach’.

- More support needs to be available to identify potential solutions and existing tools that can be used. Most MEs do not possess the know-how to identify the right products and tools as ‘they do not know what they do not know’ This could be a new role (e.g. the DiTEM Coach) who supports enterprises and is a specialist in digital tools.
- MEs need to identify potential for digitalisation of processes and prioritise the high impact, high added value processes, that they can implement first.
- The lack of resources to invest in digital tools lends itself to the use of subscription, cloud-based applications (benefits being NO/LOW capital outlay, low monthly payments helping cash flow), opportunity to increase level of services such as basic, silver and gold...).
- MEs would benefit greatly from a directory of tools tailored to Micro-enterprises (recognising that the tools change all the time).
- There is a need to help enterprises integrate their digital plan into and align it with their business plan. The problem is that relatively few Micro-enterprises have a tangible business plan – this presents an opportunity to advocate the integration of digital processes during the drafting of their business plan. Rarely do business start-up training courses explore the digitalisation process and therefore often digitalisation is not on the companies’ agenda nor business plans.
- In established companies, any digitalisation process requires a well-planned approach and therefore a project plan is essential. This links to another challenge that many Micro-enterprises do not actively use project management tools and therefore will need support with this as well.
- Any change such as introducing new technology is likely to be met with resistance; therefore, it is recommended that a strategy of change is also introduced. Such strategy will address issues such as overcoming change.
- Having a plan enables the monitoring of progress and performance therefore provides an opportunity to evaluate and measure the return on investment.

Policy recommendations

Based upon the knowledge gained in the project, we will strongly recommend that the European Commission focuses on the digitalisation of MEs.

Although the EU definition of MEs is less than 10 employees, we found that in some countries this did not necessarily reflect the segment the DiTEM project attracted. The demographic of the users who took part in the online training ranged from 2 to 20 and therefore incorporated Small to Medium Enterprises (SMEs) in the lower end of this category (10-20 employees) as well as MEs, with both segments having similar digitalisation challenges. We have found that when companies grow, the need for digitalisation becomes even more necessary, except from companies born digital (i.e. e-shops, ICT companies and more). The digitalisation journey often starts when a company grows larger than 2-8 employees.

Therefore, we will suggest that future programmes are addressing companies from 1-20 employees.

We have determined four areas for policy recommendations:



- Recommendation 1: More training is needed
- Recommendation 2: Development of a European digitalisation platform for SMEs and MEs (0 – 20 employees)
- Recommendation 3: Programmes supporting Digital transformation
- Recommendation 4: Policy Commitment

Recommendation 1: More guidance and training for MEs in the future

MEs generally focus on the lowest hanging fruits. The management team can often be the same people also implementing strategic decisions. Therefore, the requirements for further learning initiatives must address the reality of MEs' daily work pressure. Moreover, MEs often have limited financial resources and will have competing pressure to use money for extra resources instead of developing a digital strategy.

We found that the need for training varies from country to country, therefore **country specific training should be considered in future programmes.**

It was observed that some MEs that did not complete the e-learning modules, which may be due the lack of interactivity within the platform.

It is important to remember that the lifespan of the e-learning content is short due to the continuous development of new technologies.

We also found that more knowledge transfer is needed. In order to design training programmes, the following format requirements must be considered:

Format requirements of MEs and entrepreneurial start-ups

- Importance of self-learning – develop some “start modules”.
- Day to day requirement, short training, coaching, consultancy.
- Few days, flexible hours - preferable 1-1 training!
- Targeted, ‘no nonsense’ – and country specific training.

Cont: Format requirements of MEs and entrepreneurial start-ups

- Affordable.
- Other types of training and awareness should be considered.
- SME Leaders need strong, practical, hands-on ICT skills – training must complement their practical approach.
- Continuous improvement and maintenance of the DiTEM platform.
- Continuous marketing of the DiTEM project.
- E-learning cannot stand-alone and the requirement for e-learning content is higher than onsite training.

Recommendation 2: A European Digitalisation platform

The need for digitalisation is higher than ever – and it will continue to grow. At the same time, more and more technologies, methods and supporting tools are being developed.

The DiTEM project addresses a part of MEs need for learning, but the project found that learning only provides a foundation, when MEs are asking for more. In particular, they need **more detailed information and a map of the digital landscape**.

