Preparing the tourism workforce in Portugal for the digital future

OECD

OECD Tourism Papers

Preparing the Tourism Workforce in Portugal for the Digital Future

After a decade of steady growth, the tourism sector in Portugal is facing its most acute challenge in modern times, in the wake of the COVID-19 pandemic. As inbound visitors return to Portugal, the tourism workforce will need digital skills to make effective use of new technologies, and exploit the opportunities digitalisation is opening up for marketing, as well as product and destination development. Successful digital uptake by businesses will be a driving force in building recovery and resilience in the longer term. While there has been progress in recent years, especially in response to the pandemic, there remains considerable scope to go further. To support this digital transformation, this report examines and assesses current policy approaches to support digital skills and workforce development in the sector, and presents a selection of policy considerations to: i) address digital transformation gaps, shortages and opportunities for workforce organisation and skills development, and ii) enhance governance mechanisms to support the digital skills transformation of the tourism workforce.

ABOUT THE OECD

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

ABOUT OECD TOURISM PAPERS

This series is designed to make available to a wider readership selected studies drawing on the work of the OECD Tourism Committee (www.oecd.org/cfe/tourism). OECD Tourism papers address issues such as trends and policies, innovation, sustainability, skills and statistics. The series complements OECD tourism publications, and aims to share knowledge, stimulate discussion and analysis on specific topics and obtain feedback from wider interested audiences on specific topics.

The report was approved and declassified by the OECD Tourism Committee on 27 September 2021 [CFE/TOU(2021)7/FINAL] and prepared for publication by the Secretariat. It was authorised for publication by Lamia Kamal-Chaoui, Director, Centre for Entrepreneurship, SMEs, Regions and Cities, OECD.

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

Acknowledgements

Table of contents

Overview and policy recommendations

Tourism is a vital pillar of the Portuguese economy; however, after a decade of steady growth, the sector in Portugal, as elsewhere, is facing its most acute challenge in modern times, due to the COVID-19 pandemic.

While the outlook has improved over the last year in large part due to progress on vaccine development and distribution, there remains considerable uncertainty; including on the level of demand and speed of recovery, and how these will affect labour and skills demand in the tourism economy. However, with acceleration in digital up-take during the pandemic, to meet changing business and consumer needs and preferences, it is clear that tourism, and the skills needed in the sector, are likely to be very different in the future.

As Portugal begins to encourage the return of inbound visitors, there is likely to be a steady rise in tourism sector employment levels. To maximise the sector's recovery, the tourism workforce will need the digital skills to make effective use of new technologies, and exploit the opportunities digitalisation opens up for marketing, and product and destination development.

Despite progress in recent years, tourism sector digitalisation in Portugal appears to have significant scope for development, and successful uptake by businesses is set to be a driving force in building recovery and resilience in a post-COVID-19 era. This will include more than take-up of appropriate technologies and adjustments to business models; it will require businesses to have, and retain, the necessary 'new' skills in the workforce to make best use of the digital systems and tools.

The impact of digitalisation on the tourism economy of Portugal

Digitalisation is not new to the tourism and travel economy of Portugal. Many, mostly large firms have made significant investments to integrate sales and marketing with online platforms. For these businesses, the value and potential of digitalisation has gone much deeper with early investment in transforming many aspects of customer interactions, along with the opportunities for big-data and analytics to understand customer preferences and build ongoing relationships.

The outlook for tourism jobs and businesses in Portugal, as elsewhere, post-pandemic remains highly uncertain. However, expectations are that when visitors return, they will increasingly use online platforms to access information and make reservations and purchases, while contactless menus, ordering and payments are likely to become more established in the food and beverage sector. Meetings and events are also expected to be held more often in virtual or hybrid formats.

Forward-looking businesses will adjust business models to reflect changing visitor demands and expectations. Digitalisation is anticipated to play an increasingly critical role in that adaptation. Against this background, it is evident that:

- Pre-COVID-19, digitalisation was highly polarised in tourism businesses in Portugal, with a wide gap between the digital capability of large firms and SMEs. Although this is not homogeneous across firms, many of the smaller businesses that dominate the tourism offer have been especially slow to take up digital systems and tools. Digitalisation is particularly poorly developed for restaurant, beverage, attraction businesses, and tourism guides.

- During the pandemic, there has been a faster uptake by some lagging businesses in introducing digital contactless tools including for online bookings, digital menus and ordering, and contactless payment. However, many established family owned or older manager businesses remain unaware of, and/or lack the capacity to realise digitalisation opportunities.
- Where there has been a recent increase in digital uptake, this has helped smaller businesses to adjust to COVID-19 health and safety regulations and tap into residual visitor demand. However, these developments typically lack integration within business models and have neglected to provide the skills needed for the workforce using introduced technologies.

Embracing digitalisation through the tourism ecosystem will present acute challenges for smaller businesses resistant to necessary change, or lacking the management time, knowledge or capital to invest in the changing skills needed by their workforce to make effective use of technologies. Furthermore, digital literacy and technology adoption are likely to be influenced by the quality and capacity of digital infrastructure, and access to knowledge sharing networks, both of which tend to be more highly developed in urban areas.

Addressing digital skills gaps and shortages

Digital skills gaps in much of the tourism workforce are thought to be widespread and reflect a lack of familiarity with basic digital tools and applications. These gaps hold back effective online marketing and communications, harnessing social media, monitoring online reviews and routine data analysis. Future tourism skills gaps are expected for programming skills, artificial intelligence (AI) and robotics integration, developing and harnessing augmented reality (AR) and virtual reality (VR), although all but the largest employers are likely to choose to out-source these skills to specialist businesses and consultants.

Of particular concern are the digital knowledge and skills gaps affecting owners of smaller businesses and owner-managers, where there is a need for:

- A widespread uplift on managers' knowledge and understanding of the digital transformations affecting the sector and the business case for digitalisation in aiding recovery and building resilience.
- An appreciation of the digital technology options likely to be relevant to their own businesses and to help companies understand what is needed for reskilling and upskilling their employees (in different functions) and the pathways to tackling this flexibly and cost-effectively.
- A better understanding of their own digital skills needs and those of other managers, necessary to optimise digitalisation in key business functions and motivate workforce adjustment.

However, management skills gaps are not homogenous across smaller firms, with many smaller accommodation providers in Portugal considered relatively early adopters (pre-pandemic), thus helping them to align website integration, platform-based sales and online marketing and social media promotion. Similarly, new entrant businesses and start-ups among younger and often digitally literate entrepreneurs are typically strong adopters.

Evidence of digital skills shortages in tourism in Portugal until very recently has been adversely affected by the pandemic curtailing recruitment activity. When recruitment picks up, some specialised skills constraints are expected to emerge, with particular concerns about the sector's weak competitiveness for those transferable digital skills in demand across the economy (e.g. web design, social media marketing, data analytics), and for combining customer handling skills with digital literacy.

The report identifies a range of important constraints to addressing current and future digital skills needs in tourism, including:

- The limited digital focus and cohesion of much of the education and training system across Portugal and the quality of its responsiveness, especially for continuing education and reskilling provision.
- A lack of focus and cohesion in the delivery of initial education and training to meet the digitalisation skills needs of the future workforce, including in Portugal's tourism and hospitality schools.
- Existing funding mechanisms are unable to meet the needs of tourism businesses, and are not well understood by managers in smaller firms.
- An inability to reach smaller firms who are likely to prove difficult to engage with due to other priorities and limited investment potential in workforce skills.

Tackling digital transformation needs, challenges and constraints calls for a distinct, integrated, and strategically driven policy response to address observed rigidities to effective uptake and provide the necessary transformation focus. The report proposes a consensus approach across tourism stakeholders centred on the development and implementation of an appropriately resourced *Digital Capacity Building Plan*, which prioritises smaller firm development while maintaining the scope to support wider digital transformation across Portugal's diverse tourism sector. The Plan would be based on four separate but inter-related development 'pillars': i) tackling low management awareness across tourism enterprises; ii) providing 'central' digital leadership for the sector; iii) enabling a digitally skilled and responsive existing workforce; and iv) identifying emerging changes and needs.

The proposed development pillars were widely supported in stakeholder discussions, and several recommendations are outlined below to provide a framework and focus for the *Digital Capacity Building Plan* and its implementation. There is a need to:

- Integrate the Digital Capacity Building Plan into relevant government action plans and strategies, including the *Action Plan for the Digital Transition of Portugal*, *Tourism Strategy 2027*, *Reactivate Tourism Plan: Build the future*, and any wider post-COVID-19 sector recovery actions.
- Develop evidence-based priorities to shape transformation actions that take account of current digital polarisation in the sector and enterprise diversity.
- Co-develop a cross-sector digitalisation communication plan to raise and support key stakeholder capability as informed agents of digitalisation among smaller tourism businesses.
- Establish transformation intelligence and implementation capability to respond in parallel to current skills gaps and shortages and also build foresight to anticipate emerging needs.
- Put in place the necessary structures and legal instruments to provide the appropriate resources and accessible digital transformation financing instruments and mechanisms.
- Establish a dynamic and stratified support programme to inform and engage effectively with eligible tourism SMEs and integrate their staff development with digital uptake.
- Develop modular workforce development provision as an agile foundation for transformation support, combining generic digitalisation skills needs with customised content.
- Conduct a review of curricula, content and teaching skills gaps relating to tourism digitalisation in current professional education provision in Portugal.

The case study report also recommends the need for these transformation actions to be conducted in parallel with national actions to tackle digital infrastructure gaps in Portugal.

Enhancing governance to support a digital skills transformation

Digital transformation actions will need to be shaped and steered by proportionate and well-placed *governance* mechanisms. Effective governance will build on existing strengths in Portugal and with Turismo de Portugal, the natural choice to coordinate action across government, industry and other stakeholders. It will also tap the legacy of public-private sector collaborations in the country including that

forged through the dialogue of the National Commission for Tourism Training and NEST as a tourism innovation centre for the sector, and the well-developed regional infrastructure of Destination Management Organisations (DMOs).

At the same time any governance model must recognise existing weaknesses affecting the digital transformation of tourism in Portugal. These include the current fragmentation of policy responses in tourism, multiplicity of stakeholder agencies and interests, industry bodies often having little or no current focus on digitalisation and inconsistent alignment in current actions of digital technology uptake with skills adjustments. To this can also be added a lack of an adequate funding mechanism for digital skills training at scale, potential delays to establishing new legal instruments to enable these, and often weak foundations for up to date and flexible continuing education provision among diverse providers. As potential barriers to effective transformation these issues need to be addressed in the collaborative arrangements for governance put in place. Effective governance would also need high level government engagement and support from across those government Ministries with tourism policy interests.

To avoid further fragmentation, it is proposed existing institutions should be used, to provide the necessary governance, strategic leadership and locus for cross-stakeholder collaboration. These should be drawn together in a single focus which has credibility in the sector and the capability to effectively co-ordinate and represent stakeholder interests, and to integrate both digital innovation and associated skills development needs of tourism businesses. To establish an effective governance framework to facilitate the implementation of the Digital Capacity Building Plan, efforts should centre on:

- **Establishing a centralised leadership focus for the strategy underpinning the Digital Capacity Building Plan**, which has the capability to integrate both digital innovation and associated skills development needs of businesses, has credibility across the sector (with the focus based, if possible, on the National Tourism Training Commission), supported directly by a digital transformation delivery unit within Turismo de Portugal.

- **Establishing a set of core principles for governance**: i) complementarity of approach to ensure coherence and integration with existing initiatives; ii) inclusivity to draw in broad stakeholder engagement; iii) SME engagement; iv) embedded funding; and v) evidence-led processes and prioritisation.

- **Building commonality of interest and quality of collaboration through 'co-responsibility' compacts** or similar inclusive knowledge exchange protocols and supported with early development of a unified online platform for cross-stakeholder and bi-lateral exchange.

