GMEI 2017
Global Mobile Engagement Index

February 2017
This first edition of GSMA’s Global Mobile Engagement Index, GMEI 2017, reflects the importance of providing industry thought-leaders with innovative perspectives on mobile uptake measurements.

The fourth industrial revolution we are entering is shaping a future where mobile innovation will contribute even more to people’s lifestyles and the development of adjacent industries. With 5 billion people actively using over 7 billion mobile connections worldwide, there is a growing need to measure mobile user engagement levels and identify future industry growth opportunities.

Consumer behaviour is continuing to change as mobile devices get smarter, digital services grow richer and societies become more connected. On average 39% of smartphone owners already use their devices to look for jobs and access services that help to improve their health or support their education or that of their children. In the near future, mobile technology will transform the way we interact with devices and services for identity, health, home automation and AI.

The Global Mobile Engagement Index is a unique industry tool to help understand these shifting trends and prepare for the next wave of transformation. GSMA Intelligence will endeavour to update this flagship research annually.

I hope the insights featured in this first GMEI edition help you swiftly understand how demand is changing to identify business growth opportunities.

Best regards,

Hyunmi Yang
Chief Strategy Officer
GSMA
Contents

1 Introduction 4
2 Methodology outline 5
3 Global trends summary 6
4 Regional trends summary 7
5 GMEI top 10 insights 8
6 GMEI data insights 9
7 GMEI Ranking 14
8 Five key market factors are powering mobile engagement 15
9 Tomorrow’s consumer will be more engaged in internet-based services 16

Appendix

i Consumer survey inputs: 29 mobile use cases were covered to build the index 18
ii Consumer segmentation: key characteristics 19
iii Consumer profiles vary by region 20
iv How is consumer behaviour going to change by region? 21
v The relationship between mobile engagement and data revenue can be asymmetric 22
vi Higher mobile engagement does not ensure faster data revenue growth 23
vii GMEI methodology 24

Note: Our GMEI supplementary data book which includes additional data insights is available in our online research archive here.
Introduction

Introducing a new indicator that offers a new perspective on mobile uptake measurements

The need for a new indicator

The mobile industry needs innovative performance measurements as we enter the fourth industrial revolution.

The Global Mobile Engagement Index (GMEI) builds on the legacy of traditional industry indicators (e.g. mobile penetration, connections); some of these are becoming obsolete as we move to a new phase of growth where data tariffs, converged services and multi-device ownership prevail.

GSMA Intelligence estimates that two thirds of the global population subscribe to mobile services, and over 60% of them are using the mobile internet. By 2020, mobile subscriber penetration is set to reach close to 90% in the developed world and 70% in the developing world - closing the gap against addressable population ceilings in both regions.

As most countries across both developed and developing regions show signs of mobile market saturation, industry indicators reflecting penetration levels are becoming less relevant to measure medium- to long-term growth opportunities.

Mobile is transforming people’s lives, and consumer habits will continue to change as mobile devices get smarter, services grow richer and societies become more connected. For instance, 39% on average of smartphone users to date have used their device to look for jobs and access services that help to improve their health or support their education or that of their children.

Understanding what makes mobile users unique in any given country today, and how demand is going to evolve tomorrow, is key to anticipating future growth and challenges. This is the key objective behind the development of the Global Mobile Engagement Index.

The Index and segmentation in a nutshell

The GMEI measures the level of engagement of smartphone and non-smartphone users across a wide array of use cases and services. The higher the score the more likely consumers are to frequently engage in mobile services.

The Index has been built based on inputs from our annual global consumer survey, which was last conducted between June and August 2016 across 56 countries worldwide representing 80% of the global population.

It is based on the computation of two scores for each country surveyed:

- a usage score, i.e. the average number of mobile use cases adult phone owners engage in
- a frequency score, i.e. how often they engage in the use case on average.