Ideally, a European platform with overall considerations, case stories and inspiration is what is needed. The platform would need to be complemented by a country-specific section that deals with additional

information for each country, with digitalisation offers, digitalisation support programmes, and a database of mentors and certified 'digital support advisors/coaches'.

Based upon input from MEs we are suggesting that the EU should host a European wide platform of resources for SMEs and MEs – with the purpose of helping SMEs and MEs in their digital journey.

As previously explained, we have found that the definition of Micro-enterprise, i.e a company of less than 10 employees, should be expanded to 20 employees, as far as digitalisation transformation is concerned. We therefore suggest that **future EU programmes be extended to MEs and smaller SMEs up to 20 employees**. As far as our research has indicated, no such platform is available or could potentially supplement the learning programme developed in this project. The content of the platform should be updated continuously regarding the generic content – and must be open for all vendors to upload a description of their supporting tools. However, the European Commission should define a set of criteria which has to be fulfilled in order to register products and consultancy services at the platform.



ME/SME digitalisation platform

- E-learning content – to be continuously maintained and updated.
- Quick overview over the technology trends.
- Case catalogue – for inspiration purposes – classified in markets.
- Tools and consultancy catalogue.
- Country specific content.
- Best practices – A method for starting the digitalisation journey.
- Catalogue of national digitalization programs.
- Cyber security awareness and tool.
- On-line Help Desk.

Recommendation 3: Suggestions for new EU programmes

As mentioned previously, we found that a large number of MEs do not have resources (financial and time) to start a digital transformation. A number of these companies could be in danger of closure due to competition from more digitalised companies.

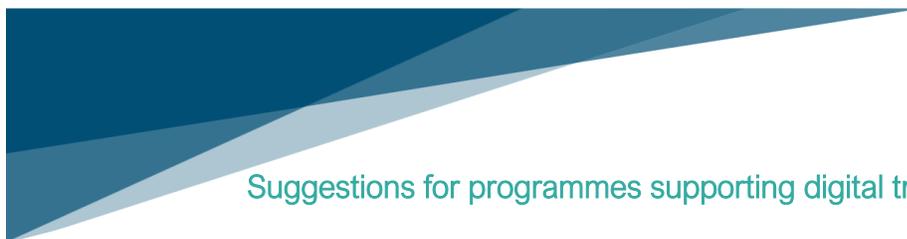
We have not found any digitalisation programmes designed specifically for MEs.

Our findings show that MEs are often overwhelmed by the huge amount of information about digitalisation.

MEs need targeted advice, for example:

- What makes sense for me?
- Where to start?
- Which initiatives have the shortest Return on Investment (ROI)?
- Who can help me?
- Which business processes can be digitalised?

Based upon the needs we will propose new EU programmes supporting MEs to be more digitalised.



Suggestions for programmes supporting digital transformation

- Digital boost – Programme;
- Digitalisation check;
- Digitalisation mentor programme;
- Digital process re-engineering.



Digitalisation check

A short programme, where a digitalisation expert provides 1:1 support to MEs in order to find the best digitalisation process.

Digitalisation mentor programme

A programme which assigns a skilled mentor to an ME for a period of 2-3 months while the ME develops a digital strategy.

Digital process re-engineering

A programme in which all business processes are analysed and new digital processes are designed.

Digital boost programme

We are suggesting a Digital Boost programme for MEs only. In such a programme, MEs can apply for resources to help digitalising their business.

Recommendation 4: Policy Commitment

There is a broad agreement amongst European stakeholders and policy makers that digital leadership and entrepreneurship will be key policy topics in Europe over the coming years especially in the context of the digital transformation of the economy.

The report of the Strategic Policy Forum on ‘Digital Transformation of European Industry and Enterprises’ includes a set of policy recommendations for the digital transformation in the EU including the development of e-leadership. The European Commission has been instrumental to launch initiatives on e-leadership skills since 2013 and the Digital Entrepreneurship Monitor and the Watify campaign in 2015.

Activities and initiatives are only slowly emerging at national level. First examples and best practice cases have been identified and are showcased on different European Commission web portals. National policy makers and stakeholders now need to become more active and show a strong commitment, implement necessary infrastructures and initiatives and operate these in each Member State so these topics can be anchored in national policies.