- **Building a sub-national dimension for governance of the transformation strategy** (within the Commission) to firmly engage DMOs and other key regional groupings to raise credibility with locally based tourism businesses, and to inform localised engagement for smaller businesses.

- **Developing protocols for specific roles of Commission members** to focus collaborative efforts within the overall strategy, and with a specific responsibility for an aligned technology, innovation and skills foresight observatory for NEST as a Commission stakeholder.

- **Establishing a Commission working group for evaluation and monitoring** of the *Digital Capacity Building Plan* to progressively assess its impact, effectiveness, and improvement potential.

The report provides these governance recommendations alongside those for operational priorities and processes for transformation as a basis for tackling the substantial and urgent challenges facing Portugal as it prepares the tourism workforce for a digital future.

1. Introduction

The OECD Tourism Committee activity on *Preparing the Tourism Workforce for the Digital Future*, examined existing evidence of the impact of digital technologies on work and skills in the tourism sector, likely skills shortages and gaps, and policy responses to help prepare the tourism workforce for the digital future. The assessment took into consideration the opportunities and challenges posed by the COVID-19 pandemic. As part of this activity and at the request of Portugal, the OECD is undertaking an in-depth country case study, which examines and assesses current policy approaches to tourism skills and workforce development to support the digital transformation of the tourism sector in Portugal.

The case study has put together a high-level analysis of current skills gaps and shortages to support the development of Portugal's Digital Capacity Building Plan to increase digital skills of the tourism workforce. More specific goals have been to:

- Support the development of Portugal's *Digital Capacity Building Plan* to increase digital skills of the Portuguese tourism workforce, identifying skills gaps of tourism professionals.

- Support the definition of the governance model that should support digital transformation in the sector including good practices for financing tourism training, both by companies and by education and training operators.

- Help define the role of a Tourism Innovation Centre in improving the level of innovation and digital maturity of tourism professionals.

The case study provides separate policy recommendations to address both digital skills transformation challenges and the underpinning governance issues.

Tourism and digital transformation in Portugal

Tourism is a vital pillar of the economy in Portugal and prior to the SARS-Cov-2 pandemic (COVID-19), the visitor economy of Portugal accounted for 8.5% of the national economy GVA, and grew at more than twice the rate as the overall economy (10.3% compared with 4.0%), according to initial Tourism Satellite Account estimates for 2019. Tourism employed 9.4% of the working population in 2018, 444 000 people, growing by 7.4% over the previous year, again much higher than the broader economy (3.1%). Inbound tourism accounted for 51.1% of total service exports in 2018, and 22.3% of total exports of goods and services. By the start of 2020, the sector in Portugal had seen a decade of continuous and accelerating growth of the visitor economy. This success story for the Portuguese economy went into reverse with the onset of the COVID-19 pandemic and the tourism sector in Portugal, as elsewhere, has subsequently had to face its most acute challenge of modern times.

This case study has been developed as the country starts to encourage a return of international visitors to its destinations. The outlook for the visitor economy from this post-COVID-19 opening remains highly uncertain, but it is likely to see a cautious return to rising employment levels. Skills needs, however, may also be rising due to new requirements on businesses for consumer safety and changing consumer preferences from any enduring effects on tourist behaviours from their 'lockdown' experiences.

Increasing digitalisation is set to be a feature of meeting any changes to business and consumer needs and preferences. It appears the pace of digitalisation in the sector has accelerated during the COVID-19 pandemic as some tourism firms have looked to new or enhanced use of contactless technologies to help them survive during 2020 and the first half of 2021. Overall, however, sector digitalisation in Portugal appears to have a long way to go and successful uptake by businesses is set to be a driving force in building recovery and resilience in a post-COVID-19 era. This will include more than take up of appropriate technologies and adjustments to business models; it will succeed only where those businesses have, and can retain, the necessary 'new' skills in the workforce to make best use of the digital systems and tools.

This activity is consequently important and timely. It aims to assess the transformation gaps, opportunities, and pressures, particularly for workforce organisation and skills development. Portugal has already recognised that successfully tackling these challenges is a strategic priority for the country and has started the process of developing a national plan for digital training of the tourism workforce. The report consequently also examines the prospects and potential focus for that response to support the digital transformation of the tourism sector.

The approach to the case study

This case study builds on the OECD Tourism Committee report on *Preparing the Tourism Workforce for the Digital Future*. This has provided a foundation analysis which, since March 2021, the case study has aimed to deepen and contextualise for travel and tourism in Portugal, by:

- **Conducting a high-level analysis of current skills gaps of tourism professionals in Portugal**: This aims to provide a clearer understanding of the skills needed to face the challenges of the digital transition, current gaps, and the constraints to filling these. This will allow the identification of the critical skills needs to respond to digital trends, existing skills gaps, and potential policy responses to address identified gaps.
- **Defining a governance model to drive the digital skills transformation**: In Portugal, the governance model for tourism education and training is complex, involving several ministries and, within them, a very wide range of education and training service providers. The case study aims to inform a more integrative and holistic approach to the organisation and governance of a strategic plan to support digital skills development in the tourism sector. This also needs to be informed by an understanding of better practices for financing tourism training and of the prospective role to be played in a subsequent transformation strategy by NEST - Tourism Innovation Center Portugal[1].

To meet these needs, the case study has drawn on a review of available relevant literature and a fact-finding survey of key stakeholders to map the current situation, emerging issues and needs, current responses in the public and private sector, and perspectives on the priorities and processes required for a national strategy to guide and support transformation. The literature review and survey were followed by a series of fact-finding roundtables[2] bringing stakeholders together to review an initial assessment of the state of play, discuss issues arising from the survey, and the scope for a Digital Capacity Building Plan for tourism in Portugal.

---

[1] NEST was created in 2019 as a public-private partnership with the objective of promoting the adoption of technology in the sector and supporting the sector in this field.

[2] Five roundtables were conducted in May 2021, targeting i) national public bodies, ii) sub-national public bodies and DMOs, iii) industry associations, iv) selected businesses, and v) education and training providers. A total of 31 stakeholder organisations contributed including representatives from Turismo de Portugal, and peer reviewers from Switzerland and Italy bringing unique country perspectives.

2. The impact of digitalisation on the tourism economy of Portugal

Tourism digitalisation in Portugal in the COVID-19 era

Although urban centres such as Lisbon and Porto remain important hubs for tourism activity in Portugal, the benefits of tourism have reached many parts of the country much less well served by other economic developments. The tourism economy experienced strong growth in the decade preceding the COVID-19 pandemic, creating a range of job and occupational opportunities. These provided an important focus for job creation, especially to coastal and more peripheral parts of the country. These jobs were of particular significance to younger people, providing entry and work experience in sometimes challenging local labour markets for new entrants.

The economy's strong structural dependence on inward visitor spending meant the onset of the pandemic put this success story into a sudden and steep reverse across the whole of the tourism value chain. As in other countries (Jamal and Budke, 2020), COVID-19 effectively saw the inbound visitor economy of Portugal shutting down and the later 'staycation' boost from domestic tourists which benefited some developed economies appears to have had less impact on Portugal.

In mid-March 2020, when the World Health Organisation (WHO) declared the global pandemic, the tourism sector in Portugal entered its most devastating crisis of modern times. Many of the smaller tourism businesses which dominate the sector in Portugal went into hibernation, some have not survived, others – small and larger – went into crisis measures to shrink capacity as they struggled for revenue and capital to survive. These effects are likely to have hit tourist intensive coastal, island communities and rural areas the greatest (Turismo de Portugal, 2021).

The outlook for tourism jobs and businesses in Portugal, as elsewhere, remains uncertain. The country survey showed wide expectations that customers in travel and hospitality would use more online platforms to get information, make reservations and purchases, while contactless payments were likely to become established in food and beverage, although with less clarity if online menus and ordering would continue to be favoured by returning visitors. The meetings and events sectors were also expected to see more and more virtual or hybrid events. Across tourism, stakeholders felt a lot needed to be done to build deeper integration of the technology and a "digital business attitude".

With the country looking to open up to wider international travel to boost recovery from 2021 and beyond, uncertainties remained about the level of demand and speed of recovery, and how this would affect labour and skills demand. There was least confidence in the corporate travel sector and those areas of tourism and hospitality most associated with them. More generally it was not clear how visitor demand, behaviours and expectations will have changed, or be sustained, because of 'lockdown' experiences. Forward-looking businesses were expecting the need for adjustments to business models and where digitalisation is expected to be an intensifying part of that adaptation. Stakeholders widely agreed with the comments of one that:

> *"COVID was a wakeup call (for tourism businesses) to accelerate investments in contactless and other technologies which reduce risks associated with physical touchpoints, from digital check-in and keyless hotel entry, through to voice activated elevators and face recognition systems".*

Digitalisation, skills changes and post COVID recovery for tourism

Digitalisation is certainly not new to the tourism and travel economy of Portugal. Many of the larger firms have seen significant investment in integrating sales and marketing with online platforms linked to internet and mobile access. For these businesses, the value and potential of digitalisation has gone a lot deeper with early investment in transforming many aspects of customer interactions, along with the opportunities for big-data and analytics for tracking customer preferences and building ongoing relationships.

These developments have been accompanied by regulatory challenges and customer concerns about personal data security and protection. This has seen investments for digitalising businesses in cyber-security and privacy protection measures. To these could also be added evolving advanced technologies including virtual reality (VR) and augmented reality (AR), artificial intelligence (AI), the 'internet of things' (IoT), and to some aspects of workflow and task automation especially in, for example, back-office functions, and service robotics. The corporate travel and hospitality sector and those in meetings, incentives, conferences, and exhibitions (MICE) in Portugal see themselves as well advanced in the implementation of many of these technologies. However, digitalisation outside of larger enterprises remains fragmented and highly polarised. The most recent cross-sector review of digital maturity in Portugal's businesses with 10 or more employees (Statistics Portugal, 2020) showed a lagging hospitality sector (data were not separately classified for other parts of the tourism sector).

- Under a third of hospitality employees (30%) used computers with access to internet (43% across the economy)
- Under a half of those businesses had their own website (47%) compared to 61% across the whole economy
- Data analytics were used by only around one in 20 hospitality firms (5%), half the level for all businesses (10%).
- Fewer than one in 10 hospitality enterprises were training their wider workforce in digital skills, under a half the level for all Portugal businesses (20%).

The exclusion of micro enterprises (under 10 employees) from this data means that even this review may overstate the digital readiness of hospitality businesses in Portugal. The uneven uptake stems from the contrasts between the corporate sector, operating globally and in a highly competitive market where digitalisation is essential to sustaining or expanding market share, and smaller firms which dominate the sector and are characterised as established, often family run, with older owner-managers, and with little or no investment potential; many are likely to be risk adverse.

Many tourism firms may also be complacent about their use of the technology. A survey by the Portuguese Tourism Confederation of tourism businesses before the pandemic in 2020 showed that while most managers felt their businesses were either digitally mature (31%) or maturing (60%) this was not reflected in other evidence from this survey of their use, understanding or investment in a range of digital technologies. The same survey showed three in four tourism businesses in Portugal (75%) failed to invest in new digital systems (CTP, 2020).

In addition, stakeholders reported a boost in take up of contactless technologies during the pandemic, mostly among smaller firms. This has seen much of the retained workforce needing to acquire new skills not only in use of digital tools, but also in wider digital literacy and its interpretation in working with colleagues. Stakeholders reported that the speed of recent take up predominantly among smaller digitally

naive businesses and their traditional reliance on " … recruits being expected to learn on the job to fill any skills gaps" meant that many staff had been ill prepared for the skill changes.

