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Exploring Innovative Digitalisation for Tourism MSMEs in Developing APEC Economies: What Can We Learn from Tourism's Response to COVID-19?

APEC Tourism Working Group

October 2021

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APEC Digital Workshop Series Report

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*The digital workshop series was conducted online from 20 - 22 April 2021. An accompanying website is available at: https://apec.digitaltourism.academy/

Table of Contents

1   Executive Summary

Micro, small, and medium tourism enterprises (MSMEs) have been particularly hard hit by the economic impacts of COVID-19. Innovative digital solutions can offer scope for tourism businesses to adapt to a new normal and to engage with existing and new customers. However, digitalisation is not without its own challenges, including cybersecurity, and barriers such as inadequate digital infrastructure and insufficient access to digitally skilled labour.

This two-part project (online workshop series and report) aimed to identify examples of innovative digital solutions that might assist MSMEs in developing member economies (particularly in non-urban areas) to respond to the challenges; to look at ways these solutions can be adopted (including through addressing barriers); and, to examine ways digital solutions can be disseminated to tourism operators especially in non-urban areas in the APEC region.

The APEC Tourism Working Group (TWG), through the Australian Department of Foreign Affairs and Trade (DFAT), contracted the Australian APEC Study Centre, RMIT University, to run the project which also included non-financial co-sponsors Malaysia and the Republic of Korea. Outputs included hosting a three-day online digital workshop and this report. Further to this it was decided to establish a website collating the workshop outputs and information to promote and enable tourism MSMEs to access relevant information.

The online workshops titled, **Innovation in digital tourism for MSMEs**, were held from 20 April 2021 to 22 April 2021 over three sessions and were attended by representatives from member economies, industry experts, tourism organisations and tourism MSMEs. The presenters and a facilitator sought to examine and reveal solutions that will enable tourism MSMEs to:

- understand the **benefits of digitalisation** through the identification of innovative digital solutions for tourism MSMEs in response to the challenges of COVID-19
- understand the **barriers to digitalisation**, particularly in non-urban areas of developing member economies
- overcome barriers and adopt **innovative digital solutions** in their businesses
- find support from member economies to better understand and explore **solutions to the challenges of digitalisation** including around cybersecurity, data privacy and shortages of digitally skilled workers.

Final outputs, information, and learning resources can be found at the site:

https://apec.digitaltourism.academy/

Topics on the website are organised around the following five key topic areas of relevance to MSMEs and tourism policy creators as follows:

1. digital basics and getting started
2. marketing and social media strategy
3. content creation
4. data, analytics, and cybersecurity
5. innovation and transformation.

In this report we list the key insights and resulting recommendations identified during the online workshops to support the resilience, immediate outcomes, and longer-term growth of successful digital innovation for tourism MSMEs and their support organisations. Over the following chapters in this report, conversations, presentations, research, and outputs from the online digital workshops have been distilled down to key learnings and opportunities and summarised under the following four key response areas: barriers; benefits; innovative solutions being implemented; and solutions for how economies can offer support for MSMEs to overcome the challenges of digitalisation.

1.1   Benefits of digitalisation

Benefits arising from the digitalisation of tourism MSMEs contribute directly to MSMEs' ability to respond successfully to the rapid changes of business due to COVID-19. Ellie Tonkin (Bundaberg Tourism, Australia) noted that having an established digital business model 'enabled MSMEs to be ready for increased tourism interest after [COVID-19] lockdowns'.[1]

We found that the benefits of digitalisation of MSMEs enable them to:
- more quickly pivot their businesses to changes in the market
- manage their own success more methodically and directly
- build and manage a successful digital presence through online interaction with a range of processes and technologies
- manage and grow successful partnerships with other digitally enabled businesses
- build an ongoing habit of digital uplift and transformation of their business models as technology, and the market, changes
- unlock contemporary forms of digital and contactless payment systems thereby reducing risk of non/late payments and transmission of COVID-19
- adopt new forms of e-commerce models for evolving their income streams
- participate in biosecurity, health, and trust networks established across economies
- share stories digitally and build a wider interest in their region and activities
- empower cultural and indigenous communities to share knowledge and deeper understanding of their regions, people, and history
- promote their destination strongly for when tourism returns
- evolve whole new modes of tourism such as new types of museums/installations, virtual art, geo-location, and proximity/ internet of things smart connections for new products and services.

1.2   Barriers to digitalisation

The COVID-19 crisis is having a pronounced and prolonged effect on tourism businesses impacting their income, sustainability, and survival. New variants of COVID-19 including the Delta strain and other factors affecting travellers' confidence may mean that they are less prepared to travel internationally even when it is deemed safe by economies. A report released by the UNWTO in June 2021 has experts concluding not to 'expect a return to pre-COVID-19 international tourist arrival levels until 2023 or later'.[2]

Due to the fact that tourism MSMEs are typically small and micro in size, many do not have the capacity and resources to survive the shocks created by a pandemic. COVID-19 has particularly exposed the financial fragility of tourism MSMEs with younger and micro businesses, particularly in leisure and hospitality, most exposed to the risk of failure. Many MSMEs are also heavily dependent on other businesses in the tourism ecosystem, so that when one suffers many also suffer. The full scale of the crisis may not yet be apparent as economic supports in many regions including Korea and Australia have limited business failures since the start of the pandemic. Tourism MSMEs' recovery will therefore depend on a range of interlinked systems covering economic, health and geographic, through to demand and supply-side factors.

Digital processes and services can contribute to the mitigation of COVID-19 risks faced by tourism MSMEs. The uptake of some of these services and solutions by MSMEs also serves to promote the merits of digitalisation in tourism. Examples include the use of digital communication (both online and through mobile apps) to monitor, communicate, assure vaccination accuracy and track COVID-19 exposure. Such systems have already normalised

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[1] See video 3, Strategy in marketing https://apec.digitaltourism.academy/home/learningresources/marketing/
[2] https://unctad.org/news/global-economy-could-lose-over-4-trillion-due-covid-19-impact-tourism

the use of online video communication, digital payment systems, and accelerated the use of mobile devices for more tourism business functions.

Many tourism MSMEs simply do *not know* what it is that they don't know about digitalisation of business models, services, platforms, technologies, and new emerging digital tourism models and products. Furthermore, many MSMEs do not have access to skilled IT enabled workers, communities, organisations, or consultants and this effect is accelerated as you move further from larger cities and urban areas. To achieve success in encouraging tourism MSMEs to take up new technologies and digital business methods the explicit value-proposition of its use and implementation must be extremely clear to business owners.

Certain communities, regions, or socio-economic groups, suffer additional disadvantages that affect their ability to digitise their businesses, or to access digitalised businesses. Such disadvantage can arise from low levels of digital literacy or education opportunities, from financial disadvantage and lack of access to technology, by their distance from suitable infrastructure, or from social or cultural dislocation. The Australian Digital Inclusion Index[3] was presented as a case study exploring how the ability of a person or community to access and understand digital technologies changes over time and how an economy can take steps to minimise barriers to technology uptake and understanding.

1.3 Innovative digital solutions

1.3.1 COVID-19 Health Passports for international travel

As the roll out of COVID-19 vaccines continues to rise economies are focusing on ways to restart their tourism activities. They face the challenge of how to reopen their borders and allow travel to resume while protecting their populations. Member economies are rightly continuing to focus on ways to work together to implement digital solutions to COVID-19.

One possible solution could be a vaccine passport, but the challenges of establishing and deploying such a system over multiple regions are not insignificant. Jason Li, from The Commons Project Foundation, presented on the CommonPass platform, a passport designed to ensure that only verifiable lab results and vaccination records from trusted sources are presented for the purposes of cross-border travel.

1.3.2 New digital business models and entrepreneurial activity

The tourism sector is a highly varied industry with many sub-operations, agencies and contractors combining to build a cohesive tourism experience. This wide breadth of services, companies, organisations, suppliers, partnerships, and co-partnerships lays the foundation for a highly innovative merging of business models, products, and services. COVID-19 has acted as an accelerant for change as many MSMEs have found their business models not able to compete in a marketplace that suddenly looks quite different.

New forms of technology will continue to make their way into the sector. The expanding use of big data, analysis and artificial intelligence is driving many new forms of services, platforms, software development and new business models. Encouraging a wider cross section of MSMEs to learn and use both basic and more advanced IT and STEM skills is one way to strengthen wider innovation in tourism related industries. Likewise, attracting digital knowledge workers to partner with tourism focused businesses should be encouraged utilising a range of economic and entrepreneurial incentives to build wide partnerships between technology start-ups and tourism businesses.

