

Navigating the Environmental Impacts and Cultural Implications of Digitalisation in the Culture and Media sectors in ASEAN

Dr. Teh Lip Li



Executive Summary

Key Findings

- Digitalisation has unevenly transformed ASEAN's culture and media sectors, reflecting the region's broader socio-economic disparities.
- The environmental footprint of digital cultural initiatives is growing, requiring new approaches to ensure sustainability.
- While digital platforms enhance cultural preservation and access, the risk of cultural homogenisation challenges traditional practices and local content creation.
- Digital infrastructure and literacy gaps create uneven access to cultural resources, deepening existing inequalities.
- The socio-economic impact of digitalisation presents opportunities for new creative industries and risks for traditional cultural practitioners.
- Cross-border digital platforms enable unprecedented cultural

exchange while raising concerns about cultural sovereignty and data protection.

Policy Landscape

- ASEAN Member States (AMS) have varied policy approaches on digitalisation, preservation, and environmental sustainability in the culture and media sectors.
- Some AMS implement targeted initiatives to reduce the environmental impact of digital technologies in these sectors, while others remain in early stages of policy development.
- While current AMS policies address national priorities, there is potential to coordinate policies at the ASEAN level.

Challenges

- Balancing digital accessibility and infrastructure development against environmental sustainability.

- Managing the growing e-waste and energy consumption of digital cultural services.
- Enhancing the visibility and vitality of local cultural content alongside the dominant global digital platforms.
- Ensuring equitable access to digital cultural resources for ASEAN's diverse populations.
- Protecting data sovereignty and cultural intellectual property rights in digital spaces.
- Developing coherent cross-sector policies that address the interconnectedness of digitalisation, culture, and sustainability.

Policy Recommendations

1. Develop ASEAN policies for digital cultural preservation and promotion.
2. Encourage investment in digital infrastructure and literacy to

bridge the digital divide.

3. Implement comprehensive measures to mitigate the environmental impacts of digitalisation in the culture and media sectors.
4. Support local content creators and cultural practitioners in the digital transition.
5. Foster cross-border collaboration and knowledge sharing.
6. Develop adaptive regulatory frameworks for emerging digital challenges.
7. Promote sustainable approaches to digital cultural engagement.
8. Integrate environmental and cultural considerations into digital development.

These recommendations aim to foster a vibrant, sustainable, and culturally rich digital future for ASEAN's culture and media sectors, balancing innovation with environmental responsibility and cultural authenticity.

1 Introduction

Rapid digitalisation is transforming ASEAN's culture and media sectors. It offers unprecedented opportunities for cultural expression and media dissemination and raises significant problems. As AMS embrace digital technologies, the environmental footprint of the culture and media sectors is growing due to energy-intensive data centres, streaming services, and increasing electronic waste.

Meanwhile, the region's diverse cultures face the risk of homogenisation as global digital platforms gain prominence and overshadow local and indigenous modes of expressions.

This policy brief explores the interaction of digitalisation, environmental sustainability, and cultural preservation in ASEAN's culture and media sectors. It provides policymakers, cultural institutions, media companies, and other stakeholders with a perspective on the environmental impacts and cultural implications of digitalisation.

As ASEAN continues to prioritise its digital economy, ASEAN's culture and media sectors will need to balance competing development priorities to enhance cultural authenticity, diversity and environmental sustainability.

2 Current State and Policy Implications of Digitalisation

The rate of digitalisation of ASEAN's culture and media sectors varies across the region, reflecting individual national levels of economic and technological development. Digital transformation is reshaping the creation, distribution, and consumption of cultural content. It simultaneously raises concerns about environmental sustainability, cultural preservation, and equitable access. This section examines the current state, emerging trends, and implications of this transformation.

Digital Infrastructure and Access

The pace of digitalisation in the culture and media sectors relies on the digital infrastructure in the individual AMS. The ASEAN Digital Masterplan 2025 recognises substantial disparities in digital readiness in the region. While Singapore leads internet penetration in ASEAN at over 97%, countries like Cambodia, Lao PDR, and Myanmar have rates below 60% (Statista, 2024). This digital divide shapes how different communities participate in and benefit from digitalisation.

The uneven levels of digital infrastructure also directly impact culture and media digitalisation. AMS with more advanced digital ecosystems adapt more quickly to digital platforms for cultural expression and media consumption, providing more opportunities for cultural participation and access to cultural resources.

Data privacy and cultural sovereignty are critical concerns. As cultural content moves online, questions arise about data ownership, storage, and protection. Cultural institutions need to navigate complex issues of digital rights management while ensuring the security of sensitive cultural information. The cross-border

nature of digital platforms raises additional challenges on jurisdiction and sovereignty over cultural data, particularly for traditional knowledge.

The digital divide influences access to cultural resources and the ability to participate in the digital cultural economy. Rural areas, economically disadvantaged communities and older generations are at risk of being left behind. Further, the cultural narratives of less digitally advanced communities may be underrepresented in digital spaces, exacerbating existing socio-economic inequalities.