As the sector starts to emerge from the effects of the pandemic, industry and industry associations were confident that tourism needed to build business models which enabled more and better digitally enhanced interactions with clients. This was seen as an almost pervasive need across tourism businesses, but stakeholders drew particular attention to the effects for destination management in looking to optimise use of intelligence and analytics to optimise marketing and enrich connectivity with global tourists. Travel agents, tour operators and all areas of hospitality were also picked out as needing to accommodate changing preferences and behaviours of tourists post pandemic.

At an operational level this would require staff directly in contact with visitors to have the necessary interactor skills from digital literacy, confidence and social skills to help customers (and colleagues) interact with the widening range of contactless technologies or digital aides. In management and back-office functions, it would need a range of *manuator* competences[3] including for virtual meetings, social media marketing, data analytics and data-based business intelligence for all aspects of e-commerce and running a business from revenue through to environment management of premises. All were seen to be underpinned by *conceptor* skills to realise the potential for digital technologies to increase visitor safety, personalise and optimise their experiences for visitors, while at the same time supporting wider goals of tourism sustainability.

If the broad direction of travel of digitalisation and associated skills changes is clear among stakeholders in Portugal, more detailed evidence of skills change and differences across a diverse sector is lacking. Perspectives on emerging (future) skills needs and digitalisation are even less clear although digitalisation skills challenges are generally thought to intensify and become more widespread. Anecdotal evidence from stakeholders appears to suggest that, to date, there has been little or no job substitution by incoming technologies including automation of functions; and what displacement may have occurred has (up to 2019) been compensated by a general increase in tourism labour demand. However, some in the industry saw software raising productivity in many hospitality administrative functions and with the likelihood that this would see amalgamation of some functions and the streamlining of others, leading to significant job losses. Any challenges presented to businesses from returning labour and skills shortages might exacerbate these effects as employers sought to minimise recruitment difficulties by enhancing digital substitution.

These are set to be the main workforce effects, although digitalisation will also see a rise in the use of specialist ICT skills and some 'new' job types emerging. Machine-based learning, task automation and robotics have considerable potential for job displacement. This is already evident in a few countries for low-skilled service workers, but the scale of early job displacement across the sector is likely to be constrained by certain cultural factors, including customer resistance in some regions.

Tourism businesses across Portugal are now looking to recovery post pandemic. In doing so they face two distinctive and inter-related pressures; the potential for incoming digital systems and tools to change the nature of their workforce and skills needs; and the effects of the pandemic on consumer preferences, behaviour, and demand. Effective investment in digitalisation and workforce skills is likely to be a feature for successfully tackling both.

In addressing this, COVID-19 may also have had an influence on the current and prospective tourism workforce. The loss of jobs and closure of businesses during the pandemic may have diminished the

---

[3] A broad distinction is made here between the *interactor* skills needed in customer contact and some customer facing back-office functions, *manuator* skills for other back office and many management functions, and for *conceptor* skills needed for the design and realisation of digital systems and tools. Depending on different business approaches to skills mixing, these different areas of competency could overlap.

confidence of both existing employees and new entrants in the employment and career potential of the sector. As one stakeholder observed:

> *"Tourism jobs in Portugal have had a problem with profile and esteem but job openings have always been there … (now) the pandemic has exposed the vulnerabilities of the sector and it's going to affect people's confidence about tourism work".*

This may add to long-standing concerns in Portugal, as elsewhere, about the competitiveness of the sector for younger new entrants. In an era of digitalisation this may be a concern to recruiters who will be placing a greater value of young, often digital 'natives', who could bring higher levels of digital literacy to jobs than many of the more mature recruits.

Tourism digitalisation and occupational skills effects

The skill changes reported from digitalisation in tourism appear to have been accommodated very largely within existing job and occupational structures in Portugal; this reflects wider international experience. The exceptions in Portugal seem to be among larger businesses and corporates where specialist skills have given rise to new occupations in areas such as cyber security, social media content production and management, data analytics and for some aspects of technology optimisation where it involved 'visitor' orientated software, systems programming, and maintenance roles. These new occupations have typically been limited to the corporate sector and needed in relatively small numbers. Elsewhere some of these skills needs, including social media content management and data analytics, have been combined as additional skills sets within with existing occupations.

More specialised occupations and skills needs such as for digital strategy development, technology development, and software engineering have, to date, typically been brought in to provide ad hoc inputs from consultancies or external suppliers. Typically, these have been drawn from specialist ICT or software consultancies, general business consultancies or sometimes from software and systems producers or distributors. These external contractors would have general business or SME experience, but few of these would have specific tourism experience.

Outside of management (considered below), there is limited other evidence on occupational skills effects from digitalisation, but a broad distinction seems to be emerging between customer-facing and other (back-office) occupations. One industry respondent cautioned that in hospitality, many customer-facing lower or mid skilled occupations in hospitality could disappear because of the scope to reduce operating costs from automation of those roles. This view was not widely supported and was not felt to reflect likely developments in food and beverage service where customer-facing occupations (table and counter service, sales, and ordering, etc) were likely to be retained due to customers retaining a preference for personal service. Outside of the fast-food sector, there was doubt that some recent accelerated introductions of digital menus and digital ordering might fall out favour with visitors as the sector moved on from the pandemic. Another industry contributor commented for customer-facing staff: "digitalisation in hospitality was concerned more with (operational) processes than (staff) skills".

For back-office and administrative occupations the situation may be rather different. Here, digitalisation impacts these occupations essentially in digitally based inter-actions with customers (payment, reservation system, meta-analysis of customer profiles, social media, and online marketing, etc.) and some back-office administrative functions where digital processes and software had the potential to integrate functions and to substantially improve productivity. Some saw this as streamlining administrative functions with the potential as these deepened across the sector for significant job losses. Even here the picture was not clear, with others from industry commenting that digitisation may see some back-office job reorganisation but also raised skills needs in, for example, social media and content management, data analytics and ICT-based revenue management. For smaller tourism businesses it was felt that changed 'administrative

occupational skills mixes might be met either through collaborative arrangements between clusters of local smaller firms or through professional service contracting in the same way that many have sub-contracted accountancy services.

Precise occupational effects of digitalisation were thought likely to differ greatly between different tourism and travel activities, smaller firms and larger, new entrants and established businesses (especially if family owned), and even geographically to reflect different capacities for local digital infrastructure and skills supply. Stakeholders widely felt the need for more and better evidence of these likely differences and how different choices in technology uptake raised different options for occupational skills mixes.

Challenges facing destinations and smaller businesses

Technology adoption was reported to be stronger in those parts of Portugal with well-developed digital infrastructures, especially for businesses in the North and Lisbon areas who were seen as likely to be more advanced in the development and implementation of 'SMART' tourism. Tourism businesses in larger urban areas (Lisbon, Porto, Aveiro, Braga, etc.) were also more likely to be positively influenced by networking and knowledge sharing from new and younger entrants who were often more digitally literate. Conversely it was seen by stakeholders to be often weaker in rural areas where there were a higher number of smaller tourism businesses, often long established, and commonly with older owners/managers who were more likely to be resistant to new technologies or with less capacity to invest and adopt.

In (some) rural areas businesses and their workforces were considered to be disadvantaged by weak or unreliable digital infrastructures including 5G roll out. Some industry stakeholders drew attention to what were called "black holes in the digital infrastructure". This meant the potential local workforce were likely to be less digitally literate than their urban counterparts, and it also constrained local business access to online training programmes and networks which might address some of those skills and knowledge gaps.

The challenges of building digital transformations in tourism in Portugal are largely those of engaging with, motivating, and enabling more SMEs, and the smaller businesses in particular, in digitalisation. Without this the polarisation noted earlier will remain in place and integration across the tourism value chain will be compromised. The stakeholder evidence was that the smaller businesses may be resistant to necessary change or lack the knowledge or investment capital to adjust to the opportunities, and invest in the changing skills needed by its workforce to make effective use of the technologies.

Tackling SME and especially micro business rigidities in digitalisation is especially important for tourism in Portugal where they are a vital and growing part of the tourism value chain. While SMEs across the economy generated strong growth in Portugal before the pandemic, this was especially strong in tourism and notably in accommodation and food services. SMEs in this sector generated a 61% increase in value added (2013-2017), well over the rate for all SMEs in Portugal (24%). In the same period, SMEs in accommodation and food service saw their employment rise by nearly a fifth (23 %) outstripping that for larger businesses and at nearly double the rate for all SMEs (13%). Micro businesses have been a particularly strong feature of these trends.

The evidence of why smaller tourism firms lag in digitalisation is anecdotal but, taken with other evidence (OECD, 2020), it is persuasive. Stakeholders characterised smaller tourism firms across Portugal as often long established, widely family run, with older owner-managers, often lacking in professional level education and with little (or no) awareness of digitalisation potential for their businesses. Those with some awareness commonly lack digital literacy and are seen as uncertain of where to seek guidance on engaging with the technology. Stakeholders also drew attention to the costs involved in digitalisation and for businesses operating with often narrow profitability margins, with little or no investment potential; many are likely to be risk averse:

"Without (accessible) public support or tax benefits it will be very hard for them (SMEs in tourism) to implement the necessary changes; most are very small and don't have financial capacity to invest in technology. The actual cost of many of the IT solutions available on the market are very expensive for most of them".

The situation is not homogenous, and it is dynamic. It was reported that smaller accommodation businesses across Portugal were more likely to have embraced what one stakeholder called "entry-level digitalisation" which commonly involved online sales and marketing, and where some were looking to build customer loyalty through social marketing communications with recent guests. Elsewhere, smaller firms in tourism and travel appear to have seen much lower levels of digital investment; many are seen to lack their own websites, with little use of online promotion, or ICT for sales, revenue, workforce management and other routine aspects of small firm operations and management.

Smaller firms in the food and beverage sector were thought to be especially slow adopters, although here there has been some reported and rapid uptake of online bookings, digital menus and ordering, and contactless payments by many such firms during the pandemic. On this evidence, even digitally resistant businesses will adopt suitable digital technologies where they see a clear business motivation or need to do so; and this may be done speedily. More needs to be understood about the late onset of contactless digitalisation in those businesses, how it has come about and its sustainability, but stakeholders were keen to see these prospective opportunities further exploited in any digital transformation plan for tourism in Portugal.

A final feature of tourism SMEs and digitalisation is the potential as the visitor economy emerges from the pandemic for new starts up to lead by example. Some stakeholders suggested that as visitor numbers rise, new start-ups may seek to fill existing or emerging gaps in the market. These are likely to be set up by younger and more digitally literate entrepreneurs, who might play an important role as innovators and technology-based leaders. Some felt these new entrants to tourism may have an important role to play as latent ambassadors for digitalisation, and accompanying workforce remodelling and skills development, and should be a special focus for support and promotion in any digital transformation initiatives.

3. Addressing digital skills gaps and shortages for tourism in Portugal

Skills gaps and shortages in perspective

The analysis of current and emerging skills gaps and shortages in tourism in Portugal is hampered by a lack of reliable and sufficiently detailed information on both demand and supply of skills and this is especially the case in the rapidly evolving digital world of work. In Europe, perhaps the most detailed information base on skills needs in tourism is from the Next Tourism Generation (NTG) Alliance. A recent analysis (Carlisle, Ivanov and Dijkmans, 2021) using the accumulated data from the eight countries involved (not including Portugal) suggests that the most important future digital skills for the sector are:

- Online marketing and communication skills.
- Social media skills.
- MS Office skills.
- Operating systems use skills.
- Skills to monitor online reviews.

However, the biggest future skills gaps are expected to be in AI and robotics skills, and AR and VR skill, but employers considered these (along with computer programming skills) the least important to their future operation, partly because there are currently few demanded.

