



Google data centre
in Dublin, Ireland.

7

Digitization of the Orange Economy

as a driver of sustainable development

ABSTRACT

Global trends such as the realignment of trade agreements, the digital revolution, and climate change have exposed the vulnerabilities of small island states to external economic shocks. Governments in these jurisdictions have responded with various efforts to diversify their economic base, but have struggled to identify new pathways to sustainable development. The adverse fiscal conditions in many of these territories have now prompted renewed interest in the potential of Indigenous



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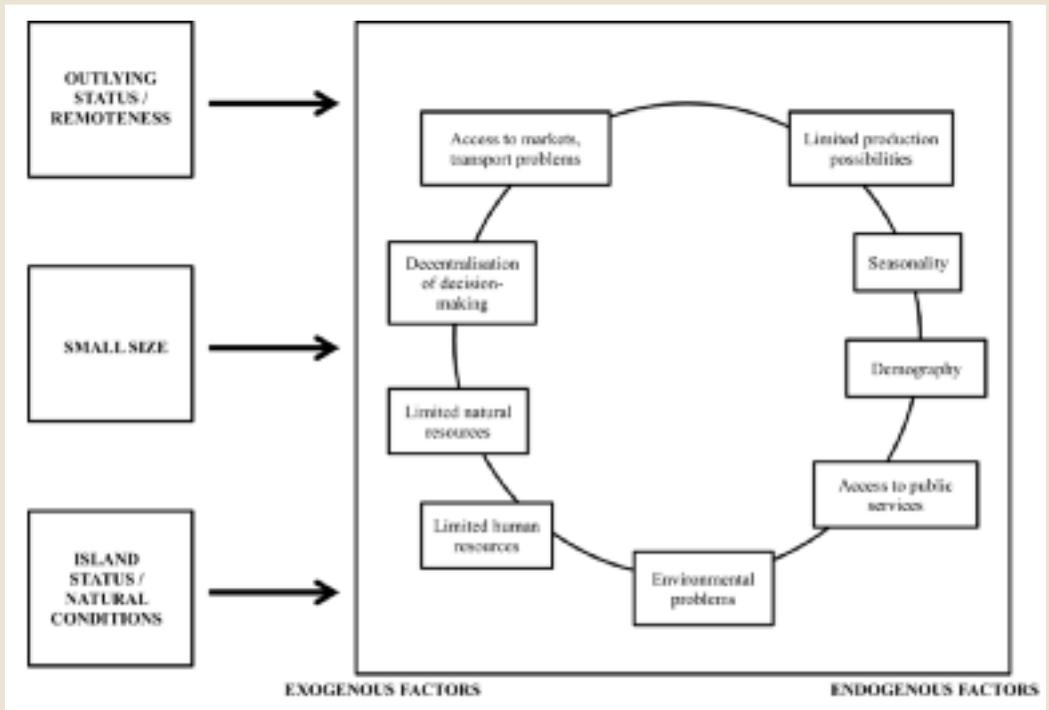
cultural and creative industries (the Orange Economy) to generate wealth and employment opportunities. While the potential benefits associated with the Orange Economy are now widely recognized, there is still an ongoing debate about how small island states can best take advantage of such opportunities. The objective of this chapter, therefore, is to discuss how the benefits provided by these emergent sectors can be optimized through the strategic application of information and communications technology (ICT). We argue that in order to achieve a competitive advantage in global marketplaces, Orange Economy stakeholders will need to fully unlock the transformative power of digital technologies. As part of this discussion, we outline the opportunities offered by ICT to transform industries participating within the Orange Economy by enhancing their position in global value chains. We also provide several case studies highlighting the challenges that are likely to be faced by firms in small island states pursuing such a strategy, alongside examples of countries that have successfully leveraged ICT to enhance their creative sectors. The chapter concludes with a set of policy recommendations for developing a new model of economic change and sustainable development based on a digitalized Orange Economy.

INTRODUCTION

Among the United Nation's classification of least developed countries (LDCs), many are isolated, relatively poor island nations, with small populations (UNDESA, 2010). For many mainland residents, their perception of these small island developing states (SIDS) has been shaped by stereotypical representations of exotic locales with beautiful beaches, unique flora, and images of friendly residents contained in tourist brochures. The reality that exists in these jurisdictions, however, is far more complex and often at odds with the iconic version of paradise that is sometimes portrayed.

SIDS are mainly located in three distinct geographic locations: the Pacific Ocean, Indian Ocean, and Caribbean Sea, and encompass islands with very diverse climatic, social, political, cultural, and physical characteristics and levels of economic development. One of the most notable characteristics of these nation states is their lack of economic diversification and economic vulnerability to exogenous shocks (Herbert, 2019). Economic activity within SIDS is typically concentrated in a few economic sectors—for example, natural resources and tourism—while their small size and domestic capacity means that they are unable to benefit from economies of scale. Due to their remoteness from economic markets, many SIDS operate at the periphery of the global economy and suffer from sluggish economic growth (Briguglio, 2016). A summary of the factors contributing to the economic challenges faced by SIDS is shown in Figure 7.1.

In response to these economic challenges, many national governments have attempted to diversify beyond their traditional economic bases with varying and often limited success. Moreover, the adoption of western conceptions of modernization and

FIGURE 7.1: Factors Affecting Economic Activity in SIDS

Source: Planistat Europe and Bradley Dunbar Associates Ltd. (2003).

development has at times been criticized for contributing to the erosion of Indigenous ways of life and cultural heritage which form the fabric of many islands' identity. Arguably, in many instances, the resiliency displayed by small island nations is more a testament to the resourcefulness of the islanders than the result of economic measures enacted by policy-makers.

