The Pacific Islands face immense challenges from their economic geography

The Pacific Islands include some of the smallest and most remote countries in the world. The population of these islands ranges from 12,000 in Tuvalu and 20,000 in Palau to 849,000 in Fiji—and even the latter is very small by global standards. Whether measured by distance from major markets or transport costs to major centres, the Pacific Islands are also among the most remotely located countries in the world.¹

Economic geography poses an immense development challenge to the Pacific Islands. The World Development Report 2009 explored three key dimensions of economic geography—density, distance and division—and showed how the Pacific Islands face daunting challenges on each dimension. Their small size means they lack the economic density needed to take advantage of economies of scale and specialization. Their remoteness corresponds with large distances from the nearest centres of economic activity, resulting in high costs of trade that limit their scope for participation in the production networks that have benefited other parts of the developing world. And they face acute divisions from being sea-locked, divisions which severely restrict flows of goods, capital, people and ideas with the rest of the world.

For most of the Pacific Islands, it is not only the countries themselves that are sea-locked, but the many individual islands that make up the countries that are sea-locked as well. These countries face considerable divisions that impede product and factor flows even within their own borders. This fragmentation, in turn, means that their potential economic density is exaggerated by their already low population and GDP figures, because their people and economic activity are dispersed over numerous different islands rather than concentrated in one place.

One critical way in which these constraints of economic geography affect the development prospects of the Pacific Islands is their impact on production costs. Studies have shown that there is a substantial wedge between the cost of production in small, remote economies like the Pacific Islands, and the average cost of production in the rest of the world.² Enterprises in the Pacific Islands are thus only likely to be competitive in global markets when they can secure some kind of price premium for their products. Trade preferences used to provide such price premiums, but these preferences have increasingly been dismantled or eroded. Alternative sources of price premiums that small, remote economies can utilise to cover their high costs of production include those available in niche markets and natural resource markets.

Since many of the factors that contribute to small size and remoteness are beyond the control of policymakers, this wedge between production costs in the Pacific Islands and the rest of the world is likely to be permanent. While it cannot be eliminated, its extent can be mitigated by measures that reduce the disadvantages of economic geography faced by the Pacific Islands:

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by increasing their economic density, reducing their economic distance, or lessening the external and internal divisions they experience.

One especially promising means of mitigating these disadvantages of economic geography is the spread of new information and communications technologies (ICTs) in the Pacific. These have the potential to lower transaction costs among the fragmented populations of the Pacific Islands, reduce their economic distance to their nearest large markets, and alleviate the divisions that currently impede their integration at global, regional and local levels.

The global revolution in ICTs has enormous potential to benefit the Pacific Islands

The global revolution in ICTs that has transformed economic activity elsewhere in the world has been slow to reach the Pacific Islands. The spread of ICTs in the Pacific was initially impeded by restrictive market structures, relatively high capital and operating costs, and small market size—compounded by market fragmentation across different islands. But the recent dramatic fall in the unit cost of mobile networks, in particular, has alleviated the cost impediment and weakened previously-held policy rationales for monopolies. This has encouraged an increasing number of governments in the Pacific to revise their policies and legislation, terminate exclusive licences, and develop the new regulatory institutions needed for competition. The impact of these changes can be seen in rising rates of teledensity in the region, as indicated in the following table.