Scores are calculated separately for smartphone and non-smartphone owners, which are in turn weighted based on the prevalence of these device types in each country (as a percentage of unique subscribers). GSMA Intelligence estimates that in 2016, over 70% of unique subscribers in the developed world are using a smartphone, against around 40% in the developing world where basic/feature phones are still prevalent.

A segmentation exercise further supports the Index as it helps to interpret the GMEI ranking and understand the differences in user engagement between countries.

Based on the usage patterns of the 56,000 survey respondents, four segments have been identified: the Aficionados, the Pragmatists, the Networkers and the Talkers.
Methodology outline

Global consumer survey
- 56 countries surveyed in 2016
- 1,000 adult respondents per country (18+)
- Smartphone and non-smartphone owners
- 29 mobile use cases monitored

Global Mobile Engagement Index
\[
\text{weighting} \times \sum \text{usage score} + \text{frequency score} \times \text{usage score} \times \text{frequency score} \times \text{unique subscriber %}
\]

Interpreting the score:
- The higher the score, the more engaged consumers are in mobile services.
- A score of zero would mean that consumers never use their mobile phones for any of the 29 mobile use cases covered in the survey.
- A score of 10 would mean that consumers engage in each of the 29 mobile use cases every day.

Global mobile consumer segmentation
- 56,000 respondents have been clustered into four distinct groups based on how often they engage in the 29 mobile use cases monitored in the survey.
- Aficionados
- Pragmatists
- Networkers
- Talkers
- Early adopters
- Early majority
- Late majority
- Laggards
- The segmentation helps to understand some of the differences in the GMEI country ranking.
Mobile operators and the journey towards more affluent mobile consumers

Globally, around half of mobile phone owners (47%) to date mainly use their device to simply place a voice call or send a text message. However, the prevalence of this consumer segment - labeled the ‘Talkers’ - is set to decrease over the coming years.

A mix of macro-level and market-related factors – some of which operators can control – are driving some of the differences and projections in mobile user engagement noted throughout this study:

1. Demographics
2. Mobile technology innovation
3. Mobile broadband affordability
4. Digital literacy
5. Local content availability

A transformation that takes time

We live in a ‘data first’ world and mobile consumers across the globe are are set to engage more frequently in services powered by the mobile internet - particularly in emerging markets where mobile is the only means to access the internet.

However, it is not necessarily because a country boasts a high mobile user engagement level that operator data revenues grow faster. Similarly, it takes time for the latest technology innovations to be adopted by the less tech-savvy consumers.

Our research highlights that while greater mobile user engagement might contribute to incremental value for mobile providers, this journey takes time and requires a sustainable market environment.
Regional mobile consumer trends summary

Towards more affluent mobile consumers, everywhere

Mobile consumer behaviour varies by region, and several markets - across developed and developing economies - are expected to witness a shift in their demographic and mobile consumer segmentation distribution in the coming years.

The regions that will see a substantial increase in the number of ‘early adopters’ are North America, Europe and South Asia. The US is currently the only market where the most highly-engaged mobile users (the ‘Aficionados’) are predominant.

The Aficionados will continue to be an exclusive group of very tech-savvy mobile consumers. Across most regions though, the more price-sensitive and less-engaged consumer groups such as the Pragmatists and Networkers tend to form the dominant mobile consumer segments.

Most emerging markets are rapidly transitioning to greater mobile internet engagement. By 2020, these countries will encompass over 80% of global unique subscribers and over half of global operator data revenue.

South Asia is projected to go through the most radical shift in mobile consumer behaviour in the coming years. By 2030, the proportion of consumers who mainly use their phones for voice and text is expected to decrease by 30 percentage points in the region. Along with East Asia/Pacific, South Asia is to witness a shift in its mobile consumer landscape in that its dominant mobile user segment will transition from the ‘Talkers’ in 2016 to the ‘Networkers’ in 2030. This increase in mobile user engagement will be mainly driven by smartphone and 4G adoption, mobile broadband affordability and the regionalisation of online content - particularly in India.