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[3] See 4.3 The Australian Digital Inclusion Index

1.4   Solutions to the challenges of digitalisation

Many of the workshop presentations focused upon how important it is for MSMEs to better understand their digital presence on the internet and leverage this knowledge in many different ways to achieve successful business outcomes. Businesses responding to a survey conducted by Korea's Ministry for SMEs and Start-ups in 2020 indicate that the smaller the MSME, the lower it self-reported its digital capability level to be. Whilst this data is perhaps not surprising for micro businesses, it is also interesting that between 62% and 100% of larger businesses also polled in Korea, including casinos, tour operators, MICE[4] and larger businesses, indicated their strong desire to also use, learn or hire-in new IT skills.

The importance of MSMEs working closely with provincial tourism organisations was emphasised throughout these workshops as these tourism organisations were most well positioned to both understand and respond to the needs of the MSMEs in their areas. Areas without strong tourism support organisations, especially in remote areas, were less likely to receive support to build capability. Commercial organisations offering support in consulting, resources, digital development, and training were also seen as a valued part of the digital skills development environment.

1.4.1   Policy insights from Korea - vision for 2021

Ms Deborah Park, representing the Republic of Korea, presented an innovative and wide-ranging set of policies designed to accelerate digital transformation in the tourism industry, promote safe domestic tourism and promote Korea as a future tourism destination. These policies set an exemplar for member economies and cover financial support, technical support, and a keen focus on workforce capability building with incentives for training providers to deliver digital capacity building programs.

1.5   Report recommendations - Table 1

Promoting what success looks like

1. The TWG could consider working with tourism organisations to collate and promote success stories, learning activities and services that encourage and incentivise MSMEs to incorporate digital processes and techniques in their business. These could include the stories of MSMEs who have successfully integrated digital techniques into their business with positive outcomes. The trusted relationship between provincial tourism organisations and their local MSMEs can be leveraged to both collect positive examples of digitalisation, and also to distribute success stories and digital knowledge to tourism MSMEs. Stories of success can be shared both provincially and across the region to inspire digitalisation.

Digital risk mitigation

2. Member economies are encouraged to review the status of digital inclusion across their economies. Understanding the differing needs of their constituents and providing appropriate access to infrastructure, software support and education will facilitate a more successful uptake of digital business models and a more consistent digitalisation of services for tourism MSMEs.

Encourage partnerships

3. We encourage the TWG to work with member economy tourism departments to develop a range of policies that encourage and promote opportunities for MSMEs to expand successful digital partnerships. The TWG may encourage member economies to develop methods and programs to incentivise partnerships between MSMEs and larger businesses, organisations, educational facilities, and entrepreneurs. Outcomes to focus on could include new tourism products and services development through supporting

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[4] **MICE** - Meetings, Incentives, Conferences & Exhibitions

Incubators for startups and incentivising partnerships between product developers and tourism MSMEs.

4. Projects, programs and policies could be developed by member economies to incentivise or motivate digital knowledge workers to become involved in the tourism sector and to encourage the growth of new models of tourism services.

5. The TWG might consider encouraging member economies to work together to create and support programs which develop innovation in the tourism market to encourage the growth of new tourism business models.

Further research

6. The TWG could consider conducting further research to assess basic digital literacy and understanding by MSMEs of digital business methods, with a particular focus on the smallest of entities and those located in non-urban areas. An APEC-wide digital literacy survey could be conducted online to establish a digital baseline. This knowledge could then inform the development of a learning framework[5] focused on how best to upskill digital knowledge in MSMEs.

Training

7. The TWG could explore supporting the development of a set of cross-border learning materials to build digital literacy knowledge in the smallest of MSME tourism businesses with a focus on remote learning methods for rural areas. Such a project could also be aligned with providing technical and/or financial support to MSMEs to upgrade their digital presence - especially around the key issue of making their websites mobile friendly (responsive design).

8. Member economies are encouraged to look at ways to incentivise MSMEs to understand the value of implementing digital change in their business models and processes. The TWG might consider advising economies to encourage incentives for training providers to build and deliver digital capability courses for tourism MSMEs, especially during the time of tourism downturn.

9. Member economies are encouraged to explore the Republic of Korea's policies designed to accelerate the digital transformation of tourism which include:
   - voucher systems to drive behaviour and investment in new forms of tourism businesses
   - technical consulting support for MSMEs
   - technology incubators for start-ups to support new product development
   - digital capacity building (training) for tourism operators.

Innovation promotion

10. The website, https://apec.digitaltourism.academy/ could be developed over time as a resource of articles, learning materials and support for tourism MSMEs shared across the APEC region.

Digital vaccination passports

11. The TWG could consider exploring a system for COVID-19 vaccination passports across APEC. An APEC-wide system may support the mitigation of COVID-19 risk due to travel, and play a part in the safe resumption of travel across economies.

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[5]See Appendix II Digital literacy frameworks

2   Introduction

Micro, small, and medium tourism enterprises (MSMEs) have been particularly hard hit by the economic impacts of COVID-19. Innovative digital solutions can offer scope for tourism businesses to adapt to a new normal and to engage with existing and new customers. However, digitalisation is not without its own challenges, including cybersecurity, and barriers such as inadequate digital infrastructure and insufficient access to digitally skilled labour.

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2.1.1 OECD perspective

Ms Jane Stacey, Head of tourism, OECD, opened her keynote presentation at the APEC digital workshops with OECD estimates that international tourism fell by 80% in 2020 – and the sector remains in survival mode with recovery expected to be protracted. She suggested that the 'crisis is a call to action to prepare the recovery and move to a more diversified, resilient and sustainable tourism economy'.[6]

Ms Stacey proposed criteria for key policy priorities to rebuild tourism post COVID-19 including to:

- restore traveller confidence
- sustain domestic tourism
- support tourism businesses to adapt and survive
- provide clear information and limit uncertainty (to the extent possible)
- evolve response measures and address gaps
- build toward a more resilient sustainable tourism.

Early in 2021, the OECD expected global GDP to return to pre-pandemic levels by mid-2021, after falling 3.4% in 2020. However, there are many factors indicating that travellers may be less prepared to travel internationally even when it is deemed safe by economies.[7] Ms Stacey suggested that recovery will depend on interlinked consequences arising from economic, health, and demand and supply-side factors. Economies where tourism is a big part of the economy have been particularly hard hit with adverse macro-economic effects. Young firms and SMEs, particularly in leisure and hospitality, are most exposed to the risk of business failure.

Vaccines have boosted early hopes for recovery in 2021 - but challenges remain, including new variants and vaccine roll out. Since April 2021, the Delta COVID-19 variant has been shown to be both more infectious and with viral loads at first detection shown to be 1000 times higher than the 2020 strains.[8] This faster spreading variant signals the risk of an even longer timeframe to recovery for the tourism sector.

2.1.2 Korea

Ms Deborah Park from the Republic of Korea reported that the effect of COVID-19 on the tourism sector in Korea has seen:

- an 85% decrease in international traffic
- travellers spending approximately 50% less on accommodation
- travellers spending 70% less on aviation via credit card records.

2.1.3 Viet Nam

Mr Quach The Hai reported from Ninh Binh Provincial Tourism, Viet Nam, that Ninh Binh regional tourism had been growing in the period 2010-2019 by an average of 11% PA but during 2020 tourism received only 25% of 2019 figures with a corresponding 55% decrease in revenue. Room capacity was filling to only 30-40% and that in 2020, 40% of their regional tourism businesses had gone bankrupt. What makes this figure all the more confronting is that such a significant effect was seen on the tourism industry in a province with no recorded cases of COVID-19 and with only 1500 cases recorded across all of Viet Nam in 2020. By April 2021, Viet Nam had still only registered 2784 COVID-19 cases again with no cases in Ninh Binh province.[9]

[6] https://apec.digitaltourism.academy/wp-content/uploads/2021/06/Jane-Stacey-OECD-Tourism-Keynote-APEC-2021.pdf
[7] https://tourismmarketing.agency/marketing-battle-plan-2021
[8] https://virological.org/t/viral-infection-and-transmission-in-a-large-well-traced-outbreak-caused-by-the-delta-sars-cov-2-variant/724
[9] https://apec.digitaltourism.academy/wp-content/uploads/2021/07/QUACH-THE-HAI-Ninh-Binh-Province-Viet-Nam.pdf

3 Benefits of digitalisation

Benefits arising from the digitalisation of tourism MSMEs contribute directly to an MSMEs' ability to respond successfully to the rapid changes of business due to COVID-19. Ellie Tonkin (Bundaberg Tourism, Australia) noted that having an established digital business model 'enabled MSMEs to be ready for increased tourism interest after initial lockdowns'.[10]

3.1 Enabling MSMEs to pivot their business more quickly to changes in the market

Positive outcomes of having digital capabilities were reported by MSMEs having employees with digital skills. Splitters Farm, Australia provided an example of utilising daily live streaming in order to build a market for the growth of their business even whilst fully closed down due to COVID-19 restrictions.[11] The owner, Carly Clark, used her professional marketing background and experience to build and sustain a successful online campaign/live stream, in order to set her business up for success once lockdowns finished and local tourism was able to begin again.