Digital literacy compounds these infrastructure disparities. Even in areas with adequate digital infrastructure, gaps in digital skills and knowledge prevent full participation in digital cultural spaces. Older populations and communities that traditionally rely on oral cultural transmission are more greatly affected. The rapid evolution of digital technology widens this gap, as keeping pace with technological change requires continuous learning and adaptation.

Financial barriers to digital participation present another challenge. The cost of devices, internet connectivity, and digital service subscriptions limit access to digital cultural resources, particularly in lower-income communities. This economic dimension of the digital divide risks creating a two-tiered cultural landscape, where access to digital cultural resources becomes a privilege to limited communities.

Policy Implications

These challenges signal the need for national and regional policy interventions. Policies must address physical infrastructure development alongside 'soft' infrastructure concerns like digital literacy, device accessibility, and economic barriers to participation. The transnational nature of digital cultural exchange suggests that regional coordination will enhance policy implementation. Further policies can consider the sustainability of digital infrastructure development to ensure that efforts to bridge the digital divide do not compromise cultural and environmental sustainability.

Environmental Dimensions of Digitalisation

Rapid digitalisation also presents many environmental challenges. The proliferation of data centres to support digital cultural platforms will grow as digital cultural consumption grows in ASEAN. The energy required by the facilities will rise along with the carbon footprint of digital cultural experiences. The streaming of cultural content, virtual exhibitions, and digital archives all require substantial computational resources, also contributing to energy consumption. The greatest impact will be in regions where energy production relies heavily on fossil fuels.

Further, the rapid replacement of digital devices contributes to e-waste. The increasing volume of discarded electronics presents a growing challenge for waste management and recycling systems, since many AMS lack comprehensive e-waste management infrastructure and policies.

However, digitalisation also offers opportunities to develop sustainable practices. Digital distribution of cultural content can reduce the need for physical production and transportation, potentially lowering overall carbon emissions. Virtual events and online exhibitions offer cultural experiences with less environmental impact than physical events.

Emerging technologies present opportunities and challenges for environmental sustainability. While technologies such as blockchain-based digital art platforms consume substantial energy, innovations in cloud computing and energy-efficient

data centres could reduce the environmental impact of digital cultural services. Energy-efficient devices and sustainable manufacturing practices could also help mitigate the e-waste challenge.

The adoption of sustainable digital practices varies significantly across the AMS. More economically developed nations are beginning to implement green computing initiatives and sustainable data centre practices. However, less developed countries often lack the resources and infrastructure to prioritise environmental considerations in their digital development. This will require regional cooperation and knowledge sharing to ensure environmentally sustainable digitalisation across ASEAN.

Policy Implications

The environmental dimension of cultural digitalisation requires a coordinated policy response to balance development with sustainability. Policymakers could consider frameworks that promote energy-efficient digital infrastructure, sustainable device lifecycle management, and the responsible consumption of digital cultural content. This could include developing standards for green data centres, implementing e-waste management programmes, or incentivising the adoption of environmentally sustainable digital practices across the culture and media sectors. Regional cooperation could encourage the AMS to share best practices and resources for sustainable digital development. Additionally, policies could encourage innovation in sustainable digital technologies and research on the environmental impact of digital cultural practices.

Cultural Heritage in the Digital Age

The digitalisation of culture heritage across ASEAN is transforming how communities preserve, share, and engage with their cultural legacies. For example, the National Museum of Singapore has pioneered immersive digital experiences, setting a benchmark for the region. The Viet Nam National Archive initiated a large-scale digitisation project to preserve historical documents to be accessed online. The National Library of Indonesia launched a digital initiative offering access to its collection of digital books and manuscripts. These initiatives demonstrate the potential for the improved preservation of and access to cultural heritage.

Further, innovative educational tools are emerging as powerful means of cultural transmission and learning. Interactive digital platforms, augmented reality (AR), and gamified learning experiences are transforming how cultural knowledge can be shared and absorbed. These tools are effective in engaging younger generations with traditional cultural content and in creating bridges between historical heritage and contemporary digital natives. Cultural education becomes more accessible and engaging through language learning applications incorporating cultural elements, virtual heritage sites, and interactive cultural storytelling platforms.

Digital technologies offer unprecedented opportunities for AMS to preserve and share ASEAN's cultural heritage. Digital archives, virtual museums, and online databases can safeguard cultural artifacts and traditions, making them accessible to a global audience. For instance, the digitisation of ancient manuscripts not only preserves fragile documents, but also allows researchers and the public to access them without the risk of damage. Virtual museum tours can provide immersive cultural experiences to people who may not be able to visit in person.

However, digital transformation can undermine cultural authenticity and diversity. For example, the dominance of global digital platforms challenges local cultural identities and expressions. Global streaming platforms like Netflix and Spotify have gained market share in ASEAN, showcasing local content alongside international offerings. While these platforms provide wide distribution for AMS-created content, they also intensify competition, potentially marginalising smaller, local content producers who cannot compete on the same scale. This contributes to the homogenisation of cultural content at the expense of local and indigenous cultural expression.