In Sub-Saharan Africa, the ‘Networkers’ will be even more dominant in the future, meaning that more mobile consumers will be more frequently using IP-comms, social networking and web browsing in the coming years. To date, price-sensitive demand in the region shows an appetite for mobile internet services despite lower income and lower smartphone adoption. Mobile users in several African markets (e.g. Tanzania, Kenya, Mozambique) boast a high engagement in financial services (e.g. mobile money, money transfer).

As smartphone adoption is a determinant factor that will drive greater user engagement in the region, it is important to maintain device affordability through appropriate taxation rates. Similarly, in several markets, we noted that poor digital literacy and a lack of local content can hinder mobile user engagement (e.g. Myanmar).

The mobile consumer landscape will remain stable in Latin America over the coming years, with highly-engaged users (Pragmatists) dominating regional consumer segmentation. Under this projection, mobile users in the region are expected to continue to frequently consume mobile internet services, including free mobile entertainment content (e.g. free online video streaming) and IP messaging apps. Brazilian mobile users have embraced mobile internet services and tech-savvy demand in the country will continue to lead developments in the region, placing it on par with other mature markets such as China. In both countries, IP comms has already dethroned traditional voice and text. In Latin America in particular, the challenge for industry players is to drive more affluent users to go beyond consuming free content on their mobile to fully reap the benefits of the mobile internet.
Global mobile user engagement – top 10 insights

1. There are more ‘early adopters’ in São Paulo than in Tokyo.

2. There are more ‘early adopters’ in São Paulo than in Tokyo.

3. The elders of tomorrow will be more connected than the elders of today.

4. The elders of tomorrow will be more connected than the elders of today.

5. Smartphone ownership is not the end game. Digital illiteracy and a lack of local content hinder mobile user engagement.

6. Smartphone ownership is not the end game. Digital illiteracy and a lack of local content hinder mobile user engagement.

7. Free content is king; everyone bows to mobile video streaming.

8. Free content is king; everyone bows to mobile video streaming.

9. Traditional SMS is still used more frequently than IP messages in several mature markets.

10. Traditional SMS is still used more frequently than IP messages in several mature markets.

11. The millennials are not always more engaged mobile users than their elders.

12. The millennials are not always more engaged mobile users than their elders.

13. Paying a bill or transferring money to a friend using a mobile phone is more frequent in Nairobi than it is in London, Paris or Zurich.

14. Paying a bill or transferring money to a friend using a mobile phone is more frequent in Nairobi than it is in London, Paris or Zurich.

15. Wearables appeal to all ages and genders, and are not just for mobile addicts.

16. Wearables appeal to all ages and genders, and are not just for mobile addicts.

17. Female mobile phone owners in India are 43% less likely to engage in mobile internet services than men.

18. Female mobile phone owners in India are 43% less likely to engage in mobile internet services than men.

19. Smartphone ownership is not the end game.

20. Smartphone ownership is not the end game.

21. Digital illiteracy and a lack of local content hinder mobile user engagement.

22. Digital illiteracy and a lack of local content hinder mobile user engagement.

23. Smartphones are more frequently used for online window-shopping than to generate actual purchases.

24. Smartphones are more frequently used for online window-shopping than to generate actual purchases.

25. Traditional SMS is still used more frequently than IP messages in several mature markets.

26. Traditional SMS is still used more frequently than IP messages in several mature markets.

27. The elders of tomorrow will be more connected than the elders of today.

28. The elders of tomorrow will be more connected than the elders of today.

29. Smartphone ownership is not the end game. Digital illiteracy and a lack of local content hinder mobile user engagement.

30. Smartphone ownership is not the end game. Digital illiteracy and a lack of local content hinder mobile user engagement.