Policy commitment

- National policy makers and stakeholders to demonstrate commitment towards Digital transformation and digital entrepreneurship and scale up their efforts in a longer-term perspective.
- National funds and programmes to be specifically oriented towards promotion of digital transformation and the related skills required including those for digital innovation leadership.
- EU Member States to consider using European structural and investment funds, i.e. the European Regional Development Fund and European Social Fund, to invest in training and lifelong learning projects helping MEs to make the transition to the digital economy more quickly.
- National governments and stakeholders to implement rapidly best practice experiences in making best use of such funds from highly successful projects.

Catalogue of other sources of training

Online Resources

Open up Entrepreneurship (OpEN project)

<https://www.openup-project.eu/index.php>

Open up Entrepreneurship (OpEn) project fills the identified knowledge gap where existing and prospective entrepreneurs seek for business solutions into the digital technologies but lack the necessary skills and capabilities to exploit the vast potential of e-business models in the global market.

The main result and Intellectual Output of OpEn project is an open multilingual (English, Greek, Italian and Spanish) online course of 32 hours total duration, which is constructed from three Thematic Units as follows:

- Business Development
- Personal Development
- Digital Development

This course is available via the special link of the e-learning platform: <http://openup.upatras.gr/modules/auth/newuser.php>

For the implementation of this main result, the production of two other previous Intellectual Outputs was required:

- Skill profile identification and Module Outline, which includes the identification of the demanded digital & e-business skills for those who want to act within the digital economy and global market.
- E-module design and service set-up, which includes at the beginning a review of state of the art of pedagogies and best practices for entrepreneurial online education. Then, based on this background, a design and implementation methodology of OpEn multilingual online course follows.

Framework for Innovation Competencies Development and Assessment (FINCODA)

<http://www.fincoda.eu/>

The FINCODA project was born out of the acknowledgment that innovation is vital to both the business and academic environments. It is a critical component for success in many modern-day organisations. A lack or absence of innovation could lead to a drought of creativity, an absence of new ideas, and a failure to see how ‘good’ can be turned into ‘great’.

At the core of this project is the development of the FINCODA Innovation Barometer Assessment Tool. This is a psychometric tool that measures individuals' capacity for innovation.

It breaks innovation into 5 core areas and assesses the individual's capacity in each of these areas separately.

The research underpinning this tool has been conducted by the FINCODA partnership who brings together both the academic and industry innovation expertise from across Europe.

SME GAP (Growing Apprenticeship Partnerships for SMEs)

<http://www.sme-gap.eu/are-you-ready>

Over 2 years, partners in Manchester (UK), Vienna (Austria) and Cordoba (Spain) have been working together to better understand the needs of Small & Medium Sized Enterprises and holding events to encourage greater take up of apprenticeship provision.

Whilst apprenticeship systems vary to some extent across Europe, all businesses have the same needs and often face confusion about the national system. This is compounded by a lack of understanding of the benefits of hiring an apprentice, with many businesses often noticing only the ‘cost’.

The website brings together a range of resources aimed at SMEs and also encourages Business Support Organisations (Intermediary Organisations) to provide consistent and clear messages to businesses.



Face to Face resources in the UK

Across the UK – Partly funded European Regional Development Fund programmes (following the LEAD concept) are available to pre-start, Micro-businesses and SMEs.

These projects are delivered and/or promoted through local Growth Hubs – see link: <http://www.lepnetwork.net/growth-hubs/>.

These are often delivered in conjunction with Higher Education Institutions. Examples below:

Digital Growth Programme

<http://www.llepbizgateway.co.uk/growing-your-business/do-more-online-for-small-businesses/superfast-leicestershire/>

The Digital Growth Programme is a £5.2 million project managed by East Midlands Chamber (Derbyshire, Nottinghamshire, Leicestershire) in partnership with Leicester City and Leicestershire County Councils – it provides dedicated support to enterprises located in Leicester and Leicestershire. It aims to support growing businesses to explore and introduce new and emerging ICT products and services into their business to improve competitiveness and productivity.

Using technology to grow your business

<https://www.businessgrowthhub.com/services/harnessing-digital-technology>

Digital technologies are accelerating at a faster rate than ever, however businesses' reactivity is still slower. This might be due to the digital world still being seen as a confusing and daunting place for some.

Businesses need to consider their customers and employees, how they can enable the connectivity they need and ultimately, how they impact on the overall business model and service.

Adopting digital technology into their business involves a clear strategy, strong leadership and, possibly, a shift in mind-sets.