Further, the use of digital tools for language preservation, such as by developing mobile apps in indigenous languages, underscores the need to consider how digitalisation supports, rather than supplants, traditional cultural practices.

Finally, the preservation of intangible cultural heritage in digital formats presents unique challenges. While digital documentation can capture performances, rituals, and oral traditions, questions arise about the authenticity and completeness of digital representations. The question of how digital preservation efforts respect or alter cultural protocols and traditional knowledge systems is a key concern.

Policy Implications

The digitalisation of cultural heritage requires well designed policies that balance preservation, accessibility, and innovation. This includes establishing guidelines for digital cultural preservation, supporting local content creation, and ensuring that digital platforms respect cultural diversity. Policies should also address the long-term sustainability of digital archives, the protection of cultural intellectual

property rights, and the maintenance of cultural authenticity in digital formats. Regional cooperation can contribute to the development of shared standards for digital cultural preservation, the promotion of cross-cultural exchange, and the protection of local cultural expression.

Innovation and Creative Industries

Culture and media sector digitalisation is fostering new forms of creative expression and is transforming traditional creative industries in ASEAN, creating opportunities for economic growth while challenging existing cultural production and distribution models.

The rise of digital creative industries, such as video game development, digital animation, and online content creation contributes significantly to the ASEAN's digital economy. Malaysia and Singapore are positioning themselves as regional content creation hubs, creating new employment opportunities and attracting investment. Meanwhile, digital platforms are helping independent creators in AMS reach global audiences, fostering a more diverse and vibrant creative landscape.

Digital technologies enable innovative forms of cultural expression and audience engagement, such as augmented reality (AR) and virtual reality (VR) apps that offer immersive cultural experiences and new forms of participatory art and culture. Technology is creating new artistic possibilities while transforming how audiences interact with cultural content, such as virtual concerts and interactive museum experiences that redefine the boundaries between creators and consumers.

Creative professionals are thriving as social media platforms, online marketplaces reduced entry requirements, and digital collaboration reduce the barriers to entry, and enable more diverse voices to participate in the cultural economy. This benefits young creators and those from traditionally underrepresented communities.

However, digital transformation also presents challenges. The pace of change driving emerging technologies requires cultural practitioners and institutions to actively adapt to the developments. Physical book publishing, traditional performing arts, and other conventional cultural industries are struggling to keep pace with these developments. There is a risk of a widening economic disparities between those who can quickly adapt and those who cannot. The challenge for ASEAN is support traditional creative industries during the transition while continuing to foster innovation in new digital formats.

Another challenge is the monetisation of digital cultural content. While digital platforms offer broad reach, digital creators may struggle to generate sustainable income from their digital work. The dominance of global platforms often leads to unfavourable revenue-sharing models for local creators. Digital piracy and intellectual property protection pose additional challenges.

Rapid digital evolution requires continuous adaptation and skills development in the creative sector. There is a need for digital skills training and professional development programmes to help creative professionals to improve technical skills as well as skills in digital marketing, audience engagement, and intellectual property management.

Policy Implications

The digital transformation of creative industries requires policy support to foster innovation while protecting traditional cultural industries. Policy frameworks can provide support to develop digital skills, protect intellectual property rights, and ensure fair compensation for creators. This may include fostering digital capacity building, creating incentives for digital innovation in the creative sector, and developing mechanisms to support traditional creative industries during the digital transition. Regional cooperation can contribute to the creation of harmonised standards for digital creative industries and foster cross-border collaboration. Additionally, policies can address the need for sustainable funding models for digital creative projects and ensure equitable access to digital creative tools and platforms.

Cross-Cultural Exchange and Regional Integration

The digitalisation of the culture and media sector digitalisation is reshaping patterns of cultural exchange and regional integration across ASEAN.

Social media, online cultural platforms, and digital collaboration tools are enabling artists and cultural practitioners from different countries to share ideas, collaborate, and create new forms of cultural expression that blend diverse traditions. This increased connectivity has fostered development of new, uniquely ASEAN digital cultural products that reflect the region's diversity and burgeoning regional identity.

Easy access to digital platforms has democratised cultural exchange, allowing smaller organisations and individual practitioners to participate in regional and international dialogues. Virtual festivals, online exhibitions, and digital performances can reach audiences across ASEAN without the logistical and financial concerns associated with physical events. These developments benefit those from less economically developed areas.

Regional digital platforms are also emerging as important spaces. These platforms provide alternatives to global services, offering local content that better reflects regional cultural values and preferences. However, they face competition from well-resourced global platforms that have greater technological capabilities and larger user bases. The challenge lies in developing sustainable regional platforms that can compete globally while preserving ASEAN's cultural diversity.