More broadly, the OECD Skills Outlook (2019) examined how countries have performed in recent years in terms of skills, digital exposure, and skills related policy that would make the most of digital transformation. This cross-sector, country analysis, clearly identifies areas where Portugal needs to make progress when considered against some of the main indicators. For example, in providing the necessary skills to the next generation of labour market entrants it is considered to the in the 'medium' achievement category and this is also the case for teachers' preparation and training needs. However, the country is considered 'below average' for exposure in the use of ICT and in effective ICT integration in schools. Put together, it suggests there is some way to go for Portugal to effectively address the current and future digital skills needs in all sectors.

Current and emerging digital skills gaps and shortages

Digital skills gaps

An important starting point is to distinguish between *skills gaps* which are looked at here, and *skills shortages*, which are considered separately. Skills gaps reflect the deficiencies in the skills of those already in work; skills shortages occur where there are constraints affecting business in finding skilled replacement staff or recruiting to new posts and vacancies. As such, skills gaps concern the existing (and returning) workforce and can occur when employers fail to invest adequately in the development of their staff. In the

fast-changing digital world, it is relatively easy for employers to fail to keep the skills of their workers up to date and where an under-skilled workforce can lead to inefficiencies, reduced productivity and ultimately 'bottom line' effects on the business. Addressing skills gaps is consequently important for the viability of individual businesses and for the sector as a whole, particularly as it seeks to recover from the largest fall in demand for a generation.

The evidence from both the stakeholder survey and roundtable discussions showed an almost universal awareness that existing and latent digital skills gaps were widespread, but little detailed knowledge or information about the actual extent, distribution and nature of these. Nonetheless, according to these sources, the most significant workforce competence and knowledge gaps affecting the greater adoption of digitalisation resided in smaller business managers and their lack of understanding or awareness of the business case for digitalisation. In part this reflects the management composition of many smaller tourism businesses and where many were mature individuals, often working as family members in family run and owned businesses, and often long established and resistant to change.

These management skills gaps were not homogenous across smaller tourism firms; many small accommodation providers in Portugal were thought to have been relatively early digital adopters (pre-pandemic). This had widely helped them to align with platform-based sales and marketing and often to reduce costs of sales from direct online marketing and reservations from their own websites and social media promotion. In addition, managers of new entrant businesses and start-ups, often younger and digitally literate, were seen as often much more aware. Some stakeholders saw potential for these earlier adopters among smaller businesses to act locally as digital innovators and demonstrators for others.

Related to this weakness in managers was a perceived wider digital skills gap with employees who often lacked familiarity with basic digital tools and applications. Other common skills gaps related to web design, content management and maintenance, core operating systems and apps, and social media and digital marketing (including the use of new communications platforms). These skills gaps were thought to be particularly evident in digitalising smaller businesses because of their traditional reliance on the job training and where the lack of digitally fluent managers or other staff acted as a brake on workforce skills development. All of these skills gaps are consistent with the wider cross-sector studies (such as the NTG Alliance – see above), confirming that they are not sector-specific skills, but sought across many industries. Albeit to varying extents.

Digital skills shortages

Skills shortages can occur when the supply of those with the appropriate skills from the labour market (including those new joiners from the education and training sector) is inadequate. It can represent a current challenge for recruiting employers, but importantly it can also represent a future challenge when the supply of skills in two- or three-years' time is insufficient to meet the needs of the sector. Stakeholders recognised that in a fast-moving area such as digital technology, any digital transformation policy aimed at addressing skills shortages (and gaps) should also have a forward-looking component with a view to avoid not only current but also emerging future skills constraints.

Information on the current extent of skills shortages in the tourism sector in Portugal is also weak and adversely affected by the COVID-19 pandemic that has curtailed much of the recruitment activity of employers. As a result, the survey found employers not reporting significant digital skills shortages, but it was clear that when recruitment is restarted, some specialised skills constraints are likely to emerge. These include the sorts of (transferable) digital skills in demand across many other (non-tourism) sectors such as web design, social media marketing, data analytics, etc, again consistent with international studies on skills shortages (such as the NTG Alliance).. Less prominent currently but likely to become skills for concern for some employers were the specialist skills in VR, AR, and the Internet of Things, although vacancies for these skills are likely to be mainly in the corporate sector and at relatively low numbers, though some

international studies have indicated that demand for these specialised skills may increase in the future, though the extent of any incremental demand is uncertain.

In discussions with larger employers, it is evident that backroom functions are critical, and this is where most concern lies about current and future digital skills supply. However, the larger firms are likely to have fewer problems in attracting the digital skills they need in these functions through a combination of factors including an attractive corporate environment, a defined career structure with progression opportunities, and also because these firms are more likely to be able to adapt to (and better afford) a competitive remuneration package for such skills. This is unlikely to be the case for many smaller tourism businesses where there is a long legacy of constraints to employee recruitment and retention, with fewer (or no) professional human resource skills and often low profit margins with limited scope to enhance remuneration. It is likely that this is where most of the impact of emerging digital skills shortages lies, with the effects on smaller businesses highly likely to be more acute outside of larger urban areas.

This is a problem shared by other countries which offers the prospects of some potentially useful examples of how this has been tackled elsewhere. In France and Italy, for example, there are government backed schemes to bring smaller firms together (including encouraging amalgamations) to create the critical mass necessary to develop better HR and recruitment profiles. In Switzerland, for example, there are initiatives to assist small firms by increasing productivity, boosting skills and the competences of all the players, supporting structural change, and strengthening the tourism labour market in general and this includes advice to smaller businesses.

Emerging knowledge and skills needs for SME managers

Managers in tourism were suggested (section 2) to be among the most affected by digitalisation with widespread concern among stakeholders that digitalisation was held back by a lack of management knowledge of the opportunities and benefits of digitalisation, or the digital awareness or confidence to position, select and use digital systems and tools. This is despite the recent stimulus provided to digitalisation by, for example, contactless technologies emerging as a consequence of the pandemic, These challenges were centred on mostly established tourism SMEs and micro-businesses; in larger businesses knowledge gaps for managers were limited mainly to incoming technologies and where even corporates had difficulties in keeping up with the fast-moving software and other technological developments.

Management and leadership within smaller tourism businesses was seen as crucial to digital transformation across the sector, and addressing the polarisation between smaller and larger enterprises in digitalisation (section 2). This had two rather different dimensions. The first would be to address a pressing need for better knowledge and understanding among managers to inform, motivate and enable firms to respond to (suitable) digital transformation opportunities. This would address managers' lack of knowledge, or concerns, about the cost of digitalisation investment, how digital innovations will progress, returns and knock-on impacts on the business, the support available, and how to access suitable staff development opportunities, including for themselves.

Building on this, the second dimension would be to provide a more aspirational change in managers' digital perceptions to provide in-firm leadership for the continuing advancement of digitalisation as new opportunities emerged to exploit data analysis, new and more agile technologies, and for what one industry stakeholder referred to as"… greater management openness to digital transformation and knowledge".

This situation among tourism SMEs is not unique to Portugal; it appears to widely affect tourism businesses globally (WEF, 2017). It is of particular significance to Portugal with a large proportion of its tourism capacity in smaller businesses and where small firm managers would benefit from, in particular:

- An uplift on managers' knowledge and understanding of the digital transformations affecting the sector, the changing relationship with visitors and the importance in particular of new marketing approaches, social media connections, and data and intelligence to business development and survival.

- An appreciation of the digital technology options likely to be relevant to their businesses and to help companies understand what they need and help them evaluate the digital offer and its relevance and use to their businesses.

- An understanding of the skill implications for employees (in different functions) to ensure they can operate in a developing digital environment and how to upskill the workforce to fill gaps (reskilling diagnosis, options, access, and financing flexible provision).

- Better understanding the digital skills needs of managers in order to optimise their use in delivering key management functions (e.g., revenue and yield management, marketing, reservations via booking engines, etc.), anticipate emerging digital skills needs for their workforce, and motivate workforce adjustment.

Although there is a pressing current need for more small firm managers in tourism businesses in Portugal to develop these knowledge and skills sets, this is not seen as a 'one-off' activity to kick-start digital transformations. Continuous and sometimes rapid changes in digital technology opportunities calls for capabilities in the management of digital skills development for businesses over the business lifecycle. This requires informed foresight and increased agility from many more SME managers; skills that may be underdeveloped for many of them.

Stakeholders did not doubt the ambition of such a development and recognised the very considerable challenges in reaching and engaging many smaller firm owner-managers. Industry associations, local business networks, digital mentors and guides, and recognised exemplars showing the benefits were all seen as important in engagement; funding to reduce transition costs (for the technology and skills) and to reduce the risk to capita- constrained businesses, were thought to be essential to mobilise changes. Building the knowledge and skills needs of small business management in tourism also needed to reflect the different starting points of often diverse businesses.

Bringing about the knowledge and skills changes needed for managers presented presents some distinctive additional challenges. Managers in smaller tourism businesses are intensively engaged in the day-to-day running of their businesses and releasing themselves for sufficient time to full or part-time courses would be impossible for many. This called for short, perhaps modularised, intensive executive programmes delivered online or through locally flexible access. It also called for substantial subsidies to costs, although some stakeholders cautioned that wholly cost-free training might not be as valued by the sector.

Responses to digital skills gaps and shortages

Building wider digital capacity in the economy is a strategic priority for the government of Portugal with government keen to address the low ranking of Portugal in the Digital Economy and Society Index (DESI) for the quality of human capital and use of internet services[4]. By 2019 there were 18 different publicly funded programmes variously addressing digitalisation for citizens, companies and state apparatus; put in place across the economy. More recently, they were brought together and enhanced under the government's digital acceleration strategy (Box 1) which although not specific to tourism, has the potential for tourism business to engage with, or more generally profit from, the digitalisation investments.

---

[4] In contrast, Portugal was ranked at or above the EU-29 average for connectivity, integration of digitalisation and digitisation of public services.

Box 1. The Digital Acceleration Strategy in Portugal

The government strategy was developed to integrate a range of pre-existing digital capacity programmes from different Ministries and agencies and to further develop its capabilities to boost digitalisation across Portugal. The strategy was not sector specific but did accommodate some sector specific actions. The Digital Acceleration Strategy, launched as Digital Portugal in 2020, has six guiding principles and three delivery pillars.

1. **People and human capital** – with a focus on digitally focussed education; vocational training and reskilling including four new programmes: Líder Digital; Emprego digital; Jovem + Digital and Portugal Digital Academy as well as the tourism specific Upgrade programme.

2. **Companies** - with a focus on digital transformation of businesses implemented in three planned phases – awareness (via Experience 4.0); empowerment (via Co3so Digital; Coaching 4.0) and adopt (via 'Digital connection of SME on the supply chain' and 'Increase the digital activity of SMEs'. These add to a proposed 'e-residency programme', 'Technological Free Zones', 'Digital Innovation Hubs' (2012), and Coaching 4.0. All of these have a particular focus on SME transformation.

3. **State** - Digitalisation of public administration: via 'public service Cloud Strategy' and specific actions to digitalise 25 of the most used public services. In parallel, the strategy provides for simpler public procurement for ICT services.

The strategy has the ambition that all companies in Portugal are digitalised and none are left behind. Implementation is to be through 'Digital Transition Catalysts' for businesses and supported by a parallel connectivity and infrastructure strategy providing: the roll out of 5G; the *Ella Link* subsea cable linking Latin America *and Europe*; and the *Tem.Rede* mobile network identification facility.

Source: OECD Survey on Preparing the tourism workforce In Portugal for the digital future (2021)

A further important development has been the establishment (in 2019) of The National Tourism Training Commission for Portugal (Box 2). It provides a focus for cross-stakeholder dialogue and advice to Turismo de Portugal on skills and training development issues for the sector. At present its focus on digital skills is limited but developing, with a special interest already recognised in basic digital skills capacity in the sector.

The Tourism Innovation Centre for Portugal (NEST) was also established in 2019 to support the digital transformation of the sector in Portugal. NEST is a private non-profit association co-founded by Turismo de Portugal (and industry partners including, ANA Aeroportos de Portugal, Google and Microsoft) to act as a national focus for digital innovation and sector support (Box 3).