31. Free content is king; everyone bows to mobile video streaming.

32. Free content is king; everyone bows to mobile video streaming.

33. Traditional SMS is still used more frequently than IP messages in several mature markets.

34. Traditional SMS is still used more frequently than IP messages in several mature markets.

35. The millennials are not always more engaged mobile users than their elders.

36. The millennials are not always more engaged mobile users than their elders.

37. Paying a bill or transferring money to a friend using a mobile phone is more frequent in Nairobi than it is in London, Paris or Zurich.

38. Paying a bill or transferring money to a friend using a mobile phone is more frequent in Nairobi than it is in London, Paris or Zurich.

39. Wearables appeal to all ages and genders, and are not just for mobile addicts.

40. Wearables appeal to all ages and genders, and are not just for mobile addicts.

41. Female mobile phone owners in India are 43% less likely to engage in mobile internet services than men.

42. Female mobile phone owners in India are 43% less likely to engage in mobile internet services than men.
Japan shows a lower mobile user engagement level than most developed countries, due to a lower adoption rate of smartphones and a greater prevalence of the 55+ population, which tend to be less engaged than younger Japanese consumers.

In contrast, Brazil has a similar ratio of smartphone adoption as Japan, but the prevalence of the ‘Aficionados’ (the most engaged and tech-savvy consumer group) is greater than in Japan (14% vs. 8% respectively).

There are more ‘early adopters’ in São Paulo than in Tokyo.

SMS is still used more frequently than WhatsApp in several mature markets.

In France and the US, only 28% and 41% of adult smartphone users respectively claim to be using IP messaging apps more than text. This behaviour is taking place in 11 of the 56 countries surveyed.

This is partly due to the fact that unlimited SMS in bundled tariffs was introduced long before IP messaging apps started to become popular. In France and the US, the vast majority of smartphone users claim to have subscribed to a tariff that offers ‘unlimited text’.

Countries where the use of email, IP messages and social networking is less frequent than voice & text

Source: GSMA Intelligence
The elders of tomorrow will be more connected than the elders of today.

Demographic projections towards 2050 show that as Millennial and Post-Millennial mobile users transition to older age bands, the prevalence of highly-engaged users will gradually increase in each market. Yet, while this presents an opportunity for mobile operators, the challenge remains to balance network investment and the monetisation of rising data traffic. For instance, in Europe, we forecast an increase of around 10 percentage points in the number of highly-engaged smartphone users by 2030.

The millennials are not always more engaged mobile users than their elders.

While the millennials are a prime long-term target for mobile operators, targeting demand from the Baby Boomers in the medium term is equally important as these users tend to embrace mobile technology and boast a greater purchasing power than younger generations. For instance, in South Korea, over a quarter of adult smartphone users are Baby Boomers (aged between 51 and 69 today) and around 80% of them use their mobile devices to purchase goods online. Similarly, in emerging markets, our study notes that the mobile digital dividend between the millennials and their elders is lower than in the developed region - showing again the importance of addressing the needs of higher-value mobile consumers that are part of the Generation X and Baby Boomers groups. This is particularly the case in Sub-Saharan Africa and South Asia where smartphone users above 35 years of age are engaging as much as the millennials in mobile internet use cases such as social networks and IP comms.
There are countries with high smartphone ownership where user engagement is low, due to digital illiteracy and a lack of local content. In Myanmar, >50% of unique subscribers own a smartphone but their user engagement pattern is below the developing world average. Just over 60% of smartphone users in the country claim that their usage is prevented by the fact that they have trouble understanding how mobile internet applications, websites or email work on a mobile phone. Similarly, over half claim that they are not able to access enough content and information written in their own language.

Smartphone ownership is not the end game.

Engagement in mobile internet use cases, 2016
Source: GSMA Intelligence

<table>
<thead>
<tr>
<th>Myanmar</th>
<th>Millennials</th>
</tr>
</thead>
<tbody>
<tr>
<td>13%</td>
<td>27%</td>
</tr>
</tbody>
</table>

Paying a bill or transferring money to a friend using a mobile phone is more frequent in Nairobi than it is in London, Paris or Zurich.