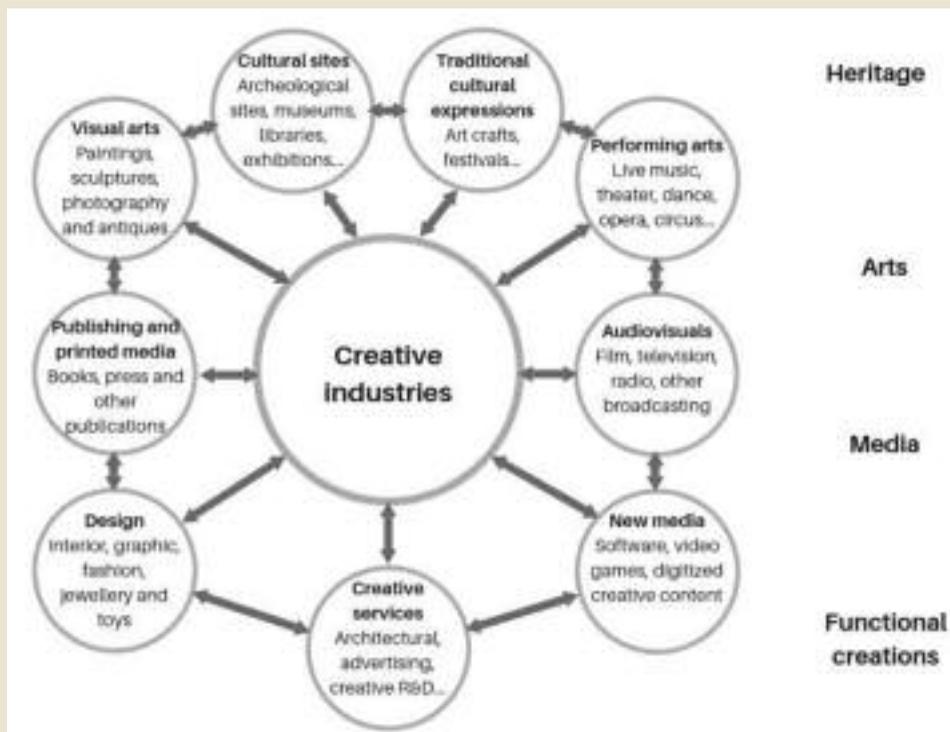
Sustainable development in SIDS thus requires systematic effort and innovative strategies designed to overcome capacity constraints. It is in this context that development of the creative sector (Orange Economy) is being proposed as an alternative model for economic diversification and growth by island states. This chapter thus outlines the opportunities offered by the Orange Economy for sustainable development and describes how information technology can be used to unlock the sector's full potential in transforming these societies.

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OPPORTUNITY PROVIDED BY THE ORANGE ECONOMY FOR ECONOMIC GROWTH

The Orange Economy, as defined by Howkins (2002), encompasses cultural industries such as fashion, music, and film, as well as professional business services like architecture, animation, and advertising. The common feature across these various sectors is that they are all focused on the production of intellectual property (see Figure 7.2). Until recently, the Orange Economy attracted minimal levels of attention in policy debates on strategies for sustainable development among small island states, but this is no longer the case.

FIGURE 7.2: UNCTAD Classification of the Creative Industries



Source: UNCTAD Creative Economy Report (2010).

While statistics on the creative economy are more complex to measure and estimate, this sector holds considerable potential for current and future growth, which represents an opportunity for small developing economies. From 2000 to 2010, for example, it is estimated that the Orange Economy grew annually more than four times that of manufacturing in many OECD and developing countries (UNCTAD, 2010). The creative sector also has proven to be remarkably resilient despite economic pressures stemming from the 2008 financial crisis (see Table 7.1).

TABLE 7.1: Creative Industries Export Performance for Selected Island Nations, 2005-2014

Value in Million US\$	Creative Goods		Creative Services	
	2005	2014	2010	2014
Japan	5,861.84	6,763.41	4,305.6 (2011)	9,002.8
Singapore	2,188.51	10,900.36	449.4	686
Indonesia	2,412.57	5,156.81	114.1	263.4
Brunei Darussalam	0	3.34	–	–
Philippines	775.83	915.45	1,971	3,236.5
Sri Lanka	159.97	217.51	265	627.9
Bahrain	25.84	548.38	–	–
Cyprus	30.44	39.08	84.8	138
United Kingdom	17,912.28	24,187.25	–	–
Ireland	2,170.61	1,329.66	983.5 (2012)	144,523.7
Malta	111.57	185.36	1.6	6.6
Cabo Verde	.08	.25	–	–
Madagascar	28.97	89.33	10.5	26.2 (2013)
Mauritius	76.34	89.99	30.7	98.1
New Zealand	367.05	367.02	353.1	845
Fiji	4.59	9.94	2.7	2.9
Cuba	15.76	–	–	–
Dominican Republic	545.82	312.78	–	–
Jamaica	4.52	5.98	38.4	41
Bahamas	0.79	4.45	–	–
Antigua and Barbuda	0.63	1.05	–	–
St. Lucia	2.94	17.58	–	–
Grenada	0.33	–	–	–
Barbados	10.62	19.20	12.6 (2008)	5 (2013)
TOTAL	32,707.90	51,164.18	8,623.0	159,503.10

Source: UNCTAD Creative Economy Outlook and Country Profiles (2018).

Pursuing a development strategy based on the Orange Economy seems particularly well suited to SIDS, which possess a historically rich and distinctive cultural heritage—from music, to art, to cuisine—attractive to global consumer audiences in search of authenticity. This naturally occurring asset can be monetized if businesses located in SIDS can be connected to global markets via digital channels. Additionally, although data for world trade in creative services are difficult to obtain, estimates suggest that creative services are likely to become a fast-growing subsector of the creative economy (Kuku, Quintana, Shelver, & Henderson, 2018). The latest statistics reveal that in developing economies, LDCs, and transition economies, for the period 2005-2018, the export of these digitally delivered services grew at a rate of roughly 10% annually, as compared to 6% on average, for all services exports (World Bank, 2017). This reflects the increasing digitalization of economies around the world, even among the less developed countries, to which category many SIDS belong.

THE DIGITAL REVOLUTION

has also lowered trade barriers and costs for businesses in small developing countries to produce and export such creative services.

There is thus a wide range of business services which can be expanded or developed to form the foundation of national economic diversification strategies.

Moreover, the rise of the digital economy has spurred a shift from the production of creative goods to online delivery of creative services. The digital revolution has also lowered trade barriers and costs for businesses in small developing countries to produce and export such creative services. In the music industry, for example, the production of physical CDs has transitioned to online streaming on demand: a creative service. There is thus a wide range of business services which can be expanded or developed to form the foundation of national economic diversification strategies.