The digital transformation also intensifies cultural interactions across national boundaries, raising questions about cultural resilience and identity. While increased cultural exchange can enrich local traditions and foster innovation, concerns arise about homogenisation and the dominance of more digitally advanced cultures. Further, the algorithmic curation of content on digital platforms favours more popular or commercialised cultural expressions over traditional or minority-created content.

Linguistic diversity creates further challenges. While digital translation tools and multilingual platforms can facilitate communication in ASEAN, the predominance of certain languages in digital spaces risks marginalising smaller language communities and their cultural expressions. Digital platforms can support and promote ASEAN's linguistic diversity.

Finally, digital technologies enables new forms of cultural documentation and facilitates cross-border sharing of traditional knowledge. Digital archives and databases can help communities share cultural practices and traditional knowledge while ensuring their control over sensitive cultural information. However the complexities of cultural intellectual property rights and the contradictions protection of traditional knowledge are an additional concern.

Policy Implications

Coordinated policy approaches at the national and regional levels can facilitate digital cultural exchange to promote cross-border cultural collaboration and protect cultural diversity and sovereignty. This could include establishing protocols for digital cultural exchange, developing regional digital platforms, and protecting cultural property in digital spaces. Regional cooperation can develop shared standards for digital cultural exchange and promoting balanced cultural flows in ASEAN. Additionally, policies can protect linguistic diversity in digital spaces, support the development of digital tools to facilitate cross-cultural communication, and preserve local languages and cultural expressions.

Socio-Economic Dimensions and Market Dynamics

The economic benefits of digitalisation are not evenly distributed in ASEAN's culture sector. Traditional practitioners and institutions often face challenges in adapting to digital business models. The initial costs of digital transformation (e.g., equipment, software, skills) are prohibitive for small organisations and individual artists. Economic marginalisation is a risk for those unable to participate.

Further, global digital platforms alter the market dynamics of the cultural sector. While platforms offer unprecedented reach and access, their business models may not adequately compensate local creators. Monopolistic behaviour by digital platforms create dependencies and reduce the bargaining power of local cultural producers, threatening the viability and sustainability of local cultural industries in a platform-dominated market.

Digital technologies also transform employment trends in the cultural sector, creating new roles in digital content creation, platform management, and digital marketing. However, workers in traditional cultural industries must develop new skills to remain competitive. The gig model employed by some digital cultural platforms also leads to precarious employment and uncertain income streams for cultural workers.

Finally, the economic impact of digitalisation extends beyond the cultural sector. Digital cultural industries can contribute to broader economic development with innovation, tourism promotion, and the creation of supporting service industries. Malaysia and Singapore have leveraged their digital cultural sectors to become creative hubs to attract international investment and talent.

The digitalisation of ASEAN's culture and media sectors has significant socio-economic implications. Traditional market structures, new economic opportunities have been created, and problems have emerged connected to equity and access in the digital space.

Policy Implications

The socio-economic dimensions of cultural digitalisation require policy interventions that promote inclusive economic growth and protect vulnerable stakeholders. This includes developing policy frameworks to support fair digital market practices, ensure equitable revenue distribution, and protect workers' rights in the digital cultural economy.

It is also important to regulate digital platforms, create support mechanisms for traditional cultural practitioners transitioning to digital formats, and develop digital skills training and capacity building programmes. Regional cooperation can contribute to the development of harmonised standards for digital cultural markets and fair competition. Further, policies should address sustainable funding models and economic support for cultural organisations adapting to the digital environment.

3 Policy Landscape in ASEAN

AMS responses to culture and media sector digitalisation reflect their differing cultural priorities, levels of economic development, and technological readiness. This section examines policy trends and effectiveness of policies in ASEAN; specific AMS initiatives that might be adapted are listed in the Appendix.

Overall Trends

Most AMS have developed digital economy masterplans or strategies that address culture and media sector digitalisation. These policies typically have focused on digital infrastructure development, cultural heritage preservation, and support for digital creative industries. The masterplans— that typically prioritise digital infrastructure development, cybersecurity, digital skills development, and innovation ecosystems—recognise the significance of digital transformation to drive economic growth and social development.

Exemplary AMS policies include Singapore's Smart Nation initiative and Digital Government Blueprint, used to create an advanced digital economy, while its Digital Readiness Blueprint ensured digital inclusion (Smart Nation and Digital Government Office, 2023). Singapore has further strengthened its policy framework with its National AI Strategy 2.0, that emphasises responsible AI development and innovation.

Meanwhile, Malaysia's digital transformation is guided by the MyDIGITAL blueprint to advance the nation's digital capabilities by 2030 (Economic Planning Unit, 2021) and its National Fourth Industrial Revolution Policy. The country has comprehensive strategies on digital government and cybersecurity.

Indonesia developed its Digital Roadmap for 2021-2024, incorporating the Making Indonesia 4.0 initiative and a National Digital Economy Framework (Ministry of National Development Planning, 2021), aiming to accelerate digital infrastructure development and foster a robust digital economy ecosystem.