### Teledensity in Timor-Leste, Papua New Guinea and the Pacific Islands

<table>
<thead>
<tr>
<th></th>
<th>Population</th>
<th>GNIpc (US$)</th>
<th>&quot;Fixed Lines (Percent of Inhabitants)&quot;</th>
<th>&quot;Mobile Subscriptions (Percent of Inhabitants)&quot;</th>
<th>&quot;Internet Users (Percent of Inhabitants)&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiji</td>
<td>849,000</td>
<td>3,950</td>
<td>12.8</td>
<td>16.1</td>
<td>17.1</td>
</tr>
<tr>
<td>Kiribati</td>
<td>98,000</td>
<td>1,890</td>
<td>4.8</td>
<td>4.1</td>
<td>0.7</td>
</tr>
<tr>
<td>Marshall Islands</td>
<td>61,000</td>
<td>3,060</td>
<td>7.9</td>
<td>7.1</td>
<td>1.0</td>
</tr>
<tr>
<td>Micronesia, Fed. St.</td>
<td>111,000</td>
<td>2,220</td>
<td>11.0</td>
<td>7.9</td>
<td>11.6</td>
</tr>
<tr>
<td>Palau</td>
<td>20,000</td>
<td>8,940</td>
<td>38.7</td>
<td>34.5</td>
<td>19.5</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>6,732,000</td>
<td>1,180</td>
<td>1.1</td>
<td>0.9</td>
<td>0.8</td>
</tr>
<tr>
<td>Samoa</td>
<td>179,000</td>
<td>2,840</td>
<td>9.2</td>
<td>17.8</td>
<td>8.9</td>
</tr>
<tr>
<td>Solomon Islands</td>
<td>523,000</td>
<td>910</td>
<td>1.5</td>
<td>1.6</td>
<td>0.7</td>
</tr>
<tr>
<td>Timor-Leste</td>
<td>1,134,000</td>
<td>2,460</td>
<td>0.2</td>
<td>0.2</td>
<td>2.7</td>
</tr>
<tr>
<td>Tonga</td>
<td>104,000</td>
<td>3,260</td>
<td>12.9</td>
<td>29.8</td>
<td>16.4</td>
</tr>
<tr>
<td>Tuvalu</td>
<td>12,000</td>
<td>..</td>
<td>7.7</td>
<td>17.1</td>
<td>5.0</td>
</tr>
<tr>
<td>Vanuatu</td>
<td>240,000</td>
<td>2,620</td>
<td>3.2</td>
<td>3.0</td>
<td>4.8</td>
</tr>
</tbody>
</table>


As is evident from the data in the table, the most dramatic effect has been for mobile phones. This is an area where recent policy reforms have had the most striking impact on the cost, coverage and uptake of telecommunications services in the Pacific Islands. Competition in the provision of mobile phone services was introduced in Tonga in 2003, Samoa and Palau in 2006, Fiji and Vanuatu in 2008, and the Solomon Islands in 2010. In many cases, the cost of mobile services decreased markedly before competitors entered these markets, as incumbent operators prepared for competition, resulting in significant increases in teledensity in advance of the actual market liberalisation. The increases in mobile phone subscriptions in the recent years in the region are illustrated in the chart on the following page.

The impact of ICTs on small-scale tourism marketing in the Pacific Islands

Tourism is a leading sector in many Pacific Islands, and represents an industry with one of the greatest potentials to drive economic growth in these countries in future. But to be able to exploit the appeal of tropical island destinations, tourism
industries need better market access—including access to global distribution channels for tourism services—and effective marketing for their products. Investment in marketing channels is difficult when the major markets are remote and the scale of economic activity is small, posing a significant challenge for most tourism industries in the region and a particular impediment to the success of small-scale operators. The spread of a recent innovation in tourism marketing—which depends on a clever combination of the Internet and mobile phone access—is demonstrating just how effective ICTs can be in mitigating the disadvantages of economic geography in the Pacific.

This innovation—now the Worldhotel-link.com Limited (WHL) portal—began as part of an IFC project in Laos, Cambodia and Vietnam, aimed at helping small-scale tourism operators to overcome cost and skills barriers to access Internet marketing. In 2005, the IFC supported the launch of these portals in Fiji, Samoa and Vanuatu, with the Solomon Islands coming on board in 2008. WHL portals make information about local accommodation and tour providers available to independent travellers through global distribution channels. Behind each portal is a local franchise holder who collects and maintains the information about local providers and processes bookings—liaising between the customers abroad and the local providers. Thereby, local tourism operators have their products marketed globally on-line through a collective tool, at a fraction of the cost of doing so individually, and without needing the requisite skills, Internet connection, computer or even electricity supply. A mobile phone enables these tourism operators to link to the local franchise-holder to process the bookings coming through the portal.