Yock Song (Tribe, Singapore) also demonstrated the ability to pivot from a face-to-face tourist guide model to an online live streaming model which successfully brought a new generation of customers to an awareness of Tribe's offerings.[12]

3.2 Enabling MSMEs to manage their own digital presence

A digital presence is not something that is built quickly, but it is a combination of understanding digital technology, understanding marketing principles, being able to lead with stories and engaging content, and being able to merge all these roles in order to build and sustain an active online presence for your business.

For a successful digital presence, MSMEs need to be able to interact online with a range of processes and technologies in a multitude of ways. These include:
- business management techniques including accounting, project management and communication
- market knowledge through online research, collection of and interpretation of customer data
- basic marketing presence including blogs, website, social media and content creation
- online listening to consumers, customer's interests and needs, and lead generation
- digital partnerships, e-news, extended marketing, and PR/media.

These factors combine to enable an integrated marketing strategy.

Ms Ellie Tonkin reported that supporting digitalisation of their clients enabled a range of benefits to flow to MSMEs. Ms Tonkin noted that:
- the development of a strong digital presence in the years before COVID-19 enabled MSMEs to be ready for increased tourism interest after initial lockdowns
- staying in market with inspiring content during lockdowns was vital
- soft content (blogs, organic social media, digital partnerships) built trust in tourism businesses so that lead generation strategies would reach potential travellers who were already engaged
- using 'surprise and delight' – using hero experiences as the hook, and then relentlessly promoting unknown gems to audiences – can successfully grow both length of stay and overnight visitor expenditure.

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[10] See video 3, Ms Ellie Tonkin, Strategy in marketing https://apec.digitaltourism.academy/home/learningresources/marketing/
[11] See section 5.2 Digital solutions employed by tourism businesses
[12] See video 1, 'The journey…' Content Creation – APEC Digital Tourism – Australia 2021

In order for MSMEs to fully leverage all aspects of a digital presence they must be encouraged and supported to successfully connect with many other digital agencies including provincial and larger tourism organisations and bodies. They should also connect with other businesses through digital partnerships, online agents and promotional services.

Having a successful digital presence is therefore a combined outcome of developing a sense of understanding of:

- business and marketing techniques
- your customer's needs and interests
- the value of solid digital partnerships and their reach into both physical and digital online communities
- contemporary technology including up to date software on working equipment.

Two one-hour masterclasses[13] were given online by Ms Liz Ward (Tourism Tribe, Australia) and Mr Michael Simonetti (AndMine, Australia) both providing many detailed suggestions for how MSMEs can build their digital online presence successfully.[14]

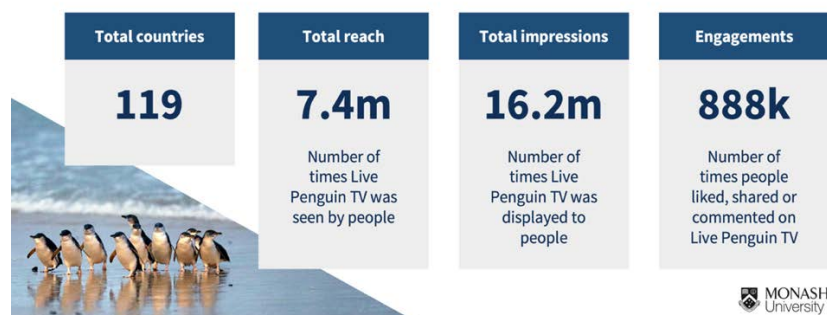### 3.3   Enabling MSMEs to promote their destination marketing for when tourism returns

3.3.1   Live Penguin TV, Victoria, Australia

Dr Madelene Blaer, from Monash University, Australia, presented her research on the benefits of utilising web based live streaming of content as a way to promote the not-for-profit tourism destination Philip Island Nature Parks in Victoria, Australia. Launched during Australia's strict COVID-19 travel restrictions and lockdowns of 2020, Live Penguin TV was a nightly webcam livestream of the Philip Island Penguin Parade.[15]

Dr Blaer's research[16] observed and recorded benefits that flowed from the viewership by generating awareness and interest in the tourism destination and its surrounds. Outcomes noted included an increase in positive word-of-mouth and online expression (eWOM) about Phillip Island Nature Parks with an increase in motivation to visit, bookings to visit and actual visits to the Penguin Parade destination. Viewers were more likely to purchase from the online store or donate by financially 'adopting' an animal which also drove an interest in conservation and feelings of connection to viewers in the wider world. Benefits also flowed to partnering regions and organisations via increased information searches about Australia, Victoria, Phillip Island, conservation and the Penguin Parade.

Campaign social media performance snapshot

- Between 24 Aug and 15 Dec 2020, 120 Live Penguin TV videos and related update posts on Facebook and 114 videos on YouTube achieved:

Total countries	Total reach	Total impressions	Engagements
119	7.4m	16.2m	888k
	Number of times Live Penguin TV was seen by people	Number of times Live Penguin TV was displayed to people	Number of times people liked, shared or commented on Live Penguin TV

MONASH University

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[13]Masterclass presentations available both as video and pdf via: https://apec.digitaltourism.academy/home/presenters/
[14] Also see videos 1 & 2: https://apec.digitaltourism.academy/home/learningresources/marketing/
[15] See video 2, Live penguin streaming https://apec.digitaltourism.academy/home/learningresources/content-creation/
[16] https://apec.digitaltourism.academy/wp-content/uploads/2021/06/Madelene-Blaer-Monash-University-APEC-2021.pdf

The research suggested that viewing the campaign created a range of benefits for viewers including acknowledging the value of the park ranger hosts and generating a sense of community and connection.

Viewer comments included:
- 'Fun and educational. The guides were FANTASTIC! They were able to keep attention and interest even after you've watched it a couple of times.'
- 'It helped to cope with lockdown and its isolation.'
- 'It kept me sane during lockdown as I had something special to look forward to nightly.'
- 'Connected us to nature during lockdown when unable to physically visit.'
- 'It became like family,' and, 'prompted many memories of family holidays on Phillip Island'.

Dr Blaer's research suggests that there is a value to MSMEs establishing digital partnerships, when possible, to enable the widest benefit from their promotional activity and to leverage other related businesses' success. Digital partnerships can be successfully introduced, grown and supported via an MSMEs' relationship with their provincial tourism organisation.

3.4   Cultural and Indigenous benefits of digitalisation

Ms Nikita Ridgeway, Director, and founder of BLDAC and Bundjalung/Biripi woman, presented on cultural and Indigenous factors as an Australian Aboriginal working in digital marketing.

Ms Ridgeway's presentation[17] provided insight[18] into the many key aspects and challenges of digitisation of tourism when working with Indigenous or culturally diverse peoples. These ranged from the many positive effects that access to digitalisation for Indigenous cultures can have through to the many challenges - some of which may be only peculiar to certain Indigenous groups. These insights raise the challenge for all economies to work with, identify and grow the potential positive outcomes for Indigenous and culturally diverse people in their regions.

The ability to share stories digitally empowers communities to expand understanding of regions, people, and history. These are all aspects that contribute strongly to tourism and the motivation of tourists to travel to areas. Therefore, supporting cultural communities to get their stories online, or to have easier access to digital techniques opens opportunities to build local tourism outcomes.

3.4.1   Positive cultural and Indigenous insights to maximise include that:
- increasing digital knowledge in indigenous cultures has additional positive outcomes as these tools can be used to promote cultural harmony and knowledge sharing
- ideally Indigenous training would be delivered by other Indigenous community members
- digitisation opens opportunities for whole new modes of tourism to evolve such as new types of museums/installations, virtual art or additional information via mobile phones dynamically linked to geo-location, museum objects or other proximity/ internet of things smart connections
- increasing digital knowledge for Indigenous communities involves community capacity building. The aim is to teach them how to do it themselves and support them

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[17] See video 3, 'Understanding Indigenous…' https://apec.digitaltourism.academy/home/learningresources/innovation/
[18] https://apec.digitaltourism.academy/wp-content/uploads/2021/07/Nikita-Ridgeway-Cultural-and-Indigenous-presentation-insights-APEC-2021.pdf

with access to technology and clear training support materials like checklists and systematic approaches.