NEST has several capacity building projects underway and is a stakeholder member of the National Commission for Tourism Education where it has provided early briefings on tourism digital skills maturity, building on NEST partner evidence (Google and Microsoft). This evidence has now been shared with Portugal's Hotel and Tourism Schools. With the support of Turismo de Portugal, NEST has also put forward a proposal for an EU funded *digitalisation co-ordination hub* to provide diagnostic and transformation support to tourism businesses across Portugal. The hub anticipates a one-stop-shop *capacitation building* approach for the sector in Portugal, funded under the EU COSME programme. A funding decision has been deferred (from March 2021) and at the time of writing was expected shortly.

Box 2. The National Tourism Training Commission for Portugal

The National Tourism Training Commission (the Commission) was established in 2019 following a review of the Turismo de Portugal's national network of Hotel and Tourism Schools in Portugal and a modification in law of its status and role[5]. Following a preliminary meeting of stakeholders in December 2019 its early development was impeded by the pandemic but it met again in April 2021 and now provides high level advice for Turismo de Portugal and public sector bodies.

It is established as a multi-stakeholder body providing a national focus for dialogue and collaboration across the tourism sector in Portugal. Its membership involves four key ministries, companies and industry representative organisations, academia, training institutions, central, regional and local administration, trade unions and other relevant sector stakeholders on skills development and training issues across the sector. More recently, the National Commission has also established provisions for a network of regional groups across the country to review and reflect sub-national issues.

The remit of the National Commission is broad with a forward looking focus to contribute to the definition of training strategies for the tourism sector through the creation of a space for co-operation, articulation and collaboration on five strategic objectives:

- Conducting diagnoses of training needs and promoting corresponding articulation to needs
- Promoting the articulation of the training offer between training agents
- Promoting the approach of Hotel and Tourism Schools to companies in the sector
- Conducting and promoting innovation and research for continuous improvement of training.

Within this forward-looking agenda, the Commission set up three preliminary working groups: Study and research; Valorisation of professions; and Innovation in education and training approaches. Additionally, it has already identified the need for better understanding basic digital skills in tourism functions and its ambition in the area of digitalisation are likely to extend as the Commission further develops its agenda.

Source: Documentary synthesis from Turismo de Portugal (accessed June 2021)

Two skills centred initiatives were introduced by Turismo de Portugal in 2020, with both playing an important role to enhance the digital skills of tourism professionals as the sector seeks to recover from the COVID-19 pandemic:

- **Upgrade** (2020-2021) is aimed at helping tourism professionals and other employees in small and very small companies to acquire knowledge and develop new skills to prepare for a digital future. It offers a 'Digital Upgrade' course (116 hours) of five modules progressing from basic digital literacy skills to more advanced requirements for digital marketing. An additional programme on 'Sustainability Upgrade' is also provided (80 hours) and the two courses can be carried out simultaneously, in parallel or partially. Financial support is available to participants from eligible companies through the Institute of Employment and Professional Training (IEFP).

- **BEST** started in April 2020 and provides Business Education for Smart Tourism (BEST). Its focus is on management education to support post-COVID recovery by promoting the continuity of business responses to the training needs of the workforce. Training is provided free online for registered participants.

---

[5] The law changing the regime of the Hotel and Tourism Schools (*Decreto-Lei n.º 110/2019*) contained a specific article (11-B) which formally constituted the Commission with its membership and terms of reference.

Box 3. The Tourism Innovation Center Portugal (NEST)

NEST is a public-private sector collaboration which brings together eight founding partners: Turismo de Portugal, ANA Airports, Brisa Via Verde, Google, Microsoft, Millennium BCP, NOS and BPI. It aims to act as a leading edge and national focus for digital and related innovations in Portugal's tourism sector, working through the development of new business ideas, innovation project development, technology experimentation and demonstration, and the empowerment of SMEs within the digital economy.

NEST's activities continue to develop but will go beyond providing a tourism-centred innovation focus (Center) to provide active business support in digitalisation, identifying new professional and skills profiles to support digital transformation and knowledge transfer to companies.

Although a relatively new development, its governance and operating structures are in place and partner collaboration strategies are evolving focussed on three pillars of development:

- **An innovation culture** – where tourism businesses engage with the technology to: provide seamless visitor experiences; supporting sustainability of the sector and its activities across the value chain; and harness big data to build an enhanced tourism offer and competitiveness.
- **Digital knowledge** – providing a 'futures' insight and working with businesses to tackle transformation and related challenges and supported by the development and mobilisation of a range of resources and access to events.
- **Innovation Projects** – developed with businesses and others.

An early action has been planning and prospective development of a *Future Lab Hotel* as an innovation and demonstration centre in collaboration with the School of Hotel and Hospitality of Setubal.

Source: NEST documentary evidence (accessed May 2021).

In April 2021, the tourism centred Co-lab for Knowledge to Innovate Professions in Tourism (KIPT) was established to provide a cross-university, collaborative platform to support policy makers, the tourism industry and other stakeholders through research and knowledge exchange on employment and professional development. Neither has a specific focus on digitalisation or digital skills but both are likely parts of the transformation responses.

In directly addressing the skills gaps and shortages in the tourism sector, the education and training system and the quality of its responsiveness is key to solving, or at the very least ameliorating, many of the challenges facing businesses. For skills gaps, the emphasis is inherently on the current workforce, and which calls for intensive, skills-based, short-term 'bite sized' training to reskill or update those in employment, or those who may return to tourism employment in the near future. This is likely to involve flexible access for employees typically working irregular working hours, and through a combination of on and off the job learning.

Combining on and off the job training present challenges for the sector. Traditionally, skills training in smaller tourism businesses is through progressive and on the job learning; although a low-cost solution well suited to the working hours of frontline staff may not be viable for digital skills acquisition since the managers and established workforce typically lack the digital fluency needed to transfer the necessary skills to others. At the same time, stakeholder feedback suggested that flexible, coordinated, off-the-job provision for existing employees is not yet well developed in Portugal, or is sufficiently accessible to smaller tourism businesses. In particular, such training also lacks appropriate financing mechanisms that would be suitable for such businesses. Most stakeholders saw the solution as developing modularised, small unit-

based flexible provision and ideally through easy access to on-line skills-based courses at low (or no) cost to smaller employers.

A further constraint to workforce development of digital skills is the tourism workforce is characterised by a large proportion of workers on casual or other insecure work contracts (such as self-employed, temporary and agency contracts, and seasonal work) which makes it difficult to retain skills and encourage employers to invest in workers who may stay with them for only a short time. COVID-19 is also likely to have meant that many workers previously in the tourism sector have left for jobs in other sectors and are unlikely to return, and these will include substantial numbers with transferable digital skills.

Education and training providers encompass a remarkably wide range of delivery bodies and funding pathways. This combines higher education provision in different disciplines numbers around more than 90 including universities with tourism or travel related courses and funded predominantly through the Ministry of Science and higher Education; professional education (at level IV and V) through Portugal's highly regarded network of Hotel and Tourism Schools and funded (via Turismo de Portugal) by the Ministry of Economy and Digital Transition, vocation and IEFP courses (typically at up to level IV) through the Ministry of Labour and Social Security and also some secondary schools provision (up to level IV) funded through the Ministry of Education. These different provider and funding focuses involve different provision mixes, levels, accreditation, and quality assurance processes. The different options are seen to be confusing for many tourism businesses without specialist human resource knowledge.

Consequently what has evolved is a diverse entry level and some continuing 'executive' education provision variously related to the perceived needs of the sector. Some of this provision is better regarded by stakeholders, and notably that of the network of Hotel and Tourism Schools, than others. It does offer potential for localised provision which is a valued response to the spread of skills needs throughout the country, and the local labour market focus for much of the labour supply who are likely to prefer to live, work and train locally. However, there are many parts of the country reported to be less well served than others leaving access gaps.

For the most part, however, the professional and vocational education geared to tourism and hospitality also has limited content on the digital skills needs of students and likely demands on them of scoping, using, and integrating digital systems and tools in the environments in which they well be seeking employment. In these curricula the quality of teachers and teaching, were sometimes seen as out-dated and slow to respond to changing needs. Higher education providers recognised the challenges to their responsiveness on digitalisation emanating from a lack of clear market signals on often rapidly changing needs, as well as a regulatory process for university provision in Portugal which held back their responsiveness on curricula changes.

Stakeholder feedback also raised the issue of who funds continuing education, and in particular reskilling or upskilling training. This is quite central to the likely transformation challenges facing smaller businesses. Feedback suggested that funding for workforce skills training was insufficient and lacked clear funding mechanisms, a situation not helped by a fragmented set of initiatives that appeared to lack cohesion. Where funding pathways are unclear, smaller businesses often lack either the knowledge, time or capability to access or make best use of them. It can also often be a challenge to persuade or support employers to invest in their skills when many have other priorities, a situation that is likely to be exacerbated as businesses seek to emerge from the COVID-19 crisis.

For digital skills shortages, the problem is more complex and has both short and long-term perspectives. In the short-term the ability of the labour market to deliver the skills needed by the sector will depend on several factors, some of which are likely to be beyond the control of specialised education and training providers in tourism. Because many of the critical digital skills are not sector specific (e.g., as backroom functions such as web design and maintenance, social media marketing, finance, etc.) tourism businesses will need to compete with other sectors for the available skills. Those education institutions such as universities offering specialist elements for the tourism sector will produce a supply of skills more attuned

to the needs of the sector, but this may not necessarily guarantee that those with these skills choose to work in the sector. Many 'specialist' graduates may opt to take those skills to other and more competitive recruiters elsewhere in the economy.

Evidence suggests there are several issues to consider when examining difficulties of skills supply. These include concerns that the education curricula are not always consistent with the changing skills needs of industry and in particular digital skills. This can be only partly attributed to the real difficulties in keeping up with the pace of change in digitalisation, but this is not helped by the educational institutions themselves who need to keep in close contact with employers to understand their needs, and to ensure that teaching staff receive the opportunities for their own professional development.

The long-term scenario requires a different approach. Here the future supply of the digital skills needed by the tourism sector will largely depend on the education and training providers having access to detailed information of future needs and the ability to adequately respond to changing needs (including curriculum development). Currently there appears to be some variation in the ways in which universities collaborate with industry, with some having close associations, while others are more self-contained.

Stakeholders called for a consensus approach among all education and training providers and related bodies (including the hotel and tourism schools, universities, polytechnic institutes, and trade associations) to co-develop appropriate levels of digital training not just for future supply, but in particular for existing workers. This collaboration is anticipated to include other agencies with a contribution to make in identifying future skills needs, such as a sector skills body and the larger employers. The development of a skills foresight model (which could be based on various formats such as the methodologies of CEDEFOP and the NTG Alliance) would be a significant step forward in giving education and training providers, and those making the decision to choose a course (particularly young people and their advisers) the necessary information to make the right choices.

Transformation lessons from other countries

Several policy lessons from countries concerning the digital transformation of the tourism sector were outlined in the OECD report on Preparing the Tourism Workforce for the Digital Future (2021). Attention is drawn here to country actions in three areas likely to be particularly relevant to the digital skills transformation of tourism in Portugal.

Effective transformation support for building digital capacity needs sound intelligence on current skills gaps and shortages, and prospective needs. One country which has started to build a solid foundation for skills intelligence on digitalisation and associated needs is Germany, where the government, working with stakeholders, has established the Federal Competence Centre for Tourism (Box 4).

In efforts to build digital capacity, countries often face the challenge of demonstrating the value of digitalisation to SMEs and engaging them in opportunities to develop digital skills. Three countries with some success in these areas were Iceland, Japan and Switzerland (Box 5).