There are several African countries with high mobile user engagement in financial services, primarily driven by the use of mobile money services. Around 4 in every 5 mobile phone owners (18+) in Kenya and Tanzania use their mobile phones to send or receive money from friends, relatives or business associates via mobile money services. This trend is true for consumers on both smartphones and basic/feature phones. Mobile money services are more convenient to process cash transactions than online banking services, which are being used by around 57% of smartphone users across the UK, France and Switzerland altogether. The Aficionados is the consumer segment that engages the most in mobile financial services and digital commerce use cases.
Ensuring network capacity will remain a key priority for operators as mobile entertainment traffic continues to rise.

To date >70% of smartphone users globally watch free online videos on their phone, and half of smartphone users watch or replay (free) live TV programmes on their phones.

Paid-for online content is almost exclusively consumed by the most engaged and tech-savvy mobile user groups. Yet, this exclusivity is set to change driven by the upcoming rise in smartphone and 4G adoption, coupled with the proliferation of localised content, the international expansion of on-demand content providers (e.g. Netflix) and the potential of AR/VR services.

Free content is king; everyone bows to mobile video streaming.

Wearables (smartwatches or fitness trackers) seem to have been adopted by multiple groups of consumers with varying levels of tech-savviness. There are no clear differences in ownership between age groups nor any large inequalities in ownership between men and women.

Similarly, consumers across all segments own wearables. The most engaged - ‘Aficionados’ - dominate, at 45% of wearables owners.

That said, the wearables market remains niche with only 10% of smartphone users globally who own at least one.

Wearables appeal to all ages and genders, and are not just for mobile addicts.
Global mobile user engagement – data insights

On average globally >70% of smartphone consumers use their device to get information about products and services, but only one in two uses it to order and purchase goods.

This shows the room for growth that exists today in driving more consumers to use their smartphones for mobile commerce services. Consumers in the US and South Korea are leading engagement in mobile shopping, but multi-screen ownership (e.g. PC, laptops, tablets) tends to prevent greater usage.

Smartphones are more frequently used for online window-shopping, than to generate actual purchases.

Female mobile phone owners in India are 43% less likely to engage in mobile internet services than men.

Closing the gender gap in mobile internet usage that exists today in South Asian markets in particular would fuel incremental value for industry players while delivering substantial socio-economic benefits.

Last year, 17% of female mobile phone owners (18+) in India engaged in mobile internet based services compared to 29% of male phone owners. These low usage levels in the country are influenced by the large prevalence of non-smartphone subscribers (77%).

Among the smartphone user base alone, mobile internet usage among women and men stood at 38% versus 55% respectively.

Global % of smartphone users (18+) engaged in mobile commerce use cases, 2016

Source: GSMA Intelligence

India 2016, mobile internet use among smartphone vs. non-smartphone female users (18+)