3.5 Recommendations to accelerate the benefits of digitalisation

1. The TWG could consider working with tourism organisations to collate and promote success stories, learning activities and services that encourage and incentivise MSMEs to incorporate digital processes and techniques in their business. These could include the stories of MSMEs who have successfully integrated digital techniques into their business with positive outcomes. The trusted relationship between provincial tourism organisations and their local MSMEs can be leveraged to both collect positive examples of digitalisation, and also to distribute success stories and digital knowledge to tourism MSMEs. Stories of success can be shared both provincially and across the region to inspire digitalisation.

4 Barriers to digitalisation

4.1 Impact of COVID-19 on business

The COVID-19 crisis is having a pronounced and prolonged effect on tourism businesses affecting their income, sustainability, and survival. As such it is currently the most direct barrier to businesses being able to learn new digital processes and technologies and thus to devise and implement digitalisation plans for their businesses. Re-opening the tourism economy and rebuilding destinations will require a co-ordinated approach across many sectors and regions due to the inter-dependent nature of tourism services. Early in 2021, the OECD expected global GDP to return to pre-pandemic levels by mid-2021, after falling 3.4% in 2020. Current figures from APEC suggest that the rebound is better than expected with member economies estimated to grow 6.3% in 2021.[19] However, actual spend for Jan-March 2021 is still down by 76% compared to the same quarter in 2019 in the Americas, and down by 97% for the same period in Asia and the Pacific.[20]

International Tourist Arrivals, % change
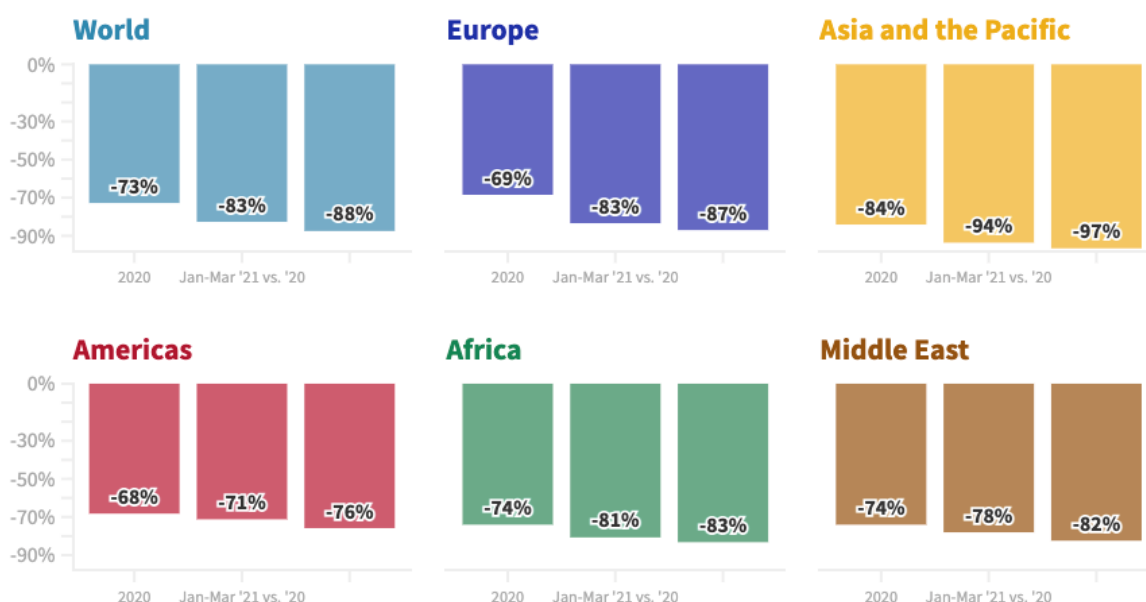
Source: Source: World Tourism Organization (UNWTO) ©
Data as collected by UNWTO, May 2021. Published: 31/05/2021

There are many factors indicating that travellers may be less prepared to travel internationally even when it is deemed safe by economies.[21] Korea reported an 85% reduction in inbound and outbound tourist numbers whilst Viet Nam's Ninh Binh province, which had had no recorded cases of COVID-19 at all to April 2021, still experienced a tourism revenue decline of 55% compared to 2019 with 40% of tourism businesses closing permanently.[22] This demonstrates that even regions with no recorded cases of COVID-19, within economies with low overall numbers of cases, are still drastically affected by COVID-19.

Recent economic figures suggesting growth in 2021 are not necessarily capturing the micro-climate of the many businesses within the tourism industry. A report released by the

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[19] https://www.apec.org/Press/News-Releases/2021/0528_ARTA
[20] https://www.unwto.org/taxonomy/term/347
[21] https://tourismmarketing.agency/marketing-battle-plan-2021
[22] Insights from APEC economies

UNWTO in June 2021 has experts concluding not to 'expect a return to pre-COVID-19 international tourist arrival levels until 2023 or later'.[23]

Lack of income and an insecure future function as a direct barrier to businesses' confidence to explore new digital processes and business models. New variants of COVID-19 including the Delta strain 'reduces planning certainty in the tourism industry in already uncertain times',[24] thus magnifying negative impacts of the pandemic in ways that had not been forecast.

4.2 Financial barriers and disadvantage

Many tourism businesses are small and micro in size and are heavily dependent on other businesses in the tourism ecosystem for their success. MSMEs are generally less resilient than larger businesses and lack the capacity and resources to cope with the changes and costs that shocks to their market entail. In this respect the crisis has particularly exposed the financial fragility[25] of many tourism MSMEs. Many economies have also implemented a range of financial supports that have limited many business failures since the start of the pandemic.[26] Whilst this is a welcome and useful policy, it does potentially risk obscuring the true numbers of business losses until these supports are turned off. Not all tourism businesses will survive – and many are facing existential decisions about future. Younger businesses and MSMEs, particularly in leisure and hospitality, are most exposed to risk of failure.

Many tourism MSMEs simply do *not know* what it is that they don't know about digitalisation of business models, services, platforms, technologies, and new emerging digital tourism models and products.[27] Furthermore, many MSMEs do not have access to skilled IT enabled workers, communities, organisations, or consultants and this effect is accelerated as you move further from larger cities and urban areas.

Certain communities, regions, or socio-economic groups, suffer additional disadvantages that affect their ability to digitise their businesses, or to access digitalised businesses. Such disadvantage can arise from low levels of digital literacy or education opportunities, from financial disadvantage and lack of access to technology, by their distance from suitable infrastructure, or from social or cultural dislocation. The Australian Digital Inclusion Index[28] was presented as a case study exploring how the ability of a person or community to access and understand digital technologies changes over time and how an economy can take steps to minimise barriers to technology uptake and understanding.

Mitigation of COVID-19 risks to tourism MSMEs can involve, and positively promote, the use of digital solutions and processes. These include the use of digital communication (both online and through mobile apps) to monitor, communicate, assure vaccination accuracy and track COVID-19 exposure. Such systems have already normalised the use of online video communication, digital payment systems, and accelerated the use of mobile devices for more tourism business functions.

To achieve success in encouraging tourism MSMEs to take up new technologies and digital business methods the explicit value-proposition of its use and implementation must be extremely clear. It is essential that tourism MSMEs understand both what they are hoping to achieve with new technologies and also how they will be able to measure this success.

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[23] https://unctad.org/news/global-economy-could-lose-over-4-trillion-due-covid-19-impact-tourism
[24] https://www.dbresearch.com/servlet/reweb2.ReWEB;REWEBJSESSIONID=CE103D624178BC07576E15484CA8EA75?rwsite=RPS_EN-PROD&rwobj=ReDisplay.Start.class&document=PROD0000000000519078, July 2021
[25] See 6.1.2 Policy insights from Viet Nam – Ninh Binh Province
[26] See 4.2 Financial barriers and disadvantage
[27] See 5.1 New digital business models and entrepreneurial activity.
[28] See 4.3 The Australian Digital Inclusion Index

4.3   The Australian Digital Inclusion Index

Dr Chris K Wilson, Research Fellow Swinburne University, Centre for Social Impact, presented on Australia's research on digital inclusion and enabling access. Publication and analysis of data since 2014 is captured in an annual report titled the Australian Digital Inclusion Index.[29] (ADII) The key outcomes of this report are to understand how well Australians have the ability to access and understand digital technologies, and how this ability changes with time. The ADII results indicate distinct barriers to digital access with many of these indicators likely to resonate with member economies.

The ADII creates an understanding and measure of digital inclusion across an economy by exploring three dimensions:

4.3.1   Access

- internet access: frequency, places, and number of access points
- internet technology: computers, mobile phones, mobile broadband, and fixed broadband
- internet data allowance: mobile and fixed internet.

Measures used include how often, where, device access, mobile and fixed services, service quality, volume of access.

4.3.2   Affordability

- relative expenditure: share of household income spent on internet access
- value of expenditure: total internet data allowance per dollar of expenditure
- value of expenditure and relative household expenditure on internet services.