Digital disruption is therefore a key trend influencing the future of the creative economy, especially in developing economies (Korres, Kourliouros, & Michailidis, 2017). If channeled positively, these disruptions can allow the Orange Economy to serve as a catalyst for change and economic development in SIDS that have historically been at a competitive disadvantage in global trade. The adoption or even adaptation of digital technologies thus holds much promise for developing sustainable economic activities that are appropriate for developing country contexts.

APPLYING ICT TO UNLOCK THE POTENTIAL OF THE ORANGE ECONOMY

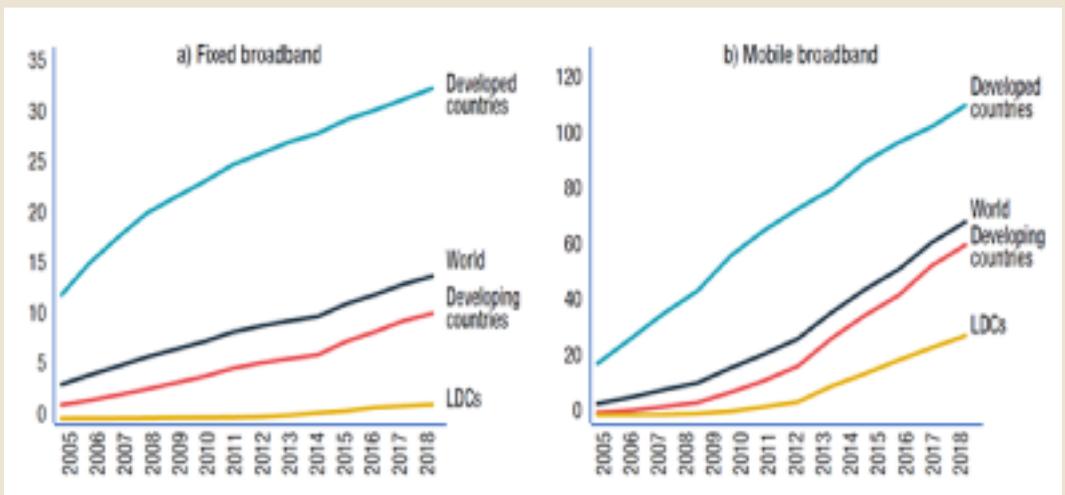
The advent of the digital revolution has significantly transformed the manner in which creative content is produced, distributed, and consumed. The most obvious example of this trend is the music industry, which has been transformed through digital

production, distribution, and consumption. Digital channels including streaming and social media platforms, as well as the digitalization of services, mean that there is potential for a substantial expansion in creative economy exports from SIDS. The development of a digital ecosystem can reduce transaction costs and create opportunities for SMEs in remote island states to enter new global markets and overcome institutional voids that typically exist in small, open, developing economies. This can lead to an increase in export revenue and enhance the competitiveness of island economies.

The intersection of products, services, and digital technologies is becoming increasingly complex and disruptive. The penetration of mobile broadband in developing countries is particularly noteworthy and holds great potential for empowering communities in remote and rural regions who may lack physical access to global markets (see Figure 7.3). Traditionally, the export of physical creative products from island states required securing international distributors and significant investment capital to finance high legal, marketing, and distribution costs. The blurring of the borders between and among information, media, creative content, and digital networks has facilitated the rapid global dissemination of creative content. It is thus now possible for digital creative exports to reach international markets from inception, creating new opportunities for smaller economies and enabling rapid growth.

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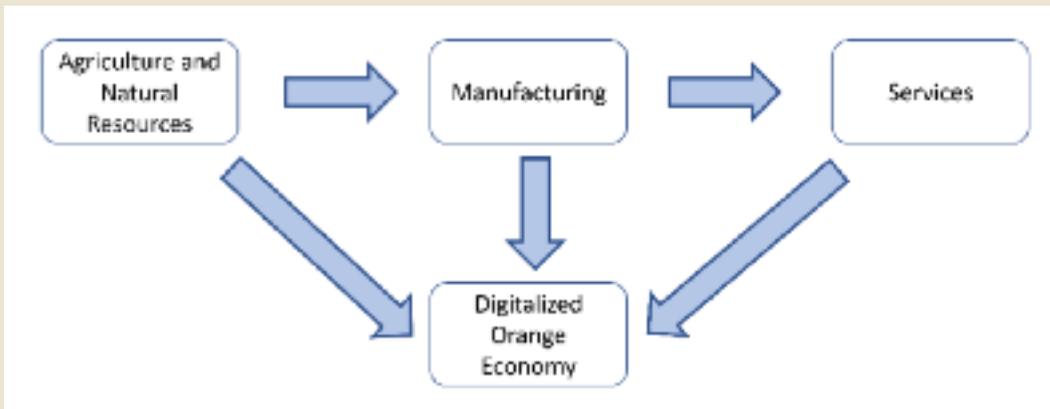
FIGURE 7.3: Global Broadband Penetration (per 100 people), 2005-2018



Source: UNCTAD, based on ICT Statistics database (<https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>).

The symbiosis between the creative and digital worlds should come as no surprise. The internet has not only become an increasingly important access portal for content but is also able to transform creative output into profit (Hartley, Wen, & Li, 2015). As digital connectivity increases and draws global populations closer together, the demand for creative goods and services is likely to increase. Small developing economies with the ability to efficiently produce and distribute creative content using these technologies possess the potential to upgrade their position in global value chains and diversify their economy away from non-renewable, low-value sources of revenue. Figure 7.4 illustrates the long-term change in dominant economic activity as a driver of overall economic growth that is projected.

FIGURE 7.4: Value Transformation through Digitilization of the Orange Economy



Source: UNCTAD, based on ICT Statistics database (<https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>).

While there is significant scope to jumpstart the creative economy by leveraging digital disruption and new technologies, it is critical that SIDS move quickly to develop creative ecosystems that can maximize the benefits provided by technological innovation. Case studies of five island states that have begun to successfully leverage the opportunities offered by ICT to develop their creative sectors are outlined in the next section.