Source: GSMA Intelligence
<table>
<thead>
<tr>
<th>#</th>
<th>Country</th>
<th>Engagement Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Korea, South</td>
<td>5.0</td>
</tr>
<tr>
<td>2</td>
<td>Qatar</td>
<td>5.0</td>
</tr>
<tr>
<td>3</td>
<td>United States of America</td>
<td>4.7</td>
</tr>
<tr>
<td>4</td>
<td>Saudi Arabia</td>
<td>4.6</td>
</tr>
<tr>
<td>5</td>
<td>Denmark</td>
<td>4.5</td>
</tr>
<tr>
<td>6</td>
<td>Finland</td>
<td>4.5</td>
</tr>
<tr>
<td>7</td>
<td>Australia</td>
<td>4.5</td>
</tr>
<tr>
<td>8</td>
<td>Spain</td>
<td>4.4</td>
</tr>
<tr>
<td>9</td>
<td>Sweden</td>
<td>4.4</td>
</tr>
<tr>
<td>10</td>
<td>Romania</td>
<td>4.3</td>
</tr>
<tr>
<td>11</td>
<td>Greece</td>
<td>4.2</td>
</tr>
<tr>
<td>12</td>
<td>United Kingdom</td>
<td>4.2</td>
</tr>
<tr>
<td>13</td>
<td>Israel</td>
<td>4.2</td>
</tr>
<tr>
<td>14</td>
<td>Austria</td>
<td>4.2</td>
</tr>
<tr>
<td>15</td>
<td>Switzerland</td>
<td>4.2</td>
</tr>
<tr>
<td>16</td>
<td>Portugal</td>
<td>4.1</td>
</tr>
<tr>
<td>17</td>
<td>Italy</td>
<td>4.0</td>
</tr>
<tr>
<td>18</td>
<td>Poland</td>
<td>3.9</td>
</tr>
<tr>
<td>19</td>
<td>Germany</td>
<td>3.9</td>
</tr>
<tr>
<td>20</td>
<td>France</td>
<td>3.6</td>
</tr>
<tr>
<td>21</td>
<td>Canada</td>
<td>3.5</td>
</tr>
<tr>
<td>22</td>
<td>Belgium</td>
<td>3.4</td>
</tr>
<tr>
<td>23</td>
<td>Netherlands</td>
<td>3.3</td>
</tr>
<tr>
<td>24</td>
<td>Russian Federation</td>
<td>3.2</td>
</tr>
<tr>
<td>25</td>
<td>Japan</td>
<td>3.0</td>
</tr>
<tr>
<td>26</td>
<td>Puerto Rico</td>
<td>2.9</td>
</tr>
<tr>
<td>27</td>
<td>Brazil</td>
<td>2.8</td>
</tr>
<tr>
<td>28</td>
<td>China</td>
<td>2.6</td>
</tr>
<tr>
<td>29</td>
<td>Argentina</td>
<td>2.5</td>
</tr>
<tr>
<td>30</td>
<td>Guatemala</td>
<td>2.4</td>
</tr>
<tr>
<td>31</td>
<td>Chile</td>
<td>2.4</td>
</tr>
<tr>
<td>32</td>
<td>South Africa</td>
<td>2.3</td>
</tr>
<tr>
<td>33</td>
<td>Philippines</td>
<td>2.2</td>
</tr>
<tr>
<td>34</td>
<td>Mexico</td>
<td>2.1</td>
</tr>
<tr>
<td>35</td>
<td>Ukraine</td>
<td>2.1</td>
</tr>
<tr>
<td>36</td>
<td>Vietnam</td>
<td>2.1</td>
</tr>
<tr>
<td>37</td>
<td>Algeria</td>
<td>1.9</td>
</tr>
<tr>
<td>38</td>
<td>Nicaragua</td>
<td>1.9</td>
</tr>
<tr>
<td>39</td>
<td>Morocco</td>
<td>1.7</td>
</tr>
<tr>
<td>40</td>
<td>Thailand</td>
<td>1.7</td>
</tr>
<tr>
<td>41</td>
<td>Colombia</td>
<td>1.5</td>
</tr>
<tr>
<td>42</td>
<td>Kenya</td>
<td>1.5</td>
</tr>
<tr>
<td>43</td>
<td>Mozambique</td>
<td>1.5</td>
</tr>
<tr>
<td>44</td>
<td>Indonesia</td>
<td>1.4</td>
</tr>
<tr>
<td>45</td>
<td>Tanzania</td>
<td>1.4</td>
</tr>
<tr>
<td>46</td>
<td>Ivory Coast</td>
<td>1.4</td>
</tr>
<tr>
<td>47</td>
<td>Cameroon</td>
<td>1.3</td>
</tr>
<tr>
<td>48</td>
<td>Nigeria</td>
<td>1.3</td>
</tr>
<tr>
<td>49</td>
<td>Egypt</td>
<td>1.1</td>
</tr>
<tr>
<td>50</td>
<td>India</td>
<td>1.1</td>
</tr>
<tr>
<td>51</td>
<td>Uzbekistan</td>
<td>1.0</td>
</tr>
<tr>
<td>52</td>
<td>Sierra Leone</td>
<td>0.9</td>
</tr>
<tr>
<td>53</td>
<td>Myanmar</td>
<td>0.8</td>
</tr>
<tr>
<td>54</td>
<td>Pakistan</td>
<td>0.8</td>
</tr>
<tr>
<td>55</td>
<td>DRC</td>
<td>0.6</td>
</tr>
<tr>
<td>56</td>
<td>Ethiopia</td>
<td>0.5</td>
</tr>
</tbody>
</table>