The spectacular growth in the revenue flowing to local accommodation and tour providers through these WHL portals provides an indication of their success in reducing economic distance and mitigating the disadvantages facing small-scale tourist operations in the Pacific Islands. Over the last three years, albeit from a low base, the average annual growth rate of revenue flowing through the Fiji portal was over 90 percent, with 80 percent average annual growth for the Samoa portal and over 130 percent average annual growth for the Vanuatu portal. These growth figures cannot be explained by the increase in the number of operators on each portal alone.3 Thus, the data indicate not only that in aggregate these small-scale tourism sectors are obtaining more revenue through the portals, but also that on average the revenue of the individual businesses featured on the portals is rising each year. In the two years of operation of the Solomon Islands portal, revenue grew by some 770 percent, while the number of businesses featured on the site grew by just under 70 percent.

The benefits to local tourism industries from these portals have been significant. Focusing specifically on Vanuatu, the benefits of the WHL portal have been particularly noticeable for small-scale operators in rural areas and on outlying islands. Many of these operators do not have access to electricity, let alone a computer or a connection to the Internet. The advent of competition in the mobile phone industry has brought many tourism operators expanded network coverage and a reduced cost of accessing mobile communications. Using mobile phones—or in some cases, the nearest public phone—to link to an Internet marketing and booking system for their businesses has enabled them to promote their operations and connect with their markets across

3 Figures are not available for the number of operators on each portal at the beginning of the three-year period for which revenue figures are available, however the average annual growth rate of the number of operators on each portal can be estimated for the longer period since the launch of these portals. That growth rate is approximately 16 percent for Fiji, 9 percent for Samoa and 17 percent for Vanuatu.
the globe in ways they have not managed to do previously. In parallel, the capacity of transport links to these outer islands is increasing, facilitating the greater spread of tourist traffic in Vanuatu.

In Samoa, the transformation of business opportunities for small-scale tourism operators has also been stark. When the WHL portal was launched, only a handful of hotels at the top end of the market had websites, and most small operators did not actively market their businesses at all. In the first year of operation, the franchise-holder liaised with small-scale operators mainly via land line phones, which frequently involved it taking days for messages to be passed along to those operators who did not have a land line. Following the reform of the telecommunications policy in Samoa and the introduction of competition in the market in 2006, tourism operators were among those gaining access to affordable mobile phone services for the first time. Instead of a turnaround time of a several days, bookings could be turned around almost immediately. Through the collective tool of the WHL portal, small-scale operators can not only access their markets abroad, they can also benefit from the language and customer service skills of their interlocutors in these initial interactions with their potential customers.

The impact of ICTs on transaction costs in the Pacific Islands

The Pacific Islands face considerable divisions that impede flows of goods, capital, people and ideas within their own borders, let alone with other countries, as a result of the dispersion of their already small populations over large numbers of islands. Even on the same island, individual communities can be quite isolated from each other in instances where the terrain is mountainous and there is a dearth of connecting infrastructure. This fragmentation increases transaction costs within individual countries and reduces the extent to which the population can be aggregated into a single market. In the sphere of ICTs, such geographical fragmentation has significantly increased the cost of establishing and operating land line phone infrastructure, keeping it out of reach of most households in many Pacific Islands. However, the recent dramatic fall in the unit cost of mobile networks has made even small, remote and fragmented economies attractive new markets for telecommunications companies.