Similarly, Thailand's Thailand 4.0 policy and Digital Thailand initiatives emphasised technological innovation and digital society development (Ministry of Digital Economy and Society, 2022).

Also noteworthy is Viet Nam's National Digital Transformation Programme, which defines strategies for e-government development and digital economic growth (Ministry of Information and Communications, 2022), and the Philippines' E-Government Master Plan 2022 and Digital Philippines Framework, which emphasises cloud computing adoption and cybersecurity enhancement (Department of Information and Communications Technology, 2023).

Other relevant masterplans initiate projects to digitise cultural heritage, including virtual museums, digital archives, and online cultural databases to preserve cultural assets and increase access for domestic and international audiences. Support for digital creative industries is another point of convergence, with several AMS implementing policies to foster digital animation, game development, and online content creation in order to create regional hubs for digital content creation.

Environmental considerations are another common concern. However, while some AMS are beginning to recognise the environmental impact of increased digitalisation, specific measures to address these concerns in the context of culture and media remain limited.

Policy Effectiveness

The effectiveness of individual AMS policies in managing the environmental and cultural aspects of digitalisation varies widely. The more economically developed AMS with advanced digital infrastructure tends to have more comprehensive policies balancing digital innovation with environmental considerations. However,

even in those AMS, the environmental sustainability in the cultural sector is a secondary concern.

A key challenge for policymakers is to close the digital divide in and between AMS. Urban areas generally benefit from culture and media digitalisation initiatives, exacerbating existing inequalities. This affects access to digital cultural resources and increases the environmental footprint of digital cultural consumption, particularly in urban centres.

While most AMS have policies to preserve cultural heritage through digitalisation, environmental sustainability for digital cultural initiatives remains a secondary concern. Policy frameworks rarely address the intense energy use of digital archives, virtual museums, streaming services, and data centres, as well as e-waste attributed to rapid device turnover. This omission can lead to larger carbon footprints for AMS as digitalisation progresses.

The transnational nature of digital platforms is another challenge. In ASEAN, most culture and media policies are national, rather than regional initiatives, which limits their potential in fostering cross-border cultural exchange or in addressing digital-related environmental challenges.

Further, policy development typically lags behind technology developments, particularly in emerging areas like AI for cultural production or blockchain use by digital art markets. This lag suggests that ASEAN and AMS will be less prepared to harness technological benefits or mitigate their related environmental risks in the cultural sphere. For instance, current cultural policies do not address the immense energy consumption required for blockchain technology in digital art markets.

While AMS policies aim to increase digital access to cultural resources, the environmental implication of widespread digital cultural consumption remains a neglected issue, as has analysis of how socio-economic disparities might affect digital cultural engagement. The widespread promotion of digitalisation alongside the neglect of social and environmental safeguards risks reinforcing existing cultural inequalities and increasing environmental effects on different socio-economic groups.

ASEAN can consider developing more comprehensive, implementable, and regionally coordinated approaches to address environmental sustainability in the context of cultural preservation. ASEAN policies can explicitly consider the environmental impacts of digital cultural initiatives, cross-border collaborations for sustainable digital practices, and equitable access to digital cultural resources across diverse socio-economic groups.

4 Policy Recommendations

The digitalisation of ASEAN's culture and media sectors requires coordinated policy responses to maximise opportunities, ensure environmental sustainability, and promote cultural preservation. This section presents policy recommendations; while the Appendix lists ASEAN and AMS policies that should be considered for adaptation and wider implementation.

4.1 Digital Infrastructure and Access

ASEAN can consider creating a ASEAN Digital Cultural Infrastructure Fund to provide assistance to the less-developed AMS to enhance digitalisation in their cultural institutions. ASEAN can also foster promote regional technical standards for cultural digitisation projects to ensure interoperability and accessibility. The creation of a shared cloud infrastructure for cultural heritage preservation would reduce costs and environmental impacts while promoting regional collaboration.

To narrow the digital cultural divide, AMS can implement digital literacy programmes for cultural practitioners, with a particular focus on those in rural and underserved areas. Establishing rural community digital cultural centres with hardware and internet connectivity would provide those communities with needed access points for digital cultural participation. Development of mobile-first cultural platforms should be prioritised to reach people with limited access to computers.

Policymakers should consider establishing ASEAN guidelines for data privacy and cultural sovereignty. AMS should be encouraged to establish clear protocols for handling sensitive cultural information in digital formats. Further, developing comprehensive frameworks for indigenous cultural intellectual property rights in digital spaces can enhance the protection of traditional knowledge.

4.2 Environmental Sustainability

Another priority for ASEAN is to ensure digital environmental sustainability by developing green digital infrastructure. AMS can require environmental impact assessment requirements for major cultural digitisation projects. Green certifica-

tion standards for cultural data centres could also help AMS promote sustainable practices, while also creating incentives for cultural institutions to use renewable energy sources and support long-term sustainability.

Digital waste management require systematic e-waste programmes designed specifically for cultural institutions. AMS can establish and update guidelines for sustainable hardware procurement, while ASEAN can develop regional targets to reduce the carbon footprint of digital cultural initiatives.