4.3.3   Digital Ability

- attitudes: including notions of control, enthusiasm, learning, and confidence
- attitudes towards digital technologies, and online skills
- basic skills: including mobile phone, banking, shopping, community, and information skills
- activities: including accessing content, communication, transactions, commerce, media, and information.

4.4   The Australian Digital Inclusion Index Australian region summary

Digital inclusion follows some clear economic and social contours. In general, Australians with lower levels of income, employment, and education are significantly less digitally included. There is consequently a substantial digital divide between richer and poorer Australians.

4.4.1   Age

For Australians aged 65+ just over a quarter (28.7%) of this age group feel empowered by computers and technology and just one in eight (13.3%) feel they can keep up with technological changes.

4.4.2   Geography

The ADII reveals substantial differences between Australians living in rural and urban areas. In 2020, digital inclusion is 7.6 points higher in capital cities (65.0) than in rural areas (57.4). The general trend has been a narrowing of this gap since 2015, (down 2.0 points), driven mainly by increases in *access* via fibre and satellite infrastructure.

4.4.3   Building digital confidence to enhance digital inclusion

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[29] https://digitalinclusionindex.org.au/the-index-report/report/

While the COVID-19 restrictions may have made the benefits of digital technologies more obvious, it is important to address the anxieties or scepticism that many Australians have about using digital technologies.

It is also important to note that there is some evidence[30] that the rise in internet use during the COVID-19 pandemic is being exploited by hackers and scammers. It is important that both experienced and new users are equipped with the knowledge and skills to engage online both securely and confidently.

4.4.4   Affordability challenge exacerbated by COVID-19 economic slowdown

The Affordability score has increased only marginally since 2014. While the absolute cost of internet data has gone down, households are now spending more money on internet services due to greater usage.

4.4.5   Mobile-only users are less digitally included

More than four million Australians access the internet solely through a mobile connection and around one in five have no access to a personal computer at home, and thereby rely on mobile devices (smartphones or tablets) when using the internet. Being mobile-only is likely to pose difficulties in the context of COVID-19, with online activities such as remote working and learning often demanding higher data allowances and device capabilities. Overall, the gaps between digitally included and excluded Australians are substantial and are widening for some groups.

Member economies consist of many varied populations and generally contain larger numbers of people living in remote locations than the numbers represented in Australia. The Australian Digital Inclusion Alliance notes that 'no two towns are the same',[31] therefore the application of a Digital Inclusion Index-styled report for each economy would differ significantly. However, it is likely that many of the barriers raised in the ADII report would also be quite relevant to planning for all member economies. For economies wishing to assess aspects of their own digital inclusion, a detailed and practical discussion paper is available online.[32] This paper details the objectives, measurement, and key themes of: access; affordability; online activities; and digital literacy.

4.4.6   Cultural and Indigenous challenges to mitigate:

- Support for remote, culturally varied communities, and Indigenous tourism activities needs to be purposefully targeted, negotiated with the community and supported with planning and culturally aware training.
- Financial factors may be different for remote, culturally varied communities, and indigenous tourism and therefore may need to be supported with specific policy and actions.
- Teaching digitalisation based around real-life scenarios, risks and possibilities is critical to engage learners in new technology. This must also include the opportunity to practice and troubleshoot real scenarios – not just hypotheticals.
- Involving Elders in communities is critical in driving buy-in and successful outcomes.

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[30] https://www.accc.gov.au/media-release/warning-on-covid-19-scams
[31] https://www.digitalinclusion.org.au/wp-content/uploads/2018/11/ADIA-submission-to-the-Digital-Economy-Strategy-Nov-2017.pdf
[32] https://digitalinclusionindex.org.au/the-index-report/the-discussion-paper/

4.5   Recommendations regarding barriers to digitalisation

2. Member economies are encouraged to review the status of digital inclusion across their economies. Understanding the differing needs of their constituents and providing appropriate access to infrastructure, software support and education will facilitate a more successful uptake of digital business models and a more consistent digitalisation of services for tourism MSMEs.

5 Innovative digital solutions for tourism MSMEs

5.1 New digital business models and entrepreneurial activity

The tourism sector is a highly varied industry with many sub-operations, agencies and contractors combining to build a cohesive tourism experience. This wide breadth of services, companies, organisations, suppliers, partnerships, and co-partnerships lays the foundation for a highly innovative merging of business models, products, and services. COVID-19 has acted as an accelerant for change as many MSMEs have found their business models not able to compete in a marketplace that suddenly looks quite different.

Digital innovation and evolution are a constant factor across all industries. For innovation in digital business models to flourish, MSMEs need to understand the distinct value of implementing such a change to their business process combined with a realistic understanding of the change requirements and the timeline needed for successful implementation. Member economies are well placed to provide this information and support to enable such change.

5.1.1 Drones

Drones are a good example of new technologies now being implemented in tourism business models. Support for business model development, new partnerships and co-investment via The Republic of Korea's Ministry for SMEs and Start-ups Technology Incubating Programme for Start-ups (TIPS),[33] has led to the development of new forms of live entertainment.

Korean financial co-investment was seeded to a non-tourism company that specialised in drone technology, design, and production. This co-investment led to the development of tourism content in the form of live night-time shows featuring programmable drones with lighting performing for local festivals and tourist spots.

5.1.2 Data

In another example funded through Korea's TIPS, a tourism company that specialised in vehicle rental and exclusive driver services expanded its use of big data and artificial intelligence in order to reposition itself as a tourist attraction recommendation system using big data analysis.

Companies such as the Australian Tourism Data Warehouse support tourism businesses directly by utilising a growing array of data to help drive customers and travellers to the most suited destinations. Their CEO, Jan Hutton, explored this area in her presentation at the **Innovation for Digital tourism for MSMEs** workshop.[34]

5.2 Digital solutions employed by tourism businesses

COVID-19 has acted as an accelerant for change as many MSMEs have found their business models not able to compete in a marketplace that suddenly looks quite different.

Presenters at the online workshops spoke of a range of evolving digital techniques being employed as a direct response to the sudden disappearance of their marketplace. Two MSMEs, Ms Carly Clark from Splitters Farm, Queensland, Australia, and Mr Yock Song, Tribe, Singapore, spoke of their experience of implementing social media live streaming into their daily or weekly business operations and the benefits this brought to their businesses.

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[33] https://apec.digitaltourism.academy/wp-content/uploads/2021/06/Deborah-Park-KOREA-case-study-APEC-2021.pdf
[34] See video 3 'The acceleration of digital tools…' Data, analytics & cybersecurity – APEC Digital Tourism – Australia 2021

When Splitters Farm went into lock down with the effect being that the bank would no longer offer a loan to expand her business, Ms Clark switched to daily live streaming of events at her farm in order to build the marketplace for her business' post-lockdown return.[35] This resulted in both the building of a digital market for her business and enabled her business to successfully apply for funding post-lockdown. Likewise, Mr Yock Song from Tribe, Singapore,[36] converted their daily intimate tour groups into an online model that enabled their presenters to occasionally go even deeper into behind-the-scenes experiences than they would normally be able to present to a face-to-face tour group. By partnering with local businesses that would host their virtual tours, these vendors were then able to coordinate a pre-tour delivery of the food and beverages that where the focus of the live streams. In this way multiple businesses worked together to expand their market and offer new COVID-19 lockdown experiences.

Dr Madelene Blaer similarly referred to the value of live streaming digital content[37] as being a potential mechanism to partner with other regional businesses to cross-promote and expand consumers' options for engagement.

5.3 Partnerships

A number of presenters spoke of the partnerships that enabled MSMEs to develop new digital skills and bring innovation to their business. Ms Serena Eldridge (Grampians Tourism, Australia) presented[38] on the value of regional tourism organisations working closely with MSMEs in their region in order to recommend business process changes and deliver basic knowledge around digital marketing services tools and services. Ms Eldridge drew attention to the lack of skilled digital workers available in regional areas and emphasised the value of MSMEs exploring whether they may indeed already have an employee with digital experience or aptitude that they could encourage – and further train – to support their business. Grampians Tourism also undertook a successful pilot project to determine the digital needs of their region's MSMEs and worked with a commercial organisation to deliver digital training to small and micro businesses in their area.