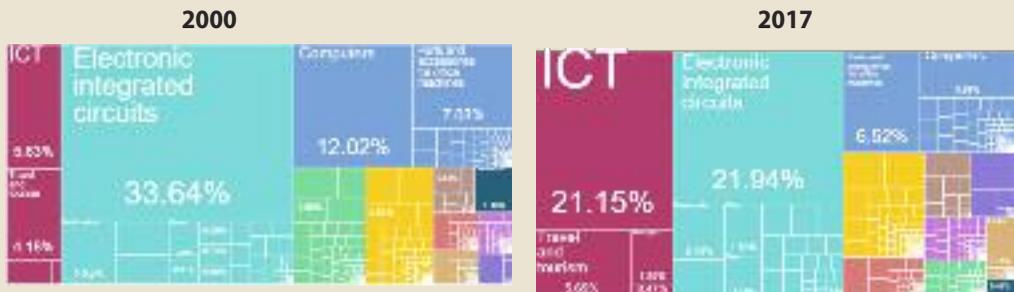
ICT TRANSFORMATION OF THE ORANGE ECONOMY: EXAMPLES

Philippines

The Philippines archipelago was able to transform its economy from an industrialized base in the 1970s to a service-oriented knowledge-based economy by making a bold shift toward the provision of ICT-enabled services (ICTES). Today, the country is considered one of the leading providers of ICT-enabled services. According to the KPMG IT Report (Dayoan & Benvenuto, 2018), the Philippines focuses on five key IT-enabled services: animation and game development, contact centres and business process outsourcing (BPO), ICT services, healthcare information management, and global in-house centres. Continuous investment in these sectors has paid rich dividends as revenue in the ICTES sector grew at a rate of 26% per annum from US\$1.5 billion in 2004 to US\$22.9 billion in 2016. Similarly, the sector's contribution to gross domestic product (GDP) rose from 2.7% in 2004 to 6.2% in 2016. Direct employment also increased at a rate of 25% per annum from 0.1 million in 2004 to 1.146 million in 2016. Combined with BPO services, contact centres that provide customer care and account management contribute the most toward revenues in the ICTES sector in the country, accounting for 56% (US\$12.8 billion) of revenues and 66% (751,200) of full-time employment in 2016. However, healthcare information management services, which includes medical transcription, electronic medical records (EMR), and telehealth, was the fastest-growing subsector with an impressive 71% annual growth rate in revenues and 18% per annum in employment.

Alongside the development of the IT-enabled services sector, the Philippine government has also undertaken a number of policies to ensure the preservation of its culture and heritage. Mechanisms have been put in place to promote the production of creative works and fund the development of artistic products (Agbisit, 2014). Moreover, the country's national development plan explicitly calls for the establishment of educational policies and programs to strengthen creativity and art education from the primary to secondary levels. Increased access to technology has also provided a cost-effective means for creative entrepreneurs to build networks and promote their work via referrals and social media.

FIGURE 7.5: Relative Importance of ICT Exports in Philippines, 2000 and 2017



Source: The Growth Lab at Harvard University. The Atlas of Economic Complexity. (<http://www.atlas.cid.harvard.edu>).

Ireland

The tale of economic development in Ireland is inextricably intertwined with the attraction of inbound foreign direct investment (FDI) from global ICT firms like IBM, Intel, and Microsoft, who were encouraged to move significant value-chain activities to the country. Later on, search giant Google established its European headquarters in Dublin in 2003. In order to attract FDI successfully, the government made significant strides in improving the ease of doing business by introducing macroeconomic reforms such as favourable tax incentives for high-tech foreign firms. However, initially there were issues with the shortage of skilled labour, which was overcome by improving education programs, combined with the return of Irish ex-pats working in the US.

FIGURE 7.6: Relative Importance of ICT Exports in Ireland, 2000 and 2017



Source: The Growth Lab at Harvard University. The Atlas of Economic Complexity. (<http://www.atlas.cid.harvard.edu>).

Today, Ireland boasts of being the heart of ICT in Europe, based on its ability to attract the strategic business activities of leading global ICT companies. The industry employs over 37,000 people and accounts for 37% of total exports valued at approximately €35 billion annually (IDA Ireland, 2019). The sector is home to the top five global software companies, nine of the top ten US technology companies, the top three global enterprise software companies, and four of the top five IT services companies.

A report published by the National University of Ireland, Galway (Collins, Murtagh, Breen, & Cummins, 2018), revealed that the creative sector has spawned a range of wider socioeconomic benefits and spillover effects. The most obvious is its positive impact on the perceptions of peripheral regions within Ireland as attractive places to live, work, and visit. This has rejuvenated peripheral communities that are largely rural and suffer from urban migration such as the counties in the Western Region of Ireland. Collaboration between and among creative-sector entrepreneurs has strengthened the local human resource capacity and fostered more close-knit communities that place value on Irish traditions and heritage.

Mauritius

Mauritius has successfully leveraged ICT to generate robust economic growth since independence. Between 1968 and 2017, real GDP grew 4.7% on average, experiencing significant productivity gains along the way as the country moved from an agro-based-factor-driven economy to a manufacturing and services hub, particularly IT-Enabled Services (ITES) and Business Process Outsourcing (BPO) services. Therefore, not surprisingly, the country is ranked first on the African Transformation Index (ATI). Some enabling factors that allowed Mauritius to achieve such transformative growth include the relative ease of doing business, advanced infrastructure, and a favourable regulatory environment governing the ICT sector.

Mauritius International Art Fair (MIAF), held in August 2019 at the Caudan Arts Centre in Port Louis, attracted 120 artists from 45 countries and was successful in positioning Mauritius as a cultural centre on the global map.



The ICT-enabled creative sector encompasses companies engaged in diverse activities including software development, call centre operations, business process outsourcing (BPO), IT-enabled services (ITES), web-enabled services, consultancy, and multimedia (National Computer Board, 2019). IT-Enabled Services and Business Process Outsourcing comprise the fastest growing and most dominant component of the Orange Economy, accounting for a little over 50% of the firms, contributing around 7% of GDP, employing approximately 18,000 people, and primarily servicing the US and European markets.