Sustainable digital practices can be promoted by developing comprehensive guidelines for energy-efficient digital cultural events and exhibitions. Standards for sustainable digital archiving practices may be established to ensure long-term preservation while ensuring sustainability. AMS can implement systems to monitor the environmental impact of digital cultural consumption.

4.3 Cultural Heritage Preservation

ASEAN can consider developing standards for the digital preservation of cultural heritage to ensure consistent and quality work. This may include a certification system for regional cultural archives and guidelines for preserving intangible cultural heritage in digital formats, to maintain cultural authenticity and context.

ASEAN should encourage AMS to develop and fund dedicated digital training programmes for traditional cultural practitioners. Digital documentation programmes for traditional practices should be developed in culturally sensitive and respectful ways. The establishment of regional or AMS mentorship schemes pairing traditional practitioners with digital experts could be encouraged to facilitate knowledge transfer while preserving cultural authenticity.

Further, ASEAN should encourage AMS to develop digital platforms that incorporate traditional teaching methods to enhance educational access to cultural heritage, and devise multilingual digital cultural resources to ensure broad accessibility across ASEAN's diverse linguistic landscape. Further, virtual reality (VR) programmes for cultural heritage sites can provide immersive educational experiences and reduce the physical impact on heritage sites.

4.4 Creative Industry and Innovation

ASEAN should foster digital creative ecosystems a through regional funding mechanism for startups and incubator programmes for emerging creative enterprises. The proposed ASEAN-wide platform can showcase digital cultural content, promote regional creative works, and support technological innovations.

Further, market development in the digital cultural sector requires fair pricing models for content. ASEAN can consider adopting standards for regional digital marketplaces to ensure the equitable treatment of cultural producers and protections mechanisms for local digital cultural industries to ensure their sustainability at the global scale.

Finally, ASEAN can consider implementing digital skills development programmes by standardising certification systems for cultural professionals and establishing regional training centres for digital cultural production. ASEAN can consider how to support or promote professional development programmes for cultural institution staff to ensure their ongoing adaptation to technological changes.

4.5 Cross-Cultural Exchange

Regional platforms for cultural exchange may be strengthened by creating an ASEAN Digital Cultural Exchange Platform. The establishment of a regional virtual festival network would facilitate cross-border cultural sharing, while cross-border digital collaboration programmes could promote cultural exchange and innovation.

ASEAN could help protect cultural diversity. It could encourage the AMS to establish content quotas for local cultural material on digital platforms, and to support minority language digital content creation. ASEAN can also establish guidelines for algorithmic cultural content promotion to prevent cultural homogenisation.

Further, ASEAN could enhance regional collaboration by creating an ASEAN Cultural Technology Network and regular regional forums on digital culture to enhance knowledge sharing and policy coordination. Separately, they can support cross-border cultural technology research programmes to address common challenges and opportunities.

4.6 Implementation Framework

ASEAN requires a coordinated approach to realise these recommendations. ASEAN could establish an ASEAN Digital Culture Task Force to engage in monitoring, evaluation, and regular policy reviews. Sustainable funding could be secured through the establishment of an ASEAN Digital Culture Fund, complemented by public-private partnership frameworks to diversify funding sources. This

financial structure would support the long-term implementation of digital cultural initiatives across the region.

Best practice databases and regular policy forums could also contribute to regional knowledge exchanges. This would enable the AMS to learn from each other's experiences. Collaborative research programmes could address common challenges and opportunities in digital cultural development.

The implementation of these ideas will hinge on strong regional cooperation, sustained commitment from AMS, and active engagement from cultural practitioners and communities. Regular monitoring and evaluation will ensure that implementation efforts effectively address cultural digitalisation challenges while maintaining environmental sustainability and cultural authenticity.

5 Conclusion

Culture and media sector digitalisation in ASEAN presents complexities that require a coordinated regional response. This policy brief explored the state of digitalisation across ASEAN, its environmental impacts, cultural implications, and policy context.

The varying pace of digital adoption by AMS reflects the different rates of economic and technological development. While some AMS are developing leading digital cultural initiatives, others are still working on basic digital infrastructure. Regional cooperation can help bridge the digital divide and ensure equitable access to digital cultural resources across the region.

Environmental sustainability is crucial. The energy demands of digital infrastructure and the growing e-waste problem pose significant challenges to ASEAN as it works to meet its environmental goals. Digitalisation offers opportunities for more sustainable practices in cultural preservation and dissemination. Environmental considerations should be integrated into cultural and media policies and practices.

The cultural implications of digitalisation are complex. While digital technologies

offer opportunities for ASEAN to preserve and share cultural heritage across the region, they risk contributing to cultural homogenisation and the erosion of traditional practices. Balancing the use of digital tools for cultural promotion against safeguarding the authenticity and diversity of ASEAN's cultural expressions is a significant challenge for policymakers and cultural practitioners.