Vanuatu offers an interesting case study of this impact, with its population of approximately 240,000 people spread over some 65 different islands. During 2007, the government negotiated an end to the exclusive licence of the incumbent telecommunications provider, issuing a licence to a new mobile phone operator which entered the market in 2008. With improved network coverage and decreased costs, the number of mobile phone subscribers increased to around 126,500 by the end of the 2009 – nearly 53 percent of the population – compared to some 26,500 subscribers at the end of 2007 – only 11.5 percent of the population. By the end of 2009, mobile phones outnumbered land lines by 17.5 to 1.

Research conducted by the Pacific Institute of Public Policy shows the ways in which small and medium enterprises (SMEs) have made use of mobile phones, following the introduction of competition in the market.4 Previously, they had to rely on private or public land lines, tele-radios, sending written messages, passing oral messages through others, and face-to-face communication. For many of the SMEs studied, mobile phones have reduced the direct and opportunity costs of liaising with suppliers, arranging transport for people and cargo, communicating with customers, and arranging and checking on payment processes through intermediaries located in the vicinity of financial institutions.

The case studies of SMEs in rural areas and on outlying islands that retail products from wholesalers in the capital, Port Vila, show how mobiles have significantly shortened the ordering cycle and reduced information asymmetries in the ordering process. This impact has been particularly important for retailers who previously had to travel to use public land lines for their communications. The decreased direct and opportunity costs of communications have enabled these retailers to check on prices and maintain relationships with multiple wholesalers, improving the quality, variety and price of the products they order. Checking on product availability, placing orders and arranging for Port Vila-based relatives to make payments on their behalf, as well as monitoring the often infrequent and unreliable shipping schedules they depend on for their supplies, is now possible at a fraction of the previous cost and time.


The Role of Information and Communications Technology in Mitigating the Challenges of Economic Geography in the Pacific Islands
Equally, the case studies of SMEs that take products in the opposite direction—from producers in rural areas and outlying islands to major market centres—also show the significant impact of the spread of mobile phones. In the fisheries sector, entrepreneurs are now able to check on and command supply, while informing potential customers in the hotel and restaurant industries of availability and securing their orders in the timely manner required for this product. In the agriculture sector, entrepreneurs can now simultaneously serve as vendors at the marketplace and manage orders and supply to retail stores and restaurants. In the tourism sector, small retailers in Port Vila are better able to coordinate the supply of different handicrafts from craftspeople located on many different islands. Supply chains are still disrupted where people have to travel to obtain signal reception when needing to make or expecting to receive a call, but the expanding network coverage promises to address this problem.

The way forward: mobile money and e-government in the Pacific Islands

The next ‘big thing’ in the spread of ICTs in the Pacific Islands will be mobile money, an industry that has grown exponentially elsewhere in the developing world. Several Pacific Islands have already developed financial regulations that accommodate mobile money services, and pilots of this technology are now beginning. With small, geographically dispersed populations, the provision of financial services through bank branches or agencies is prohibitively costly in many rural and remote areas of these countries. The absence of access to such financial services significantly increases transaction costs as people have to generate work-around-solutions to this need.

Equally importantly, the distance of the Pacific Islands from centres of economic density sees many Pacific Islanders migrating for long periods to work in large countries abroad, sending back remittances on a regular basis—remittances that are the equivalent of much as 30 percent of GDP in some countries. The high cost of remitting funds has repeatedly been identified as a major detriment to the people and countries in the Pacific that are dependent on remittances. New entrants in the market for services that enable funds to be remitted abroad—in the form of mobile money providers—promises to reduce these costs, alleviating another source of division between the Pacific Islands and the rest of the world.

Another use of ICTs that is yet to be fully exploited in the Pacific Islands, and where governments will need to take the lead, is the provision of certain government services through electronic means. Health advisory services for people living a significant distance from health clinics, education services for those in remote areas, and general government front-end services that people otherwise have to travel to capital cities or major centres to access, have the potential to expand the reach of government services and decrease their cost—both to the government and to the users of these public services. Given the relatively high cost of providing public services to small, geographically dispersed populations in the Pacific, this application of ICTs has particular promise for the development prospects of the Pacific Islands.