Preparing the Tourism Workforce for the Digital Future (OECD, 2021), showed that nearly a half of the 33 countries supplying evidence had yet to put in place digitalisation support that could be accessed by tourism firms. Of those that had, some found that self-help toolkits could provide for cost-effective awareness raising and diagnosis. Two initiatives of particular note provide toolkits focussed on tourism SMEs (Box 6).

The different institutional arrangements and systems in Portugal may mean that these, or other, actions are not directly transferable, but they do demonstrate how some of the practical challenges can be addressed by carefully constructed policy actions. One initiative which is likely to be more directly transferable is the detailed work on digital skills needs in tourism from the Next Tourism Generation (NTG)

Alliance (see Box 7). Portugal was not one of the eight partner countries, but there is much to learn from this European Commission funded programme by harnessing the NTG's 'skills matrix' approach to diagnosing needs, and forthcoming *Collaborative Governance Framework,* and cross-EU 'Skills Response Strategy'.

Box 4. Building intelligence in tourism digitalisation and skills needs in Germany

The Federal Competence Centre for Tourism was established in 2017 as a focus for collecting and disseminating information on skills in the tourism sector. It is funded by the Federal Ministry of Economics and Energy and has a small permanent staff and an advisory board of currently 17 stakeholders bringing together independent skills expertise, key agencies and employer representatives. It has a particular focus on the situation and needs of smaller businesses in the sector (the '*mittelstand'*) for: Internationalisation; Digitalisation; and Support for regions with tourism growth potential. Its brief is to collect, analyse and disseminate skills and associated intelligence, sharing information through a programme of workshops and an annual conference. Information is collected by drawing on other studies and conducting its own regular employer online panel surveys. A recent focus for the panel surveys has been the level of digitalisation with the first quarter 2020 survey looking at uptake and the most urgent needs for SMEs to catch up with the best in the sector. This was followed in February 2021 with a further panel survey to review key obstacles to securing the full benefits from digitalisation, including an assessment of the broadband coverage of sufficient speed and quality, financial support, uniform data standards, and employee qualifications as a demonstrator of competence in the required digital skills.

Source: Federal Competence Centre for Tourism, Germany - https://www.kompetenzzentrum-tourismus.de/

Box 5. Engaging smaller businesses in digital skills development

Small firm development clusters in Iceland: Tourism policy developments in Iceland are now centred on the longer-term vision for tourism in 'Leading in Sustainable Development: Icelandic Tourism to 2030' with a number of complementary actions to support digitalisation. With very small businesses dominating the structure of Icelandic tourism, engaging with these enterprises has been a particular focus with actions co-ordinated through the Tourism Skills Centre (established in 2017), the Ministry of Industries and Innovation and the Iceland Tourism Board. An early approach to engaging small tourism businesses on localised skills training including for digitalisation has been forming small networks of enterprises as clusters of collaboration, bridging a recognised gap between smaller tourism enterprises and the education and training sector. The clusters were involved in a sequenced programme of locally tailored activities to raise awareness, assess specific enterprise needs (diagnosis) and dovetail with developing (and supporting) individual training plans for businesses. The cluster activities faced early problems of reaching smaller tourism firms and subsequent drop-out rate before a (funded) training plan could be taken forward. A revised cluster initiative is now in place as *Stronger Together* which provides for more early pay off for providers and moving away from highly localised clusters to (sub) regional clusters to overcome early evidence that small businesses were reluctant to share their staff training needs with other local firms who were often seen as competitors.

Promoting Kyoto's IT Literacy Initiative for SMEs (Japan): In March 2020, the Kyoto City Tourism Association launched an initiative to boost digitalisation among member enterprises. The Association is the DMO for the city and its *Digital Utilisation Support Package* aimed to build a digital eco-system among members, boosting collaboration and co-marketing through the use of complimentary digital systems. Recognising that low levels of IT literacy among smaller enterprises would be a barrier to take up, the scheme introduced courses to boost IT literacy among member SMEs with online training and online self-help digital communities.To promote the scheme and encourage take up, an online consultation desk was set up by the Association as the front end of the initiative. Supported by web-based materials, the aim was to raise awareness, provide guidance about the scheme, and information on how members could access support. To reach those enterprises with low levels of digital literacy. the Association added more traditional, and pro-active approaches to raise profile among harder to reach businesses. This included the distribution of printed leaflets to members, a telephone help line, faxed 'support' information, and direct visits to businesses likely to benefit. These 'analogue' methods saw rising take up of the scheme and that in turn saw 'word of mouth' spread interest and confidence to access the scheme among members.

Discover Swiss: The *Discover Swiss* initiative takes a different approach to the digitalisation of smaller tourism enterprises in Switzerland. The initiative has established a backend-platform for tourism to make the digital world accessible to all players through a co-operative arrangement that allows information to be exchanged and accessible to each partner, and to other users (especially tourists) making data access faster and more comprehensive. It aims to draw in hesitant smaller businesses by demonstrating the value of digitalisation through a free trial period before firms commit to membership. It essentially brings together a wide range of tourism players at national and regional level, with technology firms, to provide access to a lower costs and viable alternative to the dominant international platforms for seamless marketing and bookings, and transport to tourist venues. Its model is for subscriber member organisations accessing training via the platform. The Swiss federal government will co-fund a successful membership-based platform. Early successes in engaging with smaller businesses have seen the initiative extended and a separate not for profit company established, and with extended capacity planned through a core team of trainers for the platform.

Box 6. Self-help toolkits to support digital development in tourism SMEs

Digital Marketing Toolkit in the United Kingdom: As parts of a wider range of self-help resources in its *Business Advice Hub*, Visit England has developed a Digital Marketing Toolkit. This is focussed on helping smaller tourism businesses make the most of online marketing opportunities. The toolkit offers an agile, modular approach to the self-development of digital business capacity in this area and includes separate sections on websites, content management and CM systems, data analytics and how to integrate in businesses, using social media and harnessing digital channels including OTAs. The toolkit provides a readily accessible (through Visit England's corporate web site) with real-time insights through case studies of developing digital marketing. To this is added explanatory content and diagnostic 'state of play' checklists with links to additional resources and (cross-sector) training suppliers. Aimed at digital starters, the toolkit is also a front-end to helping tourism businesses engage with Visit England's Tourism Exchange Great Britain (TXGB) digital platform to help connect digitalising SMEs to international distributors (OECD, 2020).

The Tourism Digital Toolbox of the Nordic Council: This is a cross-country initiative currently involving the Faroe Islands, Finland, Greenland, and Iceland. It is a priority action developed within the 'Digital Tourism in the Nordics' initiative realised and funded through the Nordic Council of Ministers. It is at advanced stages of developing the Digital Toolbox for tourism businesses based on an online-accessed platform for networking and sharing experiences of digitalisation, and e-learning materials across the Nordic countries. As the platform has been developing, and trialled, it has recognised the value of peer-to-peer knowledge exchange being built in; future developments will also build in current and widening success case studies of digitalisation in smaller businesses. Content draws on multiple stakeholders and is curated to ensure quality and relevance. As the platforms develops it is hoped the platform will also be accessible to tourism businesses in Sweden, Norway and Denmark (OECD, 2021).

Box 7. Next Tourism Generation (NTG) Alliance

Building on previous work by the European Commission and sectoral partners to address skills gaps in sectors, the NTG Alliance is one of the Sector Skills Alliances set up as part of the Blueprint for Sectoral Cooperation on Skills. Established in 2018, the NTG Alliance is a European partnership for improving collaboration between education and industry and the first pan-European alliance attempting to address skills gaps in the tourism sector. At the core of the alliance are 14 partners from education and industry from 8 European countries (Bulgaria, Germany, Hungary, Ireland, Italy, Netherlands, Spain, United Kingdom). The Alliance aims to provide employees, employers, entrepreneurs, teachers, trainers, and students with a set of core NTG modules in digital, green, and social skills. Its objectives are to;

- Create a scalable cooperation model at regional, national and European level;
- Provide a detailed assessment of the current and anticipated skills shortages, gaps, and mismatches in the sector;
- Develop a common methodology for assessing the current situation, anticipating future needs, and monitoring progress to respond to skills gaps;
- Provide skills instruments and tools to respond to future skills needs, with adaption of the tools, best practices, policies and guidelines to specific (sub-sector) contexts;
- Identify, describe and indicate priorities for the review or establishment of new qualifications, and to improve of the image and attractiveness of the tourism career pathways.

The NTG work has been informed by a cross-country survey and wide consultation which has shown that addressing tourism skills needs requires collaboration across education, training, government and industry. Its research has looked at current and prospective (to 2030) digital (and green and social) skills needs, contrasts across different tourism sub-sectors, and also the barriers to addressing skills needs including weaknesses in strategic coordination at EU and national level. Tackling these barriers requires action to narrow the gap between key stakeholders through active collaboration, and where good governance is critical to success. To date the NTG has produced a Skills Assessment Methodology, Skills Matrix and accompanying self-assessment 'Skills Lab', a Skills Toolkit and a Quality (Assurance) Skills Standards Framework. NTGs next step will focus on a Collaborative Governance Framework, to strategically address future skills needs, using input from government, industry and education. It will conclude with a 'Skills Response Strategy' for the whole sector in Europe which is anticipated shortly.

Source: Synthesis of NTG Alliance information https://nexttourismgeneration.eu/

Recommendations to support a digital skills transformation

The challenges facing Portugal in transforming the digital skills landscape in tourism are significant and the available evidence suggests that foremost among these are:

- Limited information on the supply and demand for digital skills in tourism now and in the future makes it more difficult for policy to respond effectively.
- The dominance of small businesses that can be resistant to change and lack the investment resources to make it happen.
- Current incentives for employers to develop the digital skills of their workforce are perceived as inadequate and sometimes hard to access.
- Current education and training provision can be unresponsive to the changes needed to bring courses into line with what industry needs.
- A large proportion of workers on precarious job contracts contributes to a high turnover of staff with consequence for investment decisions in training.
- The overall image of the tourism sector as an employment option is often not as good as it could be and in comparison, to other sectors.
- Many of the professional digital skills needed by the tourism sector highly transferable and are also in demand by other sectors making it a highly competitive labour market.
- COVID-19 has highlighted some of the challenges with many staff leaving the sector in search of work, many of who are unlikely to return, alongside a growth in demand from the push for more digitalisation.

To meet these challenges an appropriately resourced *Digital Capacity Building Plan* is needed whose actions cut across Portugal's diverse tourism sector. The need for such a focus was widely supported by the stakeholder discussions that informed this case study analysis. The digital transformation plan would need a clear and coherent focus centred on four separate but inter-related development pillars (Box 8):

Several recommendations are put forward here to provide a framework for the development and eventual roll-out of a digital transformation plan, and the following section outlines policy recommendations for effective governance of the implementation process. Efforts to develop and implement a digital transformation plan should centre on:

Box 8. Focus of Digital Capacity Building Plan for tourism in Portugal

- **Pillar 1:** Proactively tackling low management awareness of the opportunities and benefits of digitalisation of tourism businesses and barriers to better informed business leadership of digital uptake in Portugal
- **Pillar 2:** Providing digital leadership for tourism and directly enabling 'new' take up and effective utilisation of digital systems and tools and their integration in businesses through sector and business specific technical advice, guidance and financial support for investments in appropriate digital systems and tools
- **Pillar 3:** Better understanding and providing for responsive and agile workforce development skills and work re-organisation support with a priority focus on upskilling and reskilling of current employees and those returning as post pandemic visitor numbers and demand rise.
- **Pillar 4:** Monitoring for new digitalisation opportunities, knowledge and skills implications for all tourism businesses and education and training providers, and supporting knowledge exchange on technology and skills foresight to build continuing digital reliance.