Cheshire and Warrington Business Growth Programme

<https://www.cwbusinessgrowth.com>

The Cheshire and Warrington Business Growth programme provides fully funded support for local businesses:

Pre-start: Entrepreneurs looking to start a business

New start-up: Trading less than 42 months

SMEs: Small and medium-sized enterprises trading over 42 months

The project currently works with businesses to access the expertise and knowledge that currently exists across the region from the relevant delivery partner to help develop their skills and grow their business.

The business can access 12 hours of fully funded support (in the form of one-to-one meetings, workshops, seminars, masterclasses and more) across a wide range of business growth areas. These include accounts and finance, technology, marketing, HR, product development and many more.

GRIP, GAINS and Start and Grow Enterprise services

<http://www.glos.ac.uk/business-and-partnerships/pages/projects-to-help-your-business.aspx>

The GRIP, GAINS and Start and Grow Enterprise services are part-funded by European Regional Development Funding and delivered at no cost to individuals and businesses in Gloucestershire who meet the programme's eligibility criteria.

Start and Grow Enterprise is for Gloucestershire based pre-start, start-ups, and enterprises (up to 3 years) at any stage of their business journey. A range of events, workshops, networks and reviews will be provided for eligible entrepreneurs, aiming to remove obstacles to progression and provide expert support resources and a powerful community to help grow successful businesses.

GAINS is for SMEs from Gloucestershire and provides a new package of activities to support local businesses looking to grow. Eligible SMEs can access high quality subsidised business coaching, free



masterclasses on the issues contributing to growth, and networking events for learning and support from other companies with the potential to increase productivity and profitability.

GRIP is for SMEs from Gloucestershire and provides support to local businesses that consider innovation is the key to growth. The project provides access to research and knowledge resources, an innovation lab (housing a 3D printer for rapid prototyping), supply chain engagement workshops, clustering and networking, innovation teams, product/service development, commercialisation and bid management.

Training and knowledge

The EU has supported a range of initiatives in recent years, and many of these platforms are still accessible today.

At the start of the DiTEM project, we identified gaps in knowledge that Micro-businesses required, and we attempted to provide businesses with a basic understanding of the benefits of accessing these resources via the online-platform and coaching advice. We took a generic approach, partly because technology evolves quickly, partly to ensure longevity of the platform, which would not be available if we became too prescriptive.

It was clear as the project progressed that the level of digital sophistication across countries and regions differed greatly. By developing the platform as an introductory gateway to digitalisation, we have provided a bridge for businesses to explore their options before moving on to more specific support.

Beckinsale and Ram (2006) as cited in Parkinson (2019) believe that within a Micro-enterprise, failure to successfully implement and exploit digital technologies is due in part to management limitations. This limitation can result in the organisation not viewing digital technologies in a strategic manner and thus implementation will be ad hoc and unformulated (Nath et al, 1998, Darch (2002) and Lucas, 2002, and Beckinsale and Ram, 2006) as cited in Parkinson (2019). Furthermore, Ashurst et al (2012) and Chibelushi and Costello (2009) as cited in Parkinson (2019) argue that due to their size, Micro-enterprises have fewer resources and reduced access to specialist expertise which, as a result, constrains their digital technology adoption.

The challenge for Micro-businesses (MBs) is to identify the technologies that are not only useful to them now but that will support their future plans. It is equally important that when MBs are considering digital

technology adoption, this should be done as part of a wider holistic review of the business strategy of the organisation (Parkinson, 2019).

Within many Micro-enterprises there is a lack of strategic perspective when it comes to digital technologies and in particular social media (Rodgers et al, 2002, Nath et al, 1998, Darch and Lucas, 2002, and Beckinsale and Ram, 2006) cited in Parkinson (2019). The lack of guidance within this arena places considerable pressure on Micro-businesses to adopt the latest technologies even when they are unclear as to how to maximise these (Kalakota and Robinson, 2001 and Jeyaraj et al (2006) cited in Parkinson (2019). Furthermore, the sectoral differences can have a detrimental impact when imposing a one-size fits-all digital strategy (Drew, 2003) cited in Parkinson (2019).

Furthermore, Pickernell *et al* (2013 pp: 868) cited in Parkinson (2019) highlights that

“... organisational readiness was, however, dependent on the personality of the owner/manager...”