The score accounts for smartphone and non-smartphone users and is weighted based on unique subscriber penetration.
There are five key factors driving the next transition to greater mobile user engagement, other than income distribution and literacy rates.

Five key market factors are powering mobile user engagement:

1. Generational demographic shifts
2. Mobile technology innovation
3. Mobile broadband affordability
4. Digital literacy
5. Local content availability

Countries rapidly transitioning to greater mobile data engagement:
Tomorrow's consumer will be more connected and more engaged in internet-based services.
Appendix

1. Consumer survey inputs: 29 mobile use cases were covered to build the index
2. Consumer segmentation: key characteristics
3. Consumer profiles vary by region
4. How is consumer behaviour going to change by region?
5. The relationship between mobile engagement and data revenue can be asymmetric
6. Higher mobile engagement does not ensure faster data revenue growth
7. GMEI methodology

Note: Our GMEI supplementary data publication, which includes additional data insights, is available in our online research archive here.
Consumer survey inputs: 29 mobile use cases were covered to build the index

"Please tell me how frequently, if at all, you use each of the following communication tools and services on any of your mobile phones".

[Never - Less than once a month - every month - every week - every day]

<table>
<thead>
<tr>
<th>Traditional communication</th>
<th>Internet</th>
<th>Digital commerce</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Phone calls over cellular/mobile network</td>
<td>• Browse the internet</td>
<td>• Get information about products and services</td>
</tr>
<tr>
<td>• SMS/MMS</td>
<td>• Read the news</td>
<td>• Pay for on-demand TV/movie</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mobile internet communication</th>
<th>Entertainment</th>
<th>Financial services</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Video calls</td>
<td>• Play games</td>
<td>• Transfer money</td>
</tr>
<tr>
<td>• IP messaging app</td>
<td>• Watch free online video</td>
<td>• Online banking</td>
</tr>
<tr>
<td>• Email</td>
<td>• Watch live TV or replay TV programmes</td>
<td>• Financial services (like paying utility bills)</td>
</tr>
<tr>
<td>• Phone calls using a provider other than your mobile operator</td>
<td>• Listen to free online music</td>
<td>• Send or receive money from friends/relatives/business associates via mobile money services</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Apps</th>
<th>Lifestyle</th>
<th>Social networking</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Download apps</td>
<td>• Look for or apply for a job</td>
<td>• Visit social networking websites</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Navigation</th>
<th>Apps</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Use map applications</td>
<td>• Download apps</td>
</tr>
</tbody>
</table>
## Consumer segmentation – key characteristics