The evolution of the IT-Enabled Services sector into what it is today is a result of a series of carefully calculated decisions dating back to the early 2000s when the

FIGURE 7.7: Relative Importance of ICT Exports in Mauritius, 2000 and 2017



Source: The Growth Lab at Harvard University. The Atlas of Economic Complexity. (<http://www.atlas.cid.harvard.edu>).

government implemented significant legislative, regulatory, human capital, and infrastructure development initiatives. Priority measures included developing strong fibre-optic connectivity, liberalizing the telecommunications sector, establishing technology parks, and embedding ICT training throughout the education system. Additionally, regulatory and legislative reforms were introduced to achieve compliance with international standards for cybercrime, data security and usage, electronic transactions, and other critical areas of ICT. However, it should be noted that the development of the sector was not without challenges; chief among them was the lack of skilled labour and limited connectivity to the intercontinental submarine fibre-optic cables.

PRIORITY MEASURES

included developing strong fibre-optic connectivity, liberalizing the telecommunications sector, establishing technology parks, and embedding ICT training throughout the education system.

Generally, investment in the Orange Economy provides a balance between the country's rich and diverse cultural heritage and the contemporary digitally enhanced creative sectors that are the hallmark

of a modern society. Stakeholders in the creative sector have been able to rely on digital ecosystems to overcome the barriers of insularity and gain exposure for cultural output in global markets. The Mauritius International Art Fair (MIAF) held in August 2019, for instance, attracted 120 artists from 45 countries and was successful in positioning Mauritius as a cultural centre on the global map.

Jamaica

In the Caribbean, Jamaica has been a guiding beacon for its regional neighbours in the synergistic utilization of ICT and the Creative Sectors for growth. Traditionally, the country is renowned for its rich culture as demonstrated in the areas of music, dance, art, theatre, film, and, to a lesser extent, animation. The creative sector is a significant contributor to GDP and job creation. Between 2011 and 2016, the trade promotion company JAMPRO reported that over 12,000 jobs were created in the sector (JAMPRO, 2019). The animation subsector provides the nexus between the creative and ICT services sectors, particularly in the areas of video gaming, graphic design, software, web/mobile design, and application development.

FIGURE 7.8: Relative Importance of ICT Exports in Jamaica, 2000 and 2017



Source: The Growth Lab at Harvard University. The Atlas of Economic Complexity. (<http://www.atlas.cid.harvard.edu>).

Not surprisingly, the ITES/BPO sector has emerged as a formidable engine for growth in the country. The sector is comprised of approximately 60 companies including Conduent (formerly Xerox), Teleperformance, Vistaprint, Hinduja Global Solutions, and Sutherland Global Services (SGS), producing estimated revenue in the region of US\$590 million and accounting for approximately 35,000 jobs in the country. The companies on the island provide support for a range of industries including banking, insurance, healthcare, and gaming, among others. The main areas of support exist in animation, voice-driven services, business process outsourcing, knowledge process outsourcing, legal process outsourcing, and software development.

The attractiveness of the destination is driven by its close proximity to the US, cost efficiency, skilled human resources, and robust ICT infrastructure. Similar to other countries that have successfully developed this sector, the Jamaican government implemented several initiatives to attract foreign firms to invest in the sector, such as the introduction of Cyber Legislation and the introduction of BPO-specific training to upskill the labour force.

Technology has revolutionized the Jamaican creative sector, particularly in the area of music production, which has created new income streams and international exposure for local artists which were previously unavailable. The digitization of music has allowed many artists to become producers by relying on home studios and led to the production of an extensive Jamaican music catalogue. The synergy between the film and music industries, along with festivals, has positioned Jamaica as a mecca of Caribbean creativity and created opportunities for multiple stakeholders across the industry value chains. The engagement of artists at the community level has allowed new talents to emerge and promoted the skills upgrade of music and film producers.

TECHNOLOGY HAS REVOLUTIONIZED the Jamaican creative sector, particularly in the area of music production, which has created new income streams and international exposure for local artists which were previously unavailable.

Below: The secluded beach town of Port Antonio, Jamaica, has one of the most vibrant music scenes in the world, including a hotel where Drake, Harry Styles, and Florence and the Machine craft their hits.



New Zealand

New Zealand has derived significant benefits from the multiplicative effects of the infusion of ICT into its creative sector (games, music, books, film, and television). The creative industries add approximately NZ\$4 billion to GDP annually, approximately 80% of which is attributed to film, television, and games (Ministry for Culture and Heritage, 2019). Companies in the television sector have built a reputation producing content for popular American television networks. Similarly, game studios export 99% of their products to the US and Europe, with games being primarily sold digitally on iPhones, websites, and Android smart phones. Some of the games have even been ranked No. 1 on the US iPhone free games charts, which only serves to reinforce the country’s position as a creative, innovative nation.



New Zealand’s television companies have built a reputation in the American television networks for creative, innovative work.

FIGURE 7.9: Relative Importance of ICT Exports in New Zealand, 2000 and 2017



Source: The Growth Lab at Harvard University. The Atlas of Economic Complexity. (<http://www.atlas.cid.harvard.edu>).

New Zealand’s success in providing high value-added creative IT-enabled services stems from government policies that were geared toward attracting foreign direct investment in its digital and creative services sector. There was a strong emphasis placed on shared value and knowledge/technology transfer between international investors and local New Zealand companies. Additionally, the location is seen as attractive because of the high level of consumer sophistication, which makes it ideal for testing the uptake of new products.

OVERVIEW OF THE CONTRIBUTION OF THE ORANGE ECONOMY

The economies of the countries described in these case studies have shown noticeable improvement over the last decade as reflected in increases in national GDP (see Table 7.2). There have also been spillover effects that extend beyond the economic benefits as seen in the country rankings on the United Nations Human Development Index. The demand for skilled labour in IT-enabled service industries, for instance, has fueled investments in ICT training and spurred greater access to secondary and tertiary education. Moreover, investments in preserving and monetizing the cultural heritage that is unique to island states, aided by technological networks, have fostered new forms of artistic and creative expression on a global scale.