ASEAN's policymakers do not currently focus on specific challenges of digitalisation in the culture and media sectors. Comprehensive, forward-looking policies could help AMS adapt to rapid technological changes while prioritising cultural preservation, environmental sustainability, and equitable access.

As ASEAN continues to navigate digital transformations, several priorities are key. Regionally coordinated policies can address digitalisation alongside the promotion and protection of regional cultures. Investment in digital infrastructure and literacy programs can bridge the digital divide and ensure inclusive access to digital cultural resources. At the same time, the region can implement measures to mitigate the environmental impact of digitalisation in the culture and media sectors. It is also important to support local content creators and cultural practitioners to leverage digital platforms while preserving the integrity of traditional cultural expressions. Efforts should be made to foster cross-border collaboration and knowledge sharing to harness the collective expertise of the region in addressing common challenges.

The emergence of AI raises new concerns about cultural appropriation. AI systems can incorporate elements of cultural traditions while altering their deeper significance or spiritual concerns. The ability of AI to replicate and cultural content threatens the authenticity of cultural expression while devaluing human-made art and creative work. While AI has the potential enhance cultural preservation through advanced documentation and replication of cultural artifacts, AI can also contribute to the loss of traditional craftsmanship and skills that have been transmitted for generations. Confronting these challenges will require thoughtful regulation and cultural preservation strategies that account for rapidly evolving technologies.

By addressing these priorities, ASEAN can work toward a future where digitalisation enriches rather than diminishes the cultural landscape, supports sustainable development, and benefits all its diverse communities. Ongoing dialogues, adaptive policymaking, and balancing technological innovation, cultural authenticity, and environmental responsibility will be key.

References

ASEAN Secretariat. (2021). ASEAN Digital Masterplan 2025. <https://asean.org/wp-content/uploads/2021/09/ASEAN-Digital-Masterplan-EDITED.pdf>

ASEAN. (2022). ASEAN Cultural Heritage Digital Archive.

Chuah, S. H. W., et al. (2022). Digitalisation in the cultural and creative industries: Opportunities and challenges in Southeast Asia. *Journal of Cultural Economics*, 46(2), 305-332.

Department of Information and Communications Technology. (2023). E-Government Master Plan 2022. Republic of the Philippines.

Economic Planning Unit. (2021). Malaysia Digital Economy Blueprint (MyDIGITAL). Government of Malaysia.

Government of Singapore. (2023). Arts and Culture Digital Roadmap. National Arts Council.

Government of Thailand. (2021). Digital Economy and Society Development Plan. Ministry of Digital Economy and Society.

International Telecommunication Union. (2023). Measuring digital development: Facts and figures 2023. ITU Publications.

Kumar, R., & Prabhakar, T. V. (2023). Environmental impact of digital cultural consumption in ASEAN countries. *Sustainability*, 15(4), 3421.

Lee, H. Y., & Tan, C. B. (2021). Digital cultural heritage preservation in Singapore: Policies and practices. *International Journal of Cultural Policy*, 27(4), 529-543.

Ministry of Communications and Information, Singapore. (2022). Singapore Green Plan 2030. <https://www.greenplan.gov.sg/>

Ministry of Digital Economy and Society. (2022). Digital Thailand initiative. Royal Thai Government.

Ministry of Information and Communications. (2022). National Digital

Transformation Programme. Socialist Republic of Viet Nam.

Ministry of National Development Planning. (2021). Digital Roadmap 2021-2024. Republic of Indonesia.

National Library of Indonesia. (2023). Digital Library Initiative Annual Report. Jakarta: NLI Press.

Nguyen, T. H., & Pham, L. H. (2022). Balancing tradition and innovation: Digital transformation in Viet Nam's cultural sector. *Asian Journal of Communication*, 32(3), 245-262.

Notley, T., (2019), The environmental costs of the global digital economy in Asia and the urgent need for better policy, *Media International Australia*, Vol 173(1), 125-141, <https://journals.sagepub.com/doi/epub/10.1177/1329878X19844022>

Philippines Department of Information and Communications Technology. (2022). National Digital Transformation Strategy 2022-2028.

Pollution Control Department, Thailand. (2023). Annual Report on E-waste Management in Thailand. Ministry of Natural Resources and Environment.

Smart Nation and Digital Government Office. (2023). Smart Nation and Digital Government Blueprint. Government of Singapore.

Statista. (2024). Digital media consumption in Southeast Asia. <https://www.statista.com/statistics/487965/internet-penetration-in-southeast-asian-countries/>

UNESCO. (2022). Reshaping policies for creativity – Addressing culture as a global public good. UNESCO Publishing.

Viet Nam Ministry of Culture, Sports and Tourism. (2021). National Strategy for the Development of Cultural Industries to 2020, vision 2030.

World Bank. (2021). The Digital Economy in Southeast Asia: Strengthening the Foundations for Future Growth. World Bank Group.

