Myths and facts of ISPs-OSP collaboration

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Central America and the Caribbean
The Caribbean is at the threshold of the Internet revolution

+DIGITAL +MOBILE

Data is only referred to main markets

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Internet Users</th>
<th>Internet Penetration</th>
<th>Mobile Internet Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominican Republic</td>
<td>10.7M</td>
<td>6M</td>
<td>57%</td>
<td>3.8M</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>3.4M</td>
<td>3M</td>
<td>83%</td>
<td>2.5M</td>
</tr>
<tr>
<td>Aruba</td>
<td>104K</td>
<td>92K</td>
<td>89%</td>
<td>66.5K</td>
</tr>
<tr>
<td>Bahamas</td>
<td>397K</td>
<td>333K</td>
<td>84%</td>
<td>200K</td>
</tr>
<tr>
<td>Jamaica</td>
<td>2.8M</td>
<td>1.5M</td>
<td>56%</td>
<td>1.2M</td>
</tr>
<tr>
<td>Trinidad and Tobago</td>
<td>1.3M</td>
<td>950K</td>
<td>69%</td>
<td>841K</td>
</tr>
</tbody>
</table>

Aruba, Bahamas y Puerto Rico lead on internet penetration

Dominican Republic, Puerto Rico and Jamaica are the countries with most Internet users

Source: Users and Internet penetration: We are social 2017 - Population: World Bank 2017 - Mobile Internet: GSMA Intelligence 2017
There is room for improved collaboration between ISPs and OSPs
Myth #1: OSPs do not contribute to local economies
FACT: OSPs generate significant economic activity and value

- **10 percent increase** in usage of Internet applications has added on average **USD 5.6 trillion** in global GDP (Source: WIK, 2017)

- SMEs that have adopted web technologies in developing countries have increased revenue, lower costs, increased productivity and created jobs (Source: BCG, 2012)

- The app economy has created more than **600k jobs** in Argentina, Brazil, Colombia and Mexico (Source: PPI)

- Mobile content and application providers have contributed with **USD 5 billions** in the region in 2013 (Source: GSMA)

- There are over **5,000 tecnolatinas** in LatAm, 9 of them are worth over USD 1B ("unicorns"), 123 of them are worth USD 25M (Source: NXTPLabs)
Myth #2: OSPs do not invest in infrastructure
FACT: OSPs invest billions to bring their services to ISPs front doors

- **$100bn invested** by OSPs globally between 2011 and 2014 in physical fabric of the web (source: Analysis Mason, 2014)

- Google invested **$30bn** in the last three years in infrastructure to improve performance for users and reduce costs for operators

- **15 Data Centers** globally

- Backbone network to link datacenters and can exchange our traffic, also known as “peering”

- Google Global Cache to ISPs - these are small numbers of Google servers that cache popular static content like YouTube videos, very close to users.

- The Google network is in **30+ countries** and the Google Global Cache is in **190+ territories**
Google Network

The largest cloud network, comprised of more than 100 points of presence
Myth #3: OSPs and ISPs compete in a zero sum game
FACT: Partnerships are driving great value for consumers and both players

- Mobile data revenue grew at an annual average rate of 34% between 2010-2014, driven by demand for access to applications on the move (Source: CCIA, 2016)

- In Indonesia, online content and applications drove over USD $6.6 billion in economic value for consumers and telecom operators (Source: Analysis Mason, 2015)

- Operators in Africa recorded data traffic growth of more than 50% in 2015. Data revenue as a share of total revenue is rising, reaching 15% on average (Source: GSMA, 2016)

- In Thailand, greater use of online video services increased consumers’ willingness to upgrade to fiber-to-the-home (FTTH) broadband services
Areas of collaboration: Infrastructure
Google Station

Map of Mexico showing locations of Google Station points.

Locations marked with blue icons indicate Google Station coverage areas.
Areas of collaboration: Payments

Direct carrier billing is the easiest and fastest way to get user’s favorite entertainment on Google Play.

There are over 100 Direct Carrier Billing telecoms operator partners.

Projected carrier billing market of USD 24.7bn by 2019 (Source: Ovum, April 2015)
Areas of collaboration: Rich Communication Services
Areas of collaboration: Disaster Relief
Areas of collaboration: many more

Augmented / Virtual Reality
Connect with the future of immersive and innovative experiences for users.

Internet of Things
Enable powerful and secure connectivity across everyday devices.

Carrier Messaging
Partner to bring the next generation of carrier messaging to the world.

Digital Marketing
Reach new customers and serve existing customers better, creating more impactful moments.

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Many thanks

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