A range of presenters referred to providing similar support for digital literacy and knowledge to businesses through trusted partnerships.[39 & 40]

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[35] See video 2, Ms Carly Clark https://apec.digitaltourism.academy/home/learningresources/digital-basics/
[36] See video 1, Mr Yock Song https://apec.digitaltourism.academy/home/learningresources/content-creation/
[37] See section 3.3.1 Live Penguin TV, Victoria, Australia
[38] See video 4, Ms Serena Eldridge https://apec.digitaltourism.academy/home/learningresources/digital-basics/
[39] See video 3, 'The acceleration of…' https://apec.digitaltourism.academy/home/learningresources/data-analytics/
[40] See video 1, Ms Liz Ward https://apec.digitaltourism.academy/home/learningresources/digital-basics/

5.4 Recommendations regarding innovative digital solutions for MSMEs

3. We encourage the TWG to work with member economy tourism departments to develop a range of policies that encourage and promote opportunities for MSMEs to expand successful digital partnerships. The TWG may encourage member economies to develop methods and programs to incentivise partnerships between MSMEs and larger businesses, organisations, educational facilities, and entrepreneurs. Outcomes to focus on could include new tourism products and services development through supporting Incubators for startups and incentivising partnerships between product developers and tourism MSMEs.

4. Projects, programs and policies could be developed by member economies to incentivise or motivate digital knowledge workers to become involved in the tourism sector and to encourage the growth of new models of tourism services.

6 Solutions to the challenges of Digitalisation

6.1 Insights from member economies

Many of the workshop presentations focused upon how important it is for MSMEs to better understand their digital presence on the internet and leverage this knowledge in many different ways to achieve successful business outcomes. Smaller businesses responding to a survey conducted by Korea's Ministry for SMEs and Start-ups in 2020[41] indicate that the smaller the MSME, the lower it self-reported its digital capability level to be. The importance of MSMEs working closely with provincial tourism organisations was emphasised throughout these workshops with provincial tourism organisations well positioned to both understand and respond to the needs of the MSMEs in their areas. Areas without this type of support, especially in remote areas,[42] were less likely to receive support to build capability. Commercial organisations offering support in consulting, resources, digital development, and training were also seen as a valued part of the digital skills development environment.

Ms Deborah Park,[43] representing the Republic of Korea, presented an innovative and wide-ranging set of policies[44] designed to accelerate digital transformation in the tourism industry, promote safe domestic tourism and promote Korea as a future tourism destination. These policies set an exemplar for APEC member economies.

6.1.1 Policy insights from Korea - vision for 2021

In response to the tourism situation in Korea and the accelerating digital transformation, Korea is implementing new support initiatives covering three pillars:
1. financial support
2. technical support
3. support for capacity building.

Facing the crisis as an opportunity to strengthen competitiveness through market recovery and innovation, this policy is designed to:
- support the innovation of the tourism industry
- promote safe domestic tourism
- promote Korea as a future tourism destination.

The Korean policies incorporate:
- financial support for MSMEs and new product development
- technical support for MSMEs
- a focus on ICT, overall management and supporting new trends in tourism
- a voucher system to enable support and incentivise positive change
- matching consultants with businesses
- new product development supported by a technology incubating program for start-ups
- digital capacity building (training) for tourism operators.

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[41] See Slide 9 https://apec.digitaltourism.academy/wp-content/uploads/2021/06/Deborah-Park-KOREA-case-study-APEC-2021.pdf
[42] https://digitalinclusionindex.org.au/the-index-report/report/
[43] See video 2, Ms Deborah Park https://apec.digitaltourism.academy/home/learningresources/innovation/
[44] https://apec.digitaltourism.academy/wp-content/uploads/2021/06/Deborah-Park-KOREA-case-study-APEC-2021.pdf

6.1.2   Policy insights from Viet Nam – Ninh Binh Province

Ninh Binh province in Viet Nam also presented a range of policies to promote domestic tourism development and support local businesses by:

- supporting MSMEs' digital transformation
- reducing VAT, enterprise income tax, personal income tax, and land tax
- reducing the cost of visiting the region
- supporting enterprises to train human resources.

6.2   Detailed solutions proposed to support the development of digital skills and innovative change within tourism MSMEs

6.2.1   Voucher systems to drive behaviour and investment in Korea

In response to the accelerating digital transformation of tourism, Korea is in the midst of implementing the tourism and MSMEs Innovation Voucher Initiative.

This scheme provides financial support in the form of financial support vouchers to enhance the digital competency of tourism MSMEs. This is provided through a matching service bringing tourism companies and service suppliers together.

Tourism businesses on one side can be matched with an approved supplier on the other end. Suppliers apply to be part of this initiative. When tourism MSMEs have a need for product development, consulting, or marketing, they can choose one area and select from the matching supplier service.

Tourism MSMEs had the opportunity to apply for these vouchers in April and, once approved, the vouchers are valid for use through to November 2021.

Financial Support

• Toursim SMEs Innovation Voucher Initiative

	Programme	Service type
Product development	Tourism innovation service development	• Planning of product, service and business model • Market trend analysis
	Tourism innovation service realization	• Creating AR content, AICBM technology • Build mobile platform
Consulting	Business consulting	• Consulting on business improvement
	Digital competence	• Build digital capacity • Cloud SW (PaaS iaaS)
Marketing	PR/ marketing	• ICT solutions • Digital marketing strategies
	Design development	• Branding, naming, concept creation • Product and app design

Ms Deborah Park - Republic of Korea, 2021. Presentation slides

6.2.2   Technical consulting support

Similar to the voucher system, the Republic of Korea is implementing a service model that enables MSMEs to access professional consultants to help review their business to gain advice on the best steps available for their own digital transformation of services, products and business model development. Consulting services for MSMEs may support activities such as understanding and responding to new trends in the tourism industry. ITC and overall management support are offered to encourage business transformation through developing new business models with technology integration. Likewise, support on securing digital distribution channels and entering the mobile market is supported by expertise in digital distribution.

6.2.3   Technology Incubators for Start-ups

Korea's Ministry for SMEs and Start-ups (MSS) has initiated a Technology Incubating Program for Start-ups (TIPS)

This program was started to identify those tech companies who have potential in tourism, or those companies who are willing to partner up with tourism companies. This is a private investment fund whereby the private sector decides to sponsor or invest into a particular tech company. MSS is then invited by the company to give further investment. If a certain amount is invested by private investments such as $100,000 USD, then MSS can give additional investment of up to $620,000 USD. This program encourages tech companies to partner with tourism companies to expand business into new sectors. Currently Korea has fifty places in this scheme encouraging tech companies to partner with tourism companies or expand their businesses into this sector. Co-investment through this scheme has led to the development of tourism content in the form of live night-time shows featuring programmable drones and a vehicle-rental services expanded its use of big data and artificial intelligence in order to reposition itself as a tourist attraction recommendation system using big data analysis.

Korea committed to:
- incentivising partnerships between MSMEs and larger businesses, organisations, educational facilities, and entrepreneurs
- drive new product development by supporting Incubators for startups and incentivising partnerships between product developers and MSMEs.

6.3   Workforce capability building

The final investment technique presented by Korea for market recovery and innovation focuses on capacity building of workers within the tourism industries.

In 2020 MSS surveyed 306 tourism MSMEs around their demand for the introduction and utilisation of IT technology in their businesses. They asked if respondents needed to learn or use IT skills in their line of work. The results indicated that 100% of casinos, 82% of tour operators and 69% of MICE[45] businesses agreed with this statement.

They also asked about hiring practices and whether businesses will be looking for these IT skills in new hires. Seventy-five percent of hotels and accommodation services agreed that they would be looking for people with these skills and 62.5% of the MICE sector also indicated similarly. From this survey it was concluded that digital capacity is not something that tourism companies are harnessing at the moment. In response, a new initiative was launched in 2021 to provide digital capacity building for tour operators.

Tour operators are among the most devastated sector within tourism. Along with aviation, many have gone out of business or have put their workers on unpaid extended leave. Korea's MSS has responded to this situation by devising a digital capacity building program

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[45] **MICE** - Meetings, Incentives, Conferences & Exhibitions

for tour operators which consist of a 3–4-week course to be delivered to 10,000 people throughout 2021 making up approximately 10% of the tourism workforce.

This program will focus on beginner to advanced digital skills in:

- understanding the mobile system - including learning how to make websites responsive for display on mobile technologies.
- understanding social media marketing
- digital content creation and planning
- practical application of these techniques and technologies.

6.3.1 Incentives for Training Providers to deliver Digital Capacity Building Programmes

COVID-19 has accelerated the need for MSMEs to upgrade digital skills and, due to the drop-off of work in tourism sectors, may present as a rare opportunity for member economies to harness this time to upskill operators in essential digital tourism techniques and understanding. Such training provided during this time could be aligned with financial support programs to incentivise a wide uptake.