INVESTMENTS IN PRESERVING and monetizing the cultural heritage that is unique to island states, aided by technological networks, have fostered new forms of artistic and creative expression on a global scale.

While it is challenging to obtain data on the specific contribution of the creative industries to national development, the available evidence suggests that the sector has played a significant role. In the Philippines, for example, the creative sector is flourishing and has been recognized by the government as one of the seven industries expected to boost growth and investment in the country (Samodio, 2017). As a result of the sector's performance, the Philippine government has explicitly

committed to making the creative economy a national priority and the Creative Economy Roadmap that was developed in 2019 highlighted the contribution of the sector to GDP, employment, and entrepreneurial development.

Within the Caribbean region, it is estimated that the Jamaican cultural and creative sector has become an engine of growth, to the extent that it now contributes 5% to the country's GDP and provides employment to thousands of workers (Campbell, 2017). The increase in demand for Jamaican music, for example, is reflected in the huge popularity of Reggae festivals in European countries which has boosted international opportunities for Jamaican entertainers and strengthened a sense of Jamaican identity among the diaspora. It is clear that the cultural sector, and music in particular, has contributed significantly to positioning Jamaica on the global stage and developing strong equity in 'Brand Jamaica'.

As the examples provided in these country cases illustrate, creativity and innovation have an increasing influence on resilient economic growth. At the same time, however, although cultural and creative industries hold significant value, it is clear that small island states have thus far failed to fully capitalize on the sector's huge untapped potential. This is due to a myriad of factors, stemming from the vulnerabilities facing SIDS, which stymie developmental efforts. In order to unlock the sector's full potential, it is critical that policymakers recognize not only the opportunities available but also the challenges that they are likely to encounter in developing a new model of sustainable economic growth.

TABLE 7.2: National Socioeconomic Development Indicators

	2005	2010	2018
Philippines			
GDP per capita (current US\$)	1,195.00	2,130.00	2,951.00
Education: Secondary gross enrol. ratio (f/m per 100 pop.)	87.6 / 78.3	87.5 / 80.9	92.1 / 84.8
Education: Tertiary gross enrol. ratio (f/m per 100 pop.)	30.4 / 24.7	33.0 / 26.4	40.3 / 30.5
Individuals using the Internet (per 100 inhabitants)	5.4	25	55.5
Human Development Index score/rank	0.656/175	0.672/182	0.712/106
Ireland			
GDP per capita (current US\$)	50,237.00	47,969.00	64,497.00
Education: Secondary gross enrol. ratio (f/m per 100 pop.)	114.5 / 104.5	126.1 / 120.6	127.7 / 124.7
Education: Tertiary gross enrol. ratio (f/m per 100 pop.)	60.6 / 47.9	66.5 / 59.5	86.3 / 80.8
Individuals using the Internet (per 100 inhabitants)	41.6	69.8	82.2
Human Development Index score/rank	0.893/35	0.89/38	0.942/3
Mauritius			
GDP per capita (current US\$)	5,544.00	8,016.00	9,679.00
Education: Secondary gross enrol. ratio (f/m per 100 pop.)	87.6 / 89.7	91.3 / 87.2	96.0 / 90.8
Education: Tertiary gross enrol. ratio (f/m per 100 pop.)	21.7 / 21.0	36.9 / 30.5	43.8 / 34.0
Individuals using the Internet (per 100 inhabitants)	15.2	28.3	53.2
Human Development Index score/rank	0.713/147	0.748/141	0.796/66
Jamaica			
GDP per capita (current US\$)	4,097.00	4,692.00	4,879.00
Education: Secondary gross enrol. ratio (f/m per 100 pop.)	92.4 / 87.1	95.5 / 88.2	86.3 / 82.0
Education: Tertiary gross enrol. ratio (f/m per 100 pop.)	25.5 / 11.7	37.8 / 16.4	34.2 / 19.8
Individuals using the Internet (per 100 inhabitants)	12.8	27.7	45
Human Development Index score/rank	0.698/157	0.723/166	0.726/96

CHALLENGES IN ICT TRANSFORMATION OF THE ORANGE ECONOMY

Though the concept of creating synergies between ICT and the Orange Economy presents a huge opportunity for sustainable development of SIDS, it is obvious that many islands lack the technical, institutional, technological, and financial capacities to benefit to the fullest from their creative industries. The evidence derived from those countries that have adopted such a strategy reveals a number of key implementation challenges that need to be addressed in order to achieve economic diversification and sustain economic development. Several of these are outlined below.

Shortage of human capital

ICT cannot effectively be used to transform the Orange Economy into a growth sector and drive national competitiveness without skilled practitioners. As seen in the case

ICT CANNOT EFFECTIVELY BE used to transform the Orange Economy into a growth sector and drive national competitiveness without skilled practitioners.

of Mauritius, this issue is one of the main hurdles that small island states face when trying to develop IT-enabled services, and the growth of the creative sector in many countries has been stymied by this limiting factor. IT-enabled services such as call centres, for example, are labour-intensive and require a rich pool of human resources to operate effectively. While these types of jobs tend to require less-skilled workers, higher-value services, such as animation, require more specialized skills which may not be readily available. The transition away from a

manufacturing and agrarian economic base to professional services and IT-related jobs puts additional pressure on the labour market to supply a well-educated and technically competent workforce. This situation is exacerbated by the flight of human capital from SIDS to more developed countries in search of employment opportunities (Jaitman et al., 2017). The inability to provide an adequate workforce to perform the new jobs created in this sector threatens to undermine development of the creative sector.

Income inequality and low-value job creation

One of the criticisms of digital transformation of the creative sector is that the jobs created are low-value, unstable, and low-paying (Berg et al., 2018). While there may be some validity to this critique, particularly in the early phases of the transition towards the Orange Economy, it is also true that exposure to new digital technologies provides an avenue for access to continual learning and skills upgrades. This economic disruption provides an opportunity for workers to acquire more relevant skills over time, but is also likely to exacerbate income inequality between the social classes if appropriate social policies are not implemented.