Appendix: AMS Policies and Initiatives Worth Evaluating for Broader Implementation

The following policies and initiatives, adapted by individual AMS or at the ASEAN level, address digitalisation in the culture and media sectors and may be considered for adaptation and potential implementation across the region.

Model AMS Policies:

- Brunei Darussalam's Digital Economy Masterplan 2025 and Cambodia's Digital Economy and Society Policy Framework 2021-2035 include provisions for digitalising cultural heritage and promoting digital creative industries.
- Indonesia's Digital Indonesia Roadmap 2021-2024 offers strategies for supporting digital creative industries in a diverse cultural landscape
- Lao PDR's National Digital Economy Development Strategy to 2030 focuses on digital cultural preservation and promotion.
- Malaysia's Digital Content Ecosystem (DICE) Policy aims to position the country as a leader in digital content creation, including culturally relevant media.
- Myanmar's Digital Economy Roadmap, despite facing implementation challenges, provides insights into mobile-first approaches for cultural education.
- The Philippines' Creative Industries Development Act supports digital creative industries and online cultural content creation, offering a model to promote national culture digitally.
- Singapore's Arts and Culture Digital Roadmap offers comprehensive strategy for building digital capabilities in the cultural sector.
- Thailand's Digital Economy and Society Development Plan outlines approaches for digital cultural preservation and promotion.
- Viet Nam's National Strategy for the Development of Cultural Industries focuses on developing digital cultural content and supporting creative entrepreneurs in the cultural sector.

Some of these policies include frameworks for digital cultural heritage preservation, mechanisms to develop sustainable digital infrastructure for cultural institutions, digital literacy programs for cultural practitioners, and green guidelines for digital cultural initiatives. Further, some AMS have models to promote digital creative

hubs and incubators, local digital cultural content, and digital cultural tourism that could be scaled or modified to suit the contexts of other AMS.

Model ASEAN policies and initiatives that can guide and complement individual efforts:

- The ASEAN Digital Masterplan 2025 offers guidelines for facilitating the exchange of digital cultural content across the region and proposes a common reference for digital competencies in the cultural and media sectors.
- The ASEAN Cultural Heritage Digital Archive initiative presents standardised protocols for digitising cultural artifacts, as well as a framework for protecting digital cultural assets while promoting access.
- The ASEAN Strategic Plan for Culture and Arts 2016-2025 outlines strategies for cultural cooperation and development, including the use of digital technologies.
- The ASEAN Declaration on Cultural Heritage provides a foundation for regional cooperation on cultural preservation that can be adapted and extended to the digital realm.

Regional frameworks can be adapted to create cross-border data flow systems for cultural content, develop regional digital skills frameworks for cultural and media professionals, and establish collaborative models for cross-country digital cultural initiatives. ASEAN has the opportunity to create guidelines to assess the impact of digitalisation on cultural heritage and develop a framework for regional financial cooperation in digital cultural preservation.

When adapting policies AMS and ASEAN should consider the varying levels of digital infrastructure and readiness and unique cultural contexts. Flexibility is necessary to accommodate different legal and regulatory environments. Regional cooperation should be leveraged to overcome resource constraints in individual countries.

By aligning national policies with these regional frameworks, AMS can work toward a more cohesive and sustainable approach to culture and media digitalisation. This would help harmonise approaches, facilitate resource sharing, and promote collective problem solving to address the environmental and cultural implications of digitalisation. This approach can help AMS navigate the ensuing challenges, maintain their unique cultural identities, and address local needs.

Editorial Committee of the ASCC Research and Development Platforms Programme

Advisor:

Chairperson:

Members:

Managing Editor:

Associate Editor:

Production Editors:

Dr. Kao Kim Hourn, Secretary-General of ASEAN

San Lwin, Deputy Secretary-General of ASEAN for ASEAN Socio-Cultural Community

Rodora T. Babaran, Director of Human Development Directorate

Ky-Anh Nguyen, Director of Sustainable Development Directorate

Kamal Mamat, Head of Education, Youth and Sports Division

Jennifer E. dela Rosa, Head of Health Division

Mega Irena, Head of Labour and Civil Service Division

Miguel Musngi, Head of Poverty Eradication and Gender Division

Jonathan Tan Ghee Tiong, Head of Culture and Information Division

Riyanti Djalante, Head of Disaster Management and Humanitarian Assistance

Vong Sok, Head of the Environment Division

Putsodary Tat, Head of ASCC Monitoring Division

Erica Paula Sioson, Senior Officer of ASCC Analysis Division

Ratnawati Kusuma Jaya, **Karina Oriza Herastuti**, Officers of ASCC Analysis Division

This policy brief is a publication of the ASEAN Socio-Cultural Community Department of the ASEAN Secretariat. The views expressed in this publication are those of the authors, and do not necessarily reflect the views of ASEAN, ASEAN Member States, the ASEAN Secretariat, or ASEAN Dialogue Partners. For more information about the ASCC Research and Development Platforms Programme contact the ASCC Analysis Division at ASCCAD@asean.org.