Korea demonstrates a focus on such capacity building with the establishment of the Future Tourism Talent Training Centre and education platform. Other economies are also implementing similar approaches with Australia offering free 6–12-month tertiary courses in a range of IT, digital marketing, and cybersecurity areas for 2021.[46]

Capacity Building

- **Establishment of the Future Tourism Talent Training Center & Education Platform**

    ✓ **e-learning studio, ICT multimedia room, etc.**

    ✓ **Training programmes**

Section	Course
Convergence of ICT & Tourism	• Tourism planning and marketing utilizing IT technology (drone, VR, AR, etc.)
Digital Marketing	• Expert training on digital marketing and planning
Bigdata	• Marketing with tourism bigdata analysis
Content Production	• Tourism content creator training

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[46] https://www.dese.gov.au/job-ready/2021-short-courses

6.4   APEC digital workshop website

The collation of this final report from the APEC Digital Workshop Series into both a pdf and website designed for access by MSMEs, is itself an example of utilising digital technologies to incentivise and deliver capacity building materials in an easily accessible format for MSMEs.

The website, https://apec.digitaltourism.academy/ could evolve as a resource to be continually built upon with more links, layers, learning materials and further support for MSMEs added in the future.

6.5   Recommendations for solutions to the challenges of digitalisation

5. The TWG might consider encouraging member economies to work together across borders to create and support programs which develop innovation in the tourism market to encourage the growth of new tourism business models.

6. The TWG could consider conducting further research to assess basic digital literacy and understanding by MSMEs of digital business methods, with a particular focus on the smallest of entities and those located in non-urban areas. An APEC-wide digital literacy survey could be conducted online to establish a digital baseline. This knowledge could then inform the development of a learning framework[47] focused on how best to upskill digital knowledge in MSMEs.

7. The TWG could explore supporting the development of a set of cross-border learning materials to build digital literacy knowledge in the smallest of MSME tourism businesses with a focus on remote learning methods for rural areas. Such a project could also be aligned with providing technical and/or financial support to MSMEs to upgrade their digital presence - especially around the key issue of making their websites mobile friendly (responsive design).

8. Member economies are encouraged to look at ways to incentivise MSMEs to understand the value of implementing digital change in their business models and processes. The TWG might consider advising economies to encourage incentives for training providers to build and deliver digital capability courses for tourism MSMEs, especially during the time of tourism downturn.

9. Member economies are encouraged to explore the Republic of Korea's policies designed to accelerate the digital transformation of tourism which include:
   - voucher systems to drive behaviour and investment in new forms of tourism businesses
   - technical consulting support for MSMEs
   - technology incubators for start-ups to support new product development
   - digital capacity building (training) for tourism operators.

10. The website, https://apec.digitaltourism.academy/ could be developed over time as a resource of articles, learning materials and support for tourism MSMEs shared across the APEC region.

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[47] Digital literacy frameworks

7   COVID-19 tracking and digital vaccine passports

As economies around the world work to overcome the COVID-19 pandemic and restart their economies, they face the challenge of how to reopen their borders and allow travel to resume while protecting their populations' health. In implementing careful risk-based approaches to border reopening, economies need the ability to reliably assess the health status of incoming travellers. Economies are implementing a range of COVID testing requirements for incoming travellers, prior-to-departure, on arrival, and post-arrival. As vaccines become widely available, many economies will require incoming travellers to show proof of vaccination.

One possible solution to safe international travel could be a vaccine passport, but the challenges of establishing and deploying such a system over multiple regions are not insignificant. Jason Li, from The Commons Project Foundation, presented on the CommonPass platform, a passport designed to ensure that only verifiable lab results and vaccination records from trusted sources are presented for the purposes of cross-border travel.

As COVID-19 outbreaks become more controlled, and rates of successful vaccinations rise, a key aspect of motivating people to travel is by ensuring that clusters of COVID-19 are managed with up-to-date information available on the risk of COVID-19 at tourism destinations, accommodation and on transport services. Digital technology can play a role in providing biosecurity information, through utilising geosynchronous location data on phones, to alert people if they have entered an area of risk. Mobile apps are also valuable in providing up-to-date communication systems to encourage potential travellers and the general public to trust the conditions for safe travel.

'The WHO's benchmark for a successful COVID-19 contact-tracing operation is to trace and quarantine 80% of close contacts within 3 days of a case being confirmed.'[48] Dyani Lewis' article in Nature[36] combined with the outputs of the World Health Organization[49] provide a detailed argument in favour of utilising digital tools for COVID-19 contract tracing, and the characteristics[50] these tools require to be successful. Digital tools offer potential as one part of a multipronged approach[51] to infection control. Digital apps and contract tracking systems may improve their privacy and individual security by taking advantage of blockchain technology if required. [52] & [53]

Economies that have used digitised contract tracing and reporting, where cultural and social conditions support the use of such systems, have, until recently, been highly successful in controlling COVID-19 cases and outbreaks. However, the growing dominance of the Delta variance 'is ripping around the world at a scorching pace, driving a new spike in cases'.[54] As case numbers grow in any economy, vaccination rates become another key tool to lessen the impact of COVID-19. This change in situation due to the Delta variant highlights the importance of consideration of implementing cross-border vaccine passports to enable wider tourism travel as vaccine uptake increases.

However, the design, implementation and expectations of such a system prove to be highly complex. Not the least being concerns around trust,[55] freedoms[56] and an acceptance by populations. With each economy having its own COVID-19 rules for entering its border, a successfully implemented cross-border passport would require the capacity to update

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[48] https://www.nature.com/articles/d41586-020-03518-4
[49] https://www.who.int/publications/i/item/WHO-2019-nCoV-Contact_Tracing-Tools_Annex-2020.1
[50] https://www.who.int/publications/i/item/contact-tracing-in-the-context-of-covid-19
[51] https://www.cdc.gov/coronavirus/2019-ncov/php/principles-contact-tracing.html
[52] https://blogs.oracle.com/blockchain/post/blockchain-solutions-in-covid-19-fight
[53] https://www.ibm.com/watson/health/resources/digital-health-pass-blockchain-explained/
[54] WHO Director-General's opening remarks at the media briefing on COVID-19 – 12 July 2021 - World | ReliefWeb
[55] COVID-19 vaccine passports: What you need to know (trust.org)
[56] Protests Erupt After Countries Mandate COVID Passports | The American Spectator | USA News and Politics

automatically in response to changing restrictions or requirements globally,[57] and also to accommodate each jurisdiction's individual security, privacy, and data use expectations.[58]

Implementing such a system would require increasingly sophisticated and more secure systems, machine identities,[59] and protocols. With this increasing sophistication comes comparatively increasing levels of risks to security and fraud. Additionally, statistics suggest that 'vaccination status does not offer clear or conclusive evidence about any individual's risk to others via transmission'.[60] This raises the fundamental question of what is it that a vaccine passport purports to claim about the holder? Vaccine passports cannot certify that a passport holder will not become infectious and transmit COVID-19, which some consider a benchmark for COVID-19 immunity.[61] Complexities also abound as to what constitutes a certified vaccination with some cruise companies currently 'refusing to accept mixed vaccines as proof of vaccination'.[62] Other considerations relate to vaccine inequality due to barriers driven by vaccine access and uptake[63] which raise the risk of new variants driving renewed waves of infection.

This brief overview of some of the complexities to be resolved for a successful vaccine passport rollout suggest that economies, 'will need to take a clear position outlining the specific purposes and use cases for which, if any, vaccine passports can be legally and legitimately used'.[64]

Jason Li, from The Commons Project Foundation,[65] presented on the challenges and importance of accelerating the movement of travellers as we move toward a post COVID-19 scenario. The Commons Project Foundation is a non-profit public trust building global digital services and platforms for the common good. Founded with support from The Rockefeller Foundation and headquartered in Switzerland, it was established to build and operate the shared platforms and services.

The Commons Project Foundation has developed the CommonPass[66] platform, designed to ensure that only verifiable lab results and vaccination records from trusted sources are presented for the purposes of cross-border travel. The framework includes a global registry of approved labs and vaccine sites, standard formats for lab results and vaccination records, and standard tools to make those results and records digitally accessible.

Economies are encouraged to continue to explore all systems and options for supporting cross-border travel with the consideration of technological solutions, vaccine passports and quarantine bubbles. Shared solutions across economies will increase positive conditions for the reestablishment of travel for tourism.

7.1   Recommendations regarding COVID-19 digital vaccination passports

11. The TWG could consider exploring a system for COVID-19 vaccination passports across APEC. An APEC-wide system may support the mitigation of COVID-19 risk due to travel, and play a part in the safe resumption of travel across economies.