Absence of robust legislation

Creative economy exporters are increasingly challenged by barriers in relation to online piracy and encounter difficulties regarding the protection of their intellectual property rights. This is particularly problematic for firms located in SIDS that are often very small and lack sufficient financial resources to successfully pursue enforcement of IP protections. As Geismar (2013) persuasively argues, claiming ownership of indigenous cultural heritage and intellectual property is critical for establishing economic sovereignty in small island states. Similar to the Jamaican experience, many small island states may still be in the formative stages of developing legal frameworks for the creative sectors to govern issues such as data protection and responsible usage. Other barriers encountered by creative economy exporters in global markets include the imposition of high fees for low-value transactions, local content requirements, and burdensome regulatory requirements, particularly regarding foreign ownership and licensing (Quartesan et al., 2007).

Weak ICT infrastructure

The IT-enabled creative sector has a high demand for quality physical infrastructure, particularly ICT connectivity which may not readily exist in small islands. This digital infrastructure is needed for the creation, distribution, and consumption of creative goods and services (Dabeedooal et al., 2019). However, infrastructure development is an expensive undertaking for small island states, which are traditionally afflicted by limited financial resources. This problem is particularly acute for SIDS located in the Pacific region, where territories are geographically scattered and isolated (Wardhani, Dugis, & Saad, 2018). Despite advantages resulting from the penetration of mobile broadband, the lack of robust digital networks constrains the ability of SIDS to develop and market their cultural goods and services in the digital environment.

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Laissez-faire work culture

The success of global firms operating in the IT-enabled sector is based on a high level of productivity and an industrious work ethic. Therefore, these firms tend to be attracted to destinations where these are already well-established pillars of the national culture (e.g., Philippines). Small island states that possess a culture with a more laissez-faire attitude toward work and where the workforce is not quality-

process-oriented will find it more difficult to attract firms to operate in the sector. This situation is compounded by the fact that stakeholders in the creative industries may be distrustful of state policies promoting sector disruption and may not fully appreciate the transformational power of ICT adoption, thus making it more difficult to implement (Alam & Noor, 2009).

Some of the policy levers that are needed to create a synergistic nexus between the creative and digital domains are outlined in the following section.

POLICY RECOMMENDATIONS FOR DIGITAL TRANSFORMATION OF THE ORANGE ECONOMY

While inadequate ICT infrastructure, labour shortages, and fiscal deficiencies remain key stumbling blocks for transforming and monetizing the creative sector, barriers to

implementation are less about technical capacity and more about the mobilization of governments in SIDS to institute structural change. The diversity of SIDS and their specific socioeconomic contexts, however, guarantees that there is no ‘one size fits all’ solution that is globally applicable. Policymakers therefore need to ensure that decisions regarding the pace and scope of transformation are aligned to the local resources that are available, as well as to the dominant cultural norms that influence economic activity in the jurisdiction.

Government policy in many island economies has struggled to keep pace with the rapidly evolving digital environment. The absence of robust policies that can guide economic diversification efforts for SIDS poses a challenge, but this can also be viewed as an opportunity

since island states provide an aseptic environment where strategies geared toward leveraging the potential of the Orange Economy can be applied and tested. As a result, countries seeking to enhance the global competitiveness and sustainability of their creative industries need to formulate a comprehensive policy framework to govern future growth of the sector.

The development of the creative sector starts with the articulation of a strong vision about the desirability and motivation for investing in the Orange Economy. Data collection and measurement of the creative sector’s economic impact on GDP and employment is a prerequisite for citizens to appreciate the potential of the Orange Economy to radically transform the economic structure of the country. The provision of a clear roadmap for developing this sector not only builds the population’s trust in the strategy but also promotes the value attached to creative enterprises.

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Changing the public's perception of the creative and cultural industries as only offering low-paying, labour-intensive jobs is perhaps the first hurdle that needs to be overcome. The legitimacy and profile of the creative industries can be raised by publicly rewarding creative talent and championing positive role models. It is important for policymakers to recognize that ad hoc interventions in the absence of the necessary ecosystem to support companies in the creative sector will yield little economic value to the country.

Firms in the IT-enabled creative sector require stable high-speed connectivity to the globe, and reliable power supplies, in order to produce and distribute creative content. To facilitate this, SIDS can promote the use of specific economic zones or cyber parks equipped with the resources dedicated to firms operating in the sector. A focus on rapidly expanding mobile digital platforms that are more easily accessed by rural and marginalized communities will assist businesses in these areas to penetrate both domestic and international markets. Several islands in the Pacific (Tonga, Samoa, Fiji, Federal States of Micronesia, Palau, and Kiribati) which have recognized the benefits of connectivity are already making significant investments in building a telecommunications backbone infrastructure through the deployment of fibre-optic submarine cables. Significant upgrades to the ICT infrastructure at a regional level thus afford a more cost-effective way to capitalize on the benefits available from employing digital technologies in the creative sector.

With data being the main traded commodity in the Orange Economy, a robust system for the protection of intellectual property (IP) needs to be developed and implemented to ensure that stakeholders benefit from the sale of their creative output. As Vega-Muñoz, Bustamante-Pavez, and Salazar-Sepúlveda (2019) note, such protection is a critical determinant of success for the sector. Cyber legislation reassures businesses and their clients that the sensitive information flows between them would not be compromised and used for ill-gotten gains. Additionally, there should be clear intellectual property rights legislation and enforcement to avoid—and, if necessary, resolve—any disputes in this area. Efforts in this area will require SIDS to engage fully with international institutions that are at the forefront of the fight against online piracy and copyright violation. The introduction and enforcement of IP and privacy laws should be high on the legislative agenda of SIDS if the creative sector is expected to attract content developers and investors.

A critical mass of content creators is needed in order to ensure the long-term sustainability of the sector. The more advanced value-added services require a skilled labour force with technical knowledge to competently deliver value. This calls for the

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incorporation of digital competencies in formal education and training systems, as well as effective ICT training and certification outside formal education systems, including the use of online tools for re-skilling and continuing professional development. The growing prevalence of online classes and blended learning targeted at working adults means that employees may no longer have to physically attend classes, with the attendant loss of productive time, or travel to foreign institutions in order to acquire the skills needed to participate in the digitally networked Orange Economy.