Indeed, the attitudes of the owner/manager have been cited as having a direct impact on digital technology adoption and productivity, both positive and negative (Grandon and Pearson, 2004, Goldman Sachs, 2015 and Morrison *et al*, 2003) cited in Parkinson (2019). Indeed, Gray (2002) cited in Parkinson (2019) argues that an understanding of the Micro-business owners work motivations is essential. We believe that DiTEM partly addresses this by combining face to face coaching and online self-directed study. By doing so, DiTEM coaches are able to understand the motivations of the business owner and provide training accordingly.

We would recommend that partners use the DiTEM platform as an initial introduction to digital technologies within the Micro-businesses. All DiTEM coaches should also be fully aware of additional resources that they can signpost their businesses to, relevant to their country as well as globally.

We would also recommend that partners review the national offer within their countries and add this to the catalogue of resources section, so that we are able to provide the policy recommendations with additional resources that have impact across Europe.

References

- Ashurst C, Cragg P and Herring P (2012) The role of IT competences in gaining value from e-business: An SME case study. *International Small Business Journal* [Online] 30(6): pp. 640–658. Available at: <http://isb.sagepub.com/content/early/2011/03/10/0266242610375703.abstract> <accessed 25 February 2019>
- Beckinsale, M. and Ram, M. (2006) 'Delivering ICT to ethnic minority businesses: an action-research approach', *Environment and Planning C: Government and Policy*, [Online] 24 (6), pp. 847-867. Available at: <http://epc.sagepub.com/content/24/6/847.short> <accessed 25 February 2019>
- Chibelushi C and Costello P (2009) Challenges facing W. Midlands ICT-oriented SMEs, *Journal of Small Business and Enterprise Development* [Online] 16(2): pp. 210–239. Available at: <http://www.emeraldinsight.com.ezproxy.mmu.ac.uk/doi/pdfplus/10.1108/14626000910956029> <accessed 10 November 2016 25 February 2019>
- Darch, H. and Lucas, T. (2002) 'Training as an e-commerce enabler', *Journal of Workplace Learning*, [Online] 14(4), pp. 148-155 Available at: <http://www.emeraldinsight.com.ezproxy.mmu.ac.uk/doi/pdfplus/10.1108/13665620210427276> <accessed 25 February 2019>
- Drew, S. (2003), "Strategic user of e-commerce by SMEs in the East of England", *European Management Journal*, [Online] 21(1), pp. 79-88. Available at: http://ac.els-cdn.com/S0263237302001482/1-s2.0-S0263237302001482-main.pdf?tid=ea8a53b0-a927-11e6-809e-00000aab0f01&acdnat=1478990138_d5c2d04cd82fe08a07a3ecfc635eb7cf <accessed 25 February 2019>
- Jeyaraj, A. Rottman, J. and Lacity, M. J. (2006) 'A review of the predictors, linkages and biases in IT innovation adoption research'. *Journal of Information Technology*, [Online] 21(1), pp. 1-23. Available at: <https://link.springer.com/content/pdf/10.1057%2Fpalgrave.jit.2000056.pdf> <accessed 25 February 2019>
- Kalakota, R. and Robinson, M. (2001) *E-business 2.0: Road-map for Success*, Harlow: Addison-Wesley



Lewis R and Cockrill A (2002) Going global – remaining local: The impact of e-commerce on small retail firms in Wales. *International Journal of Information Management* [Online] 22(3): pp. 195–209. Available at: [https://doi.org/10.1016/S0268-4012\(02\)00005-1](https://doi.org/10.1016/S0268-4012(02)00005-1) <accessed at 25 February 2019>

Nath, R. Akmanligil, M. Hjelm, K. Sakaguchi, T. and Schultz, M. (1998) 'Electronic commerce and the Internet: issues, problems and perspectives', *International Journal of Information Management*, [Online] 18(2), pp. 91-101. Available at: [https://doi.org/10.1016/S0268-4012\(97\)00051-0](https://doi.org/10.1016/S0268-4012(97)00051-0) <accessed 25 February 2019>

Parkinson, M, (2019) Digital Technology Adoption in the context of increased productivity within Micro-businesses. (Unpublished doctoral submission) Manchester Metropolitan University, United Kingdom

Rodgers, J., Yen, D. and Chou, D. (2002) 'Developing e-business: a strategic approach', *Information Management and Computer Security* [Online] 10(4): pp.184-192 Available at: <https://doi.org/10.1108/09685220210436985> <accessed 25 February 2019>



This Photo by Unknown Author is licensed under CC BY-SA



For more information and contact, please visit: www.ditem.eu