- *Integrating an overarching Digital Capacity Building Plan for tourism into relevant government action plans and strategies*, including the Action Plan for the Digital Transition of Portugal (Digital Portugal), the Tourism Strategy 2027, Reactivate Tourism Plan | Build the future, and also any wider post-COVID-19 sector recovery actions. Within this integrated approach, the distinctive priorities for the transformation plan should be focussed on four development pillars: i) tackling low management awareness; ii) providing digital leadership to enable new take up and effective utilisation; iii) providing across occupations for a digitally skilled and responsive existing workforce; iv) providing for a systematic forward look at emerging changes and needs.

- *Combining a fast start and evidence-based direction and priorities to shape digital transformation actions* that take account of different starting points for tourism enterprises their maturity, functions, job and skills mixes and infrastructural circumstances. This will need to blend the need for new or intensified technology application alongside building workforce skills development. Within this, the early priorities for the transformation delivery should be: i) micro enterprises and independently owned SMEs operating in the tourism and hospitality sector with low (or no) diagnosed levels of digital maturity; ii) upskilling and reskilling of existing employees and those returning to smaller tourism enterprises after redundancy or job loss during the pandemic.

- *Co-developing a cross-sector digitalisation communication plan* to raise and support key stakeholder capability to act as informed agents of digitalisation, particularly among smaller tourism businesses. The communication plan would be led by Turismo de Portugal working closely with Industry Associations representing the tourism sector, appropriate professional bodies, and trade unions, all of whom will play an active delivery role as change agents. Enhancing the capability of these communications partners will also need a fully funded programme to raise their understanding and aspiration for digitalisation in tourism, business opportunities and integration needs, and transformation challenges facing industry and its workforce. This is urgently needed if these Associations are to be informed collaborators in supporting the communication plan as active agents of change, promoting and guiding digitalisation decisions among smaller businesses in particular.

- *Establishing transformation intelligence and implementation capability* to respond in parallel to current skills gaps and shortages by harnessing technology and skills foresight to respond proactively to emerging sector needs. Intelligence needs to shape and help review the delivery of the digital capacity building plan, and be channelled to businesses, education and training providers, and those mainly young people (and their advisers) making learning choices. To provide a starting point, an urgent and systematic evidence-based review of current digital skills needs in different tourism sub-sectors and occupations is needed which builds on but goes much deeper than the analysis in this case study report with consideration given to harnessing the Next Tourism Generation (NTG) Alliance skills diagnostic matrix framework.

  The review of current digital skills needs will need to apply an appropriate intra-sector enterprise (sample) survey to assess levels, distribution and causes of current digitalisation skills needs (and gaps) in the existing (and returning) workforce and prospects for skill shortages identified from supply related vacancy shortfalls. The survey will also provide a baseline for evaluating (subsequent) transformation successes (and gaps in reach). To this should be added a continuing review of emerging (future) skills needs and capability gaps through a recurrent skills foresight assessment linked to a periodic technology foresight assessment. Consideration might also be given to the potential for Industry Associations in particular, harnessing this evidence for knowledge exchange to the sector and to disseminate 'forward' market signals on needs.

- *Putting in place the necessary structures and instruments* to provide for appropriate transformation resources and accessible financing mechanism to 2027 to support the Digital Capacity Building Plan. This is likely to require new legal instruments for the Commission or for

Turismo de Portugal to put this in place. Consideration should be given to harnessing resources through the next *Community Support Framework* 2021-2027. If funds are to be allocated through existing programmes (e.g. Digital Portugal), these should be ring-fenced and managed through Turismo de Portugal on behalf of funding agencies to provide a distinctive budget for tourism businesses and their workforce. Further consideration should be given in the delivery of the plan to appropriately tailored aspects of co-funding, especially for management and staff training to avoid the risk of perceptions of low credibility of 'free' training.

- **Establishing a dynamic and stratified transformation support programme** to inform and engage effectively with eligible smaller tourism businesses and incorporating: i) Layer 1: developing sub-regional clusters of eligible enterprises based on DMO or other local body-led groupings of smaller businesses to provide a sequenced delivery mechanisms for initial 'group' digitalisation awareness raising and to recruit or signpost those business to available transformation support; ii) Layer 2: Individual business diagnostic activity through self-help (toolkits) and/or guided diagnosis from transformation brokers linked to network of innovation support centres co-ordinated by a 'transformation hub' organised by NEST[6] to ensure consistency and quality of support; iii) Layer 3: Development of establishment specific transformation plans, implementation support and workforce development.

  Layers 1, 2 and staff training in layer 3 should be fully funded within the digital transformation plan, with consideration given to grant or loan-based co-funding of digital systems procurement and implementation. To encourage and sustain business engagement, a benchmark standard or award for level 3 completers should be established, with the standard reflecting the different intensity and integration opportunities for tourism businesses of different sizes.

- **Developing an appropriate modular workforce development provision** as an agile foundation for transformation support. Constituent packages and accessible modes of provision would need to be put in place ahead of the support programme to respond to both *generic* digitalisation development needs and with appropriate 'customised' provision for individual businesses as identified in layers 2 and 3 (above). Packages would focus on diverse occupational levels in the workforce affected by new or changing digital skills mixes and would need to be intensive, flexible and in a discreet modular format capable of accommodating individuals of different (and often low) levels of educational attainment or digital literacy. It is proposed this is built on micro-credentials and from which layer 2 diagnosis can identify appropriate generic modules for skills transformation in individual businesses reflecting their needs and circumstances. The format and provision for the upgrading programme should draw on the current review underway of the *Upgrade* initiative, with appropriate use of flexible, low or no-cost online delivery.

- **Conducting a review of curricula, content and teaching skills gaps** relating to tourism digitalisation in current professional education provision in Portugal. This would make proposals in conjunction with ANQEP and the Ministry for Higher Education on changes to curricula (and its delivery) for initial professional and continuing education relating to future tourism entrants, and the mechanisms through which providers are able to continue to adapt content and access to changing tourism sector needs, including timely knowledge exchange on changing skills and knowledge needs.

A final consideration, although beyond the brief of this case study is the need for actions within a *Digital Capacity Building Plan* to be conducted in parallel with national actions to address current digital infrastructure gaps or what stakeholders referred to as "digital black holes" in Portugal. Without this, the aspirations and potential for business to adapt, and the scope to use online training to build digital skills, will be substantially compromised in many tourism intensive localities of Portugal.

---

[6] This anticipates that NEST is successful in its application to provide a co-ordinating hub for *digital capacitation building* across tourism enterprises in Portugal under the EU COSME programme.

4. Enhancing governance to support digital skills transformation of the tourism workforce

Towards a strategic transformation response

Tourism and travel are of great importance to the economy of Portugal, its businesses, and citizens but after a decade of continuous growth, the onset and duration of the pandemic has caused an acute crisis for the industry. Increased digitalisation of the sector is widely seen as an agent for recovery and also for building greater resilience. This represents a challenge especially to the small businesses which predominate in tourism in Portugal, notably in rural and some coastal areas where the digital infrastructure and digital skills base may be comparatively weak

The OECD Tourism Committee's recent report on Preparing the Tourism Workforce for the Digital Future (OECD, 2021) provides an important starting point for tackling digitalisation challenges in OECD member and partner countries. The value of this has been intensified by conducting an in-depth analysis and case study on Preparing the Tourism Workforce in Portugal for the Digital Future, informed by a stakeholder survey of issues and challenges and subsequent roundtable discussions. Put together these have informed a series of recommendations for an operational focus and priorities for change (Section 3). This section will now examine the issue of governance, providing a selection recommendations to facilitate the implementation of the recommendations to address digital skills transformation challenges.

Governance in perspective

There is a wide aspiration among stakeholders in Portugal for a strategic and co-ordinated response to supporting digital transformation. This calls for an ambitious and effective National Digital Capacity Building Plan, and putting in place appropriate *governance* mechanisms which can engage this broad sector, shape, deliver, evaluate and further develop the transformation priorities set out in the previous section. A starting point is an understanding of the lessons on current strengths and weaknesses likely to affect the governance of transformation. The strengths identified from the case study include:

- The natural focus for transformation provided by Turismo de Portugal with links to government, its long-established credibility with the sector, working relationships with industry associations, and as a development focus for the network of well-regarded hotel and tourism schools across Portugal. It's working relationships with higher education institutions outside tourism could be further developed.

- The pre-pandemic formation of the National Tourism Training Commission is also seen as a potential strength as a possible high-level focus for partnership and stakeholder engagement,

although it lacks a particular focus for digitalisation skills and is not sufficiently invested in the wider area of digitalisation innovation.

- A legacy in Portugal of public-private collaborations in tourism development, most recently in NEST drawing together public bodies, financial institutions, the industry and international software companies as a tourism innovation focus. As yet, however, its necessary focus on "firefighting issues" during the period of the pandemic means NEST does not yet have a profile with much of the tourism industry.

- A well-developed regional tourism infrastructure through the DMOs, which have a profile and wide recognition across the industry and notably with smaller businesses.

In addition, a start has already been made on digitalisation skills development through the Upgrade and BEST programmes. A review of Upgrade currently underway is set to provide early lessons of its content, effectiveness and on improvement issues including, for example, how to better engage smaller tourism businesses.

A widely recognised challenge linked to current arrangements is the division of public policy interests at national level, which is often seen to hold back the development of an integrated policy response to digital transformation in this sector. Added to this, there are a large number of stakeholder organisations and representative bodies who could potentially be involved in shaping and steering a digital transformation plan, especially among industry associations and individual higher education providers. With stakeholders calling for an inclusive, holistic response, continued fragmentation of key players is likely to provide a particular challenge for governance of transformation and for co-ordinated action. Other weaknesses included:

- A lack of an adequate current funding mechanism for digital skills training and the likelihood that if this was not possible by executive order (of funding Ministries) such mechanisms would need new legal instruments to be agreed which would substantially delay any transformation response.

- Industry associations were recognised as key players but, for the most part, as member-led bodies few are yet seen as focussed on the digitalisation agenda or for association issues of workforce preparation.

- Content in higher education provision for tourism geared to digitalisation is seen as either weakly developed for most providers or not up to date; some teachers in particular are seen to lack an understanding of the digitalisation implications for knowledge and skills development for themselves and their students.

- Vocational education and training available to tourism businesses lacks flexibility and with some notable exceptions, capacity for online training and especially for continuing education of the existing tourism workforce.

The evident fragmentation of policy responses, multiplicity of stakeholder agencies and interests and inconsistent alignment of technology uptake with skills adjustments provided a poor starting point for the unified and collaborative governance arrangement sought by stakeholders to drive forward workforce preparation for digital transformation in tourism. Against this background there was wide stakeholder enthusiasm for a governance arrangement for transformation that could address these weaknesses, and build on some of the potential strengths. This anticipated a public-private sector, cross-stakeholder collaboration that would engage all key stakeholders and especially the four Ministries with active policy interests. It called for an inclusive, distinctive and appropriately resourced sector focus integrated within the Digital Portugal initiative, co-ordinated in a whole of Portugal national response, although with some devolved implementation to regions and tourism intensive localities.

Principles for effective governance of transformation

Drawing on these aspirations, five underpinning principles for effective governance to facilitate the digital transformation of the tourism workforce in Portugal are proposed in Box 9, which are consistent with 'public value management' approaches to tourism strategic developments:

Box 9. Guiding principles for effective governance of the digital skills transformation

- **Complementarity of approach -** to ensure coherence and integration with existing 'other' efforts led or directly funded by the public sector.
- **Inclusivity** - to ensure appropriately broad involvement of a range of public-private-voluntary sector stakeholder groupings and interests in the process.
- **SME engagement** - to not restrict access to larger business but to ensure the delivery focus remains firmly on engaging smaller tourism businesses with less capacity to transform without additional support.
- **Embedded funding** - to use public sector and other leveraged funds to overcome market failure and rigidities in transformation and (probably) based on new and accessible funding instruments which tied capital support to needs-based digital systems and tools also to staff development for their effective use.
- **Evidence-led processes and prioritisation** - sharing evidence and experience across stakeholders, between co-operative networks, filling current intelligence and skills foresights gaps while also monitoring and evaluating efficacy of the transformation delivery against outcomes goals.