Emphasis should also be placed on ensuring that the education system is focused on equipping the labour force with the most highly demanded skill areas for this new economy. School curricula may need to be radically reformed to bring closer alignment between education institutions and businesses to ensure that individuals are provided with relevant STEM and creative skills. Small island states possessing a workforce with these capabilities will have a distinct advantage over their competitors. At the same

time, a carefully targeted system of public transfers will need to be implemented to offset the rise in income inequality that may arise between members of the workforce who have the relevant skills to operate in this new environment and those who lack such skills and need to be retrained.

ICT can also be used to combat the brain drain SIDS face by linking skilled personnel within the creative sector with counterparts residing within the international diaspora so that their skills can be leveraged as part of a knowledge network (Nurse, 2016). Members of the diaspora can also be provided with incentives to return from abroad, as was done in the case of Ireland, or encouraged

to contribute to a digitally connected skills bank. By removing geographic boundaries, ICT facilitates access to a wider pool of human resources than would otherwise be available locally for sustainable economic development.

In order to combat limitations produced by their small size in training a suitable workforce, SIDS can form partnerships with technology firms to expedite the required knowledge transfer needed to operate in the Orange Economy, while simultaneously lowering the upfront cost of education. For example, Jamaica has established a Microsoft Innovation Centre in collaboration with the main local university to stimulate the local software industry. The intent behind such initiatives is to accelerate knowledge transfer and augment the underlying talent of the local creative community. Such partnerships need to be carefully negotiated to ensure not only local access to the latest technology, but also the retention of locally produced intellectual property.

As previously noted, SIDS rarely possess significant financial resources, so the development of an innovative IT-enabled creative sector may be heavily reliant on

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foreign direct investment, at least initially. Financial support is particularly important for small businesses operating within the creative sector which typically have little investment capital. Mechanisms to incentivize private investments in such businesses, such as targeted tax relief, can be used to assist with the purchase of digital inputs to the creative process (e.g., telecom equipment), as well as subsidize the cost of transitioning to digital business models. New financial models built around public-private collaboration which target specific activities in the creative sector can assist creative enterprises in reducing their reliance on scarce public funds and transitioning towards commercial viability. Overtures also need to be made to multilateral lending agencies, such as the World Bank, to access cost-effective forms of financing that can assist in the economic diversification efforts of island states. In the absence of access to traditional banking instruments, SIDS could consider using blockchain technology to finance the growth of their local creative economies, bypassing some of the established sources of investment capital.

Policy interventions can also be targeted towards specific creative industries (e.g., music and animation) within the broader creative sector that are scalable and amenable to digitization in order to create distinctive creative clusters that can be the impetus for innovation and diversification. The development of creative clusters will also facilitate knowledge transfer within the creative industries and provide access to a deeper pool of resources. These clusters are important foundations for building a digitally enhanced creative industry ecosystem. SIDS also need to collaborate with more economically developed regional partners to enable access to new technology and spur research and development for emerging sectors of the Orange Economy. Global and regional partnerships are thus an important mechanism for enhancing the productive capacity of cash-strapped island economies.

CONCLUSION

One of the toughest challenges facing SIDS is to ensure rapid adoption and implementation of measures necessary to meet the development goals of small island nations. Historically, the Orange Economy has not been seen as a priority area by policymakers for national development compared to traditional economic activities, and whatever resources are available have typically been directed towards tangible heritage projects rather than creative services. In contrast to this developmental trajectory, we contend that small island states can leverage the transformative power of ICT to seize the opportunities provided by the Orange Economy for building a resilient economic future. The policies outlined in this chapter are thus aimed at developing a dynamic nexus between and among the digital, creative, and cultural sectors to ensure that ICT innovations are rapidly transformed into meaningful jobs and sustainable economic growth.

Transforming the cultural and creative sectors can help achieve inclusive economic

development since it employs people from all social classes. The sector's structure, primarily composed of locally engaged SMEs, also facilitates greater absorption into the formal economy of marginalized youth and women who play an important role in creative activities. The reliance on digital networks, knowledge, and creativity rather than heavy industrial infrastructure means that the Orange Economy is also a more environmentally sustainable model that is compatible with national objectives that aim at environmental preservation. It further facilitates sustainable development in peripheral and rural regions which possess limited financial resources and are negatively affected by the outward migration of human capital (Hartley, 2015). This is an important part of the Orange Economy's value compared with other sectors that is often overlooked.

The Orange Economy, however, offers no 'magic bullet' for achieving sustainable development, nor should it be viewed as a universal panacea for alleviating the effects of economic crises. While leveraging the untapped potential of the creative economy, we must also recognize its limits and the danger that such interventions may amplify economic inequality within countries. This is because infusing digital technologies throughout the creative sector increases the demand for skilled, better-educated workers which can marginalize poorer, less-educated workers (Mellander & Florida, 2014). A holistic approach is thus required, by which governments provide a social safety net to mitigate social inequality and minimize the fallout of economic transformation.

The application of disruptive digital technologies to unleash the potential of the Orange Economy also needs to be considered on a case-by-case basis, since some SIDS have more commercialized cultural industries and stronger institutional resources. Policymakers therefore need to resist the temptation to blindly mimic strategies that have been successful in other countries without full acknowledgement of local challenges.

The promotion of sustainable development in remote island states with high social and economic vulnerability therefore requires resilience, the development of mutual trust, and empowerment of stakeholders who share a long-term vision of the creative sector's potential. Ultimately, however, policymakers need to recognize that while external assistance may be necessary to build capacity within the creative and cultural sectors, the transformative potential of the Orange Economy lies in the hands and minds of the stakeholders responsible for generating value-added intellectual property. Particular care must be taken to ensure that these local voices are not overlooked or silenced as the policies to foster economic growth are being formulated. Deliberate action is therefore needed to ensure that the initial top-down policy initiatives are balanced with bottom-up participation by members of the creative community. In terms of sustainable development, however, the available evidence suggests that synergies between and among the creative, digital, and other indigenous industry sectors can support a move towards a more diversified economy and provide avenues for future sustainable growth.

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