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[57] Here's a look at COVID vaccine passport systems in use overseas - ABC News
[58] Commentary: Vaccine passports are within reach but important details must be worked out first - CNA (channelnewsasia.com)
[59] The hidden security threats of vaccine passports and digital voter IDs (information-age.com)
[60] What place should COVID-19 vaccine passports have in society? | Ada Lovelace Institute
[61] Twelve criteria for the development and use of COVID-19 vaccine passports (royalsociety.org)
[62] Mixed Vaccine Doses Create Travel Issues For Canadians | TravelPulse Canada
[63] Factors influencing COVID-19 vaccine uptake among minority ethnic groups (publishing.service.gov.uk)
[64] What place should COVID-19 vaccine passports have in society? | Ada Lovelace Institute
[65] https://thecommonsproject.org
[66] See Video 5, The Commons Project Innovation & transformation – APEC Digital Tourism – Australia 2021

Appendix I.   Report recommendations - Table 1

Promoting what success looks like

1. The TWG could consider working with tourism organisations to collate and promote success stories, learning activities and services that encourage and incentivise MSMEs to incorporate digital processes and techniques in their business. These could include the stories of MSMEs who have successfully integrated digital techniques into their business with positive outcomes. The trusted relationship between provincial tourism organisations and their local MSMEs can be leveraged to both collect positive examples of digitalisation, and also to distribute success stories and digital knowledge to tourism MSMEs. Stories of success can be shared both provincially and across borders to inspire digitalisation.

Digital risk mitigation

2. Member economies are encouraged to review the status of digital inclusion across their economies. Understanding the differing needs of their constituents and providing appropriate access to infrastructure, software support and education will facilitate a more successful uptake of digital business models and a more consistent digitalisation of services for tourism MSMEs.

Encourage partnerships

3. We encourage the TWG to work with member economy tourism departments to develop a range of policies that encourage and promote opportunities for MSMEs to expand successful digital partnerships. The TWG may encourage member economies to develop methods and programs to incentivise partnerships between MSMEs and larger businesses, organisations, educational facilities, and entrepreneurs. Outcomes to focus on could include new tourism products and services development through supporting Incubators for startups and incentivising partnerships between product developers and tourism MSMEs.

4. Projects, programs and policies could be developed by member economies to incentivise or motivate digital knowledge workers to become involved in the tourism sector and to encourage the growth of new models of tourism services.

5. The TWG might consider encouraging member economies to work together across borders to create and support programs which develop innovation in the tourism market to encourage the growth of new tourism business models.

Further research

6. The TWG could consider conducting further research to assess basic digital literacy and understanding by MSMEs of digital business methods, with a particular focus on the smallest of entities and those located in non-urban areas. An APEC-wide digital literacy survey could be conducted online to establish a digital baseline. This knowledge could then inform the development of a learning framework[67] focused on how best to upskill digital knowledge in MSMEs.

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[67] See Appendix II Digital literacy frameworks

Training

7. The TWG could explore supporting the development of a set of cross-border learning materials to build digital literacy knowledge in the smallest of MSME tourism businesses with a focus on remote learning methods for rural areas. Such a project could also be aligned with providing technical and/or financial support to MSMEs to upgrade their digital presence - especially around the key issue of making their websites mobile friendly (responsive design).

8. Member economies are encouraged to look at ways to incentivise MSMEs to understand the value of implementing digital change in their business models and processes. The TWG might consider advising economies to encourage incentives for training providers to build and deliver digital capability courses for tourism MSMEs, especially during the time of tourism downturn.

9. Member economies are encouraged to explore the Republic of Korea's policies designed to accelerate the digital transformation of tourism which include:
    - ℭ voucher systems to drive behaviour and investment in new forms of tourism businesses
    - ℭ technical consulting support for MSMEs
    - ℭ technology incubators for start-ups to support new product development
    - ℭ digital capacity building (training) for tourism operators.

Innovation promotion

10. The website, https://apec.digitaltourism.academy/ could be developed over time as a resource of articles, learning materials and support for tourism MSMEs shared across the APEC region.

Digital vaccination passports

11. The TWG could consider exploring a system for COVID-19 vaccination passports across APEC. An APEC-wide system may support the mitigation of COVID-19 risk due to travel, and play a part in the safe resumption of travel across economies.

Appendix II.   Workshops: speakers and presentations

See online link for presenters' CVs and presentations (as available):
https://apec.digitaltourism.academy/home/presenters/

Video recordings available for presentations

Online pages under https://apec.digitaltourism.academy/home/learningresources/ and
https://apec.digitaltourism.academy/home/presenters/ feature **edited video content** curated
under topic headings.

If you wish to view full **unedited** workshop sessions, they are available at this following link:
https://apec.digitaltourism.academy/home/report/workshops/

7.2   APEC Digital Workshop Series, 20-22 April 2021

Day 1

The COVID-19 Effect – Exploring the crisis, pivoting and planning for change

In this first session the scene is set for the three online sessions and a keynote presentation
summarising the current challenges for MSMEs tourism businesses is given. Panel
members are then invited to present on key questions including:

- what main complexities have arisen from COVID-19?
- what opportunities for pivoting their (or their customer's) businesses have they
  enabled or explored?
- what future opportunities do they think could be explored and supported by
  economies and industry organisations?

Keynote – Tourism post-Covid-19

Ms Jane Stacey   Head of Tourism Unit, OECD

Panel – MSME case studies – overview and discussion

Ms Liz Ward   Tourism Tribe, Australia
Ms Ellie Tonkin   Bundaberg Tourism, Australia
Ms Jan Hutton   Australian Tourism Data Warehouse, Australia
Mr Yock Song   Tribe, Singapore

Q&A session

Wrap up and introduction to day 2

Mr Stephen Joyce   Australia

Day 2

Digital Footprints – Managing how MSMEs appear in the digital world (benefits, barriers and beginnings)

In this session the focus is on what a successful digital presence looks like through various examples presented by successful online tourism businesses, including some examples of those who have transitioned during the pandemic. The concept of pivoting is explored – expanding a business into new markets or responding to untapped local opportunities by harnessing digital technologies.

Two masterclasses are offered along with a set of online materials to support these concepts for MSMEs.
Topics include:

- the ways to review customer experience and promote growth online
- what does a successful digital presence look like and require?
- examples of barriers and risks to these processes along with possible solutions.

Panel: Exploring digital footprints: What does this mean for tourism?

Ms Carly Clark   Splitters Farm, Australia
Ms Fabienne Wintle   Tourism Tribe, Australia
Ms Serena Eldridge   Grampians Tourism, Australia
Dr Madelene Blaer   Monash University, Australia

Q&A session

Masterclass: Digital presence – supported with online materials

Mr Michael Simonetti AndMine, Australia
Ms Liz Ward   Tourism Tribe, Australia

Day 3

Best practice, future challenges and pathways forward

In this final session we refocus on the bigger picture, taking in a high-level viewpoint from a range of economies and their supporting tourism bodies. What can we learn as a collective from this last year? What experiences can we share – both successes and difficulties – to support our tourist markets to survive COVID-19 and grow for future success?
Case studies, statistics, analytics and recovery indicators are reported at the economic level.
A Q&A is then followed by a masterclass and experience-sharing session. Presentations cover how to best enable digital inclusion, including a demystification of data privacy and security for MSMEs; how to enable the best support from economies and professional tourism bodies; what would enable a successful path forward for tourism?

Keynote speakers: Economy case studies

Mr Quach The Hai   Provincial Tourism, Ninh Binh Government, Viet Nam
Mr Jeremy Tan   Liquid Group, Singapore
Ms Deborah Park   Ministry of Culture, Sports and Tourism, Korea

Q&A session

Policy pathways to support innovation and digital solutions for MSMEs

Ms Jan Hutton   ATDW, Australia
Mr Jason Li   The Common's Project, Australia
Dr Chris Wilson   Swinburne University, Australia
Ms Nikita Ridgeway   Boss Lady Design and Communications, Australia

Appendix III.   Digital literacy frameworks

Building digital capability | Jisc
https://www.jisc.ac.uk/rd/projects/building-digital-capability

Developing digital literacies | Jisc
https://www.jisc.ac.uk/guides/developing-digital-literacies

Digital Literacy Skills Framework - Department of Education, Skills and Employment, Australian Government (dese.gov.au)
https://www.dese.gov.au/foundation-skills-your-future-program/resources/digital-literacy-skills-framework

A Global Framework to Measure Digital Literacy | UNESCO UIS
http://uis.unesco.org/en/blog/global-framework-measure-digital-literacy

ip51-global-framework-reference-digital-literacy-skills-2018-en.pdf (unesco.org)
http://uis.unesco.org/sites/default/files/documents/ip51-global-framework-reference-digital-literacy-skills-2018-en.pdf

The Digital Competence Framework 2.0 | EU Science Hub (europa.eu)
https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework

The National Framework for Digital Literacies in Initial Teacher Education (digitalliteracyframework.scot)
https://digitalliteracyframework.scot/

5 Dimensions Of Critical Digital Literacy: A Framework (teachthought.com)
https://www.teachthought.com/literacy/5-dimensions-of-critical-digital-literacy/