The proposals outlined below for the effective governance of the digital transformation are based on these five principles. To shape and steer a digital capacity building plan, and to underpin the first principle in particular, robust strategic leadership would be needed to bring together key policy-makers and practitioners. This can present substantial challenges to integrating the policy interests of different ministries and in building cross-agency collaboration for effective policy responses. New Zealand is one country which has seen some success in developing collaborative responses, bringing together eight different Ministries and four other publicly bodies to develop digitalisation and associated skills responses for tourism (Box 10).

To avoid further fragmentation, it is proposed that existing structures should be used, where possible, to deliver the digital transformation agenda and specifically through an enlarged role for the National Tourism Training Commission. This would be supported by Turismo de Portugal in (new) intelligence gathering, co-ordination across stakeholders, delivery, monitoring and evaluation, and in collaboration with NEST as an established technology innovation centre for the sector. NEST could take specific 'digital leadership' responsibility for the innovation elements of transformation support, including co-ordination of devolved delivery of digitalisation guidance and support through sub-sector focussed service delivery centres.

The National Tourism Training Commission, as it is currently tasked, has neither the remit nor breadth of development focus, and some reformation would be needed of its composition, terms of reference, and working arrangements to provide for a distinctive additional focus on digitalisation innovation and associated workforce preparation. Similar adjustments would need to be made to the strategic focus and mandate of Turismo de Portugal and NEST, alongside an extension of the resources needed to undertake the tasks. The strategy and delivery collaboration between the Commission and Turismo de Portugal would also provide for integration of the transformation actions with other (existing) policy actions and priorities

including the Tourism Strategy 2027, Reactivate Tourism Plan | Build the future, and also any wider post-COVID-19 sector recovery actions.

Beyond strategic leadership, the collaboration would need appropriate and robust stakeholder engagement which is complicated by the diversity of stakeholder organisations that should be involved across the public sector, industry and education. This presents challenges for how to engage with these in a manageable and sustained approach to guiding transformation at national level; a multi-layered approach is proposed to address this engagement challenge. The proposed central 'strategic' focus for this through the existing National Commission would also provide for devolved potential through its emerging regional groups. The role and scope for these regional arms would need to be re-enforced to actively work with, and through, DMOs to inform locally sensitive delivery and build connections with, and engagement of, smaller businesses in particular.

Box 10. Co-ordinating tourism digitalisation policy development in New Zealand

Recognising fragmentation of past public policies for tourism, the New Zealand government developed a more co-ordinated, cross-agency, approach starting with a draft national tourism strategy and consultation in 2019. The strategy included a distinct work stream to 'Lift Tourism Capability' through skills and education centred actions. Of eight Ministries with policy interests in tourism, two ministries were determined to work together to lead the co-ordination of the new strategy – the Ministry of Business Innovation and Employment (MBIE) and the Department for Conservation. These collaborated across the eight constituent Ministries and also four non departmental government bodies and other stakeholders engaged with tourism development and international travel. A single Minister heads the co-ordinated activity with a joint brief as the Minister of Tourism and as the governments minister for SMEs and for Regional and Economic Development.

One of the subsequent actions has been the Digital Capability Support Programme focussed on SMEs and has led through the New Zealand Qualmark tourism and hospitality rating agency which provides a funded, layered support combining introductory workshops for managers, followed by one-to-one diagnostic support to determine technology and skills needs and leading to co-funded implementation support.

Source: Choi et al. (2021)

To help unlock the necessary resources to implement the co-ordination, formation and delivery of the transformation, the response would need high level government support across the four current Ministries with policy interests in tourism and travel. This might need new legal instruments for the Commission or for Turismo de Portugal (and through them for NEST) to put this in place. One possibility would be for funding to be geared to actions within the next EU support framework 2021 -2027. Financing and industry engagement might be strengthened by appropriately tailored aspects of co-funding, especially for management and staff training to address the apparent legacy of low credibility of free training previously available to the sector. Without funding the transformation plan could not engage the sector or its workforce to the extent needed.

Funding could be administered through Turismo de Portugal, accountable initially to the National Commission and through this central structure to funding bodies. This would involve additionally constituted financing instruments, targeted on tourism SMEs and other 'needs' businesses. To ensure that SMEs integrated both technology and workforce development this might link support for digital systems selection and purchase with digital training requirements for the affected workforce. Consideration should be given to establishing National Awards for achievements in digital uptake and workforce development to help motivate wider engagement for employees and businesses.

The transformation focus should be based on sound intelligence of digital process developments in relation to (different) business transformation needs to inform shaping and steering of transformation through the National Commission. To provide for this, urgent consideration should be given to establishing a digitalisation skills and employment observatory providing for intelligence and reporting mechanisms to the Commission and its stakeholder partners, and also to provide 'forward' market signals on skills needs to the education sector. The policy recommendations set out below build on this analysis taking into account the current situation and institutional arrangements in Portugal.

Recommendations for effective governance of a digital skills transformation

To establish an effective governance framework to shape and steer a collaborative and strategic approach to delivering the digital transformation of the tourism workforce in Portugal, efforts should centre on:

- ***Establishing a centralised leadership focus for the strategy underpinning the Digital Capacity Building Plan*** at national level, which has the capability to integrate both digital innovation and associated skills development needs of businesses, and has credibility across the sector. This should be based, if possible, on an enhanced role and mandate for the National Tourism Training Commission, to provide necessary leadership and oversight for strategy development, implementation and review. The Commission would be supported in cross-stakeholder co-ordination, intelligence gathering, operational (strategy) implementation, monitoring and evaluation through devolved responsibilities allocated to a single delivery unit within Turismo de Portugal and accountable to the Commission for delivery and resourcing.

- ***Establishing an additionally constituted executive governance role of the Commission*** based on five operating principles: i) complementarity of approach to ensure coherence and integration with existing initiatives; ii) inclusivity to draw in broad stakeholder engagement; iii) SME engagement; iv) embedded funding; and v) evidence-led processes and prioritisation. Aligned to this, consideration should also be given to establishing a central structure of working sub-groups (all with cross-cutting representation) to represent the different interests and transformation roles of industry (with particular attention to smaller firm representation through Industry Associations), education and training providers and national level public bodies.

- ***Building the necessary commonality of interest and quality of collaboration through 'co-responsibility' compacts*** or similar inclusive knowledge exchange protocols. This should be supported by early development of a unified online platform for the National Commission to support communications and bi-lateral stakeholder exchange to bring trend and monitoring data together with diagnostic tools, case studies, training and funding information. Design of the platform should give active consideration to including an open access portal for businesses and individuals to access streamlined information for self-diagnostic tools, case studies, innovation support and training providers, and guidance on accessing, eligibility and application for funding.

- ***Building also a sub-national dimension for governance of the transformation strategy*** (within the Commission). This would involve either (or some combination of both) a single working sub-group bringing together DMOs, or alternatively harnessing the existing provisions for the National Commission for regional groupings. Here the regional arms would need to actively involve and work through DMOs to build credibility with locally based tourism businesses, and to inform both their engagement and locally sensitive delivery responsive to the broadband and other access for smaller businesses.

- ***Developing appropriate protocols for specific transformation roles and responsibilities of the current membership*** of the National Commission to focus the efforts and expertise of different stakeholders within the overall strategy. A specific need will be for an organisation to provide and integrate both the necessary technology and innovation foresight and skills intelligence needed to

support the Commissions transformation brief. The strategic focus for the Commission needs both technology and skills foresight capabilities, which NEST is well placed to bring together. This will require the additional establishment through NEST of a skills and employment observatory to support the Commission in the necessary intelligence to shape and steer the operational workforce transformation priorities and mechanisms and which can also take account of wider international experience of digitalisation in tourism.

- ***Establishing a Commission working group for evaluation and monitoring*** of the Digital Capacity Building Plan. Its terms of reference would be to provide ongoing evidence to inform the delivery of cost-effective transformation support, and monitor impacts of the Plan to ensure they respond to current and emerging workforce development needs across the sector. An early priority of any working group would be to establish a stakeholder endorsed, proportionate, evaluation strategy to progressively assess the effectiveness of implementation, improvement potential, and emerging impacts (including business success stories) to support the proposed digitalisation communications plan.

These policy recommendations for governance alongside those set out in Section 3, are commended as a joint-basis for tackling the substantial and urgent challenges facing Portugal as it prepares the tourism workforce for a digital future.

References

Baum, T (2015), 'Human resources in tourism: Still waiting for change? A 2015 reprise'. Tourism Management 50, pp.204-212.

Buhalis D. (2003), Etourism: Information Technology for Strategic Tourism Management, Pearson, FR and Prentice Hall. London.

Carlise S, Ivanov S & Dijkmans C (2021) 'The digital skills divide: Evidence form the European Tourism Industry' (Journal of Tourism Futures, March) .

Cedefop (2020b), Tourism at a Crossroads: Skills and Jobs Demand in a Coronavirus Era. European Centre for the Development of Vocational Training (Cedefop), Thessaloniki (GR).https://www.cedefop.europa.eu/en/news-and-press/news/tourism-crossroads-skills-and-jobs-demand-coronavirus-era.

Choi M, Glyptou K, Parsons D J, Thomas R, and Walsh K (2021), Emerging digital skills and human capital constraints on the hospitality and tourism workforce post COVID-19. ICRETH Working Paper (unpublished), Leeds Beckett University. Leeds.

Eurostat (2020), Employment in the Tourism Industries in the EU. Eurostat. http://ec.europa.eu/eurostat.

Jamal, T and Budke C (2020), 'Tourism in a world with pandemics: Local-global responsibility and action'. Pp. 181-188, in Journal of Tourism Futures. Vol. 6 (2). https://doi.org/10.1108/JTF-02-2020-0014.

Nedelkoska, L. and G. Quintini (2018), Automation, skills use and training, OECD Social, Employment and Migration Working Papers, No. 202, OECD Publishing, Paris, http://dx.doi.org/10.1787/2e2f4eea-en.

Next Tourism Generation (2019), Desk Research Summary on the Future of Digital, Green and Social Skills in Tourism, NTG Alliance. https://nexttourismgeneration.eu/wp-content/uploads/2019/03/NTG_Desk_Research_Summary_January_2019.pdf.

Next Tourism Generation (2021) NTG Toolkit for industry and education, NTG Alliance. https://nexttourismgeneration.eu/ntg-toolkit/

OECD (2021), "Preparing the tourism workforce for the digital future", OECD Tourism Papers, No. 2021/02, OECD Publishing, Paris, https://doi.org/10.1787/9258d999-en.

OECD (2020), "Preparing tourism businesses for the digital future", in OECD Tourism Trends and Policies 2020, OECD Publishing, Paris. DOI: https://doi.org/10.1787/f528d444-en

OECD (2020), *OECD Tourism Trends and Policies 2020*, OECD Publishing, Paris, https://doi.org/10.1787/6b47b985-en.

OECD (2019), Skills Outlook– Thriving in a digital world. OECD Publishing, Paris.

OECD (2016b), Getting Skills Right: Assessing and Anticipating Changing Skills Needs. OECD Publishing. Paris. https://doi.org/10.1787/9789264252073-en.

Statistics Portugal (2020), Information and knowledge society business survey, Website accessed on 22 June, 2021. https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUESdest_boui=415622957&DESTAQUESmodo=2&xlang=en.

World Economic Forum (2017), Digital Transformation Initiative: Aviation, Travel and Tourism. White Paper from World Economic Forum. Geneva. http://reports.weforum.org/digital-transformation/wp-content/blogs.dir/94/mp/files/pages/files/wef-dti-aviation-travel-and-tourism-white-paper.pdf.