<table>
<thead>
<tr>
<th>Segment</th>
<th>Key characteristics</th>
<th>Key services determining membership</th>
</tr>
</thead>
</table>
| Aficionados | • Highest recorded engagement across all use cases  
• More male oriented and younger generations prevail  
• Greater presence in the developed region  
• Very tech-savvy, good understanding of mobile technology and upcoming products and services  
• Spend more time exploring the web and social networks than placing voice calls or sending SMS  
• Very likely to own smart TVs and wearables  
• Predominantly connected to 4G networks  
• High engagement in digital commerce and financial services                                                                                                                                                                                                                                                                                                                          | ![Phone](chart1.png) ![Message](chart2.png) ![Like](chart3.png) ![Share](chart4.png) ![Search](chart5.png) ![Cloud](chart6.png) ![Location](chart7.png) ![Play](chart8.png) ![Cart](chart9.png) ![List](chart10.png) |
| Pragmatists | • High usage recorded across most use cases  
• Similar demographics and characteristics to Aficionados, except that the Pragmatists have a preference for free content and are less likely to use their phones to pay for products and services  
• They engage in entertainment, digital commerce and financial services, but at a rate almost twice lower than the Aficionados  
• Almost equal split between 4G and 3G connectivity  
• Less tech-savvy than the Aficionados                                                                                                                                                                                                                                                                                        | ![Phone](chart11.png) ![Message](chart12.png) ![Like](chart13.png) ![Share](chart14.png) ![Search](chart15.png) ![Cloud](chart16.png) ![Location](chart17.png) ![Play](chart18.png) ![Cart](chart19.png) ![List](chart20.png) |
| Networkers | • Moderate usage recorded across fewer use cases than the above groups  
• Mobile phones are used essentially to explore the internet (web browsing, reading the news) and communicate (via voice, SMS, IP comms, social networks)  
• More female oriented with similar age demographics to Pragmatists (i.e. younger generations)  
• Less tech-savvy, good understanding of mobile tech but no specific knowledge of upcoming products and services  
• Unlikely to own wearables but reasonably good ownership of smart TVs  
• Predominantly connected to 3G rather than 4G  
• Greater presence in the developing world  
• Almost never use their mobile phones for digital commerce and financial services  
• Occasionally download apps and consume free media content                                                                                                                                                                                                                                                                          | ![Phone](chart21.png) ![Message](chart22.png) ![Like](chart23.png) ![Share](chart24.png) ![Search](chart25.png) ![Cloud](chart26.png) ![Location](chart27.png) ![Play](chart28.png) ![Cart](chart29.png) ![List](chart30.png) |
| Talkers    | • Low usage recorded across all use cases with the exception of traditional comms  
• Mobile phones are used essentially to place a voice call or send an SMS  
• Older generations prevail, with an equal split between men and women  
• Still experimenting with mobile internet communications and internet use (web browsing, online news)  
• Never use their phones for digital commerce and financial services, nor to consume free media content  
• Almost never download apps and no interest in social networking  
• Predominantly connected to 3G, while 2G connectivity is greater than 4G  
• Greater presence in the developing world                                                                                                                                                                                                                                                                              | ![Phone](chart31.png) ![Message](chart32.png) ![Like](chart33.png) ![Share](chart34.png) ![Search](chart35.png) ![Cloud](chart36.png) ![Location](chart37.png) ![Play](chart38.png) ![Cart](chart39.png) ![List](chart40.png) |
The average consumer profile varies by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Pragmatists</th>
<th>Aficionados</th>
<th>Talkers</th>
<th>Networkers</th>
<th>Tech-savviness</th>
<th>4G</th>
<th>3G</th>
<th>2G</th>
<th>Using at least every month</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>35–44</td>
<td>35–44</td>
<td>35–44</td>
<td>35–44</td>
<td>Medium</td>
<td>4G</td>
<td>3G</td>
<td>2G</td>
<td></td>
</tr>
<tr>
<td>Latin America</td>
<td>35–44</td>
<td>35–44</td>
<td>35–44</td>
<td>35–44</td>
<td>Medium</td>
<td>4G</td>
<td>3G</td>
<td>2G</td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>35–44</td>
<td>35–44</td>
<td>35–44</td>
<td>35–44</td>
<td>High</td>
<td>3G</td>
<td>3G</td>
<td>2G</td>
<td></td>
</tr>
<tr>
<td>East Asia/Pacific</td>
<td>35–44</td>
<td>35–44</td>
<td>35–44</td>
<td>35–44</td>
<td>Medium</td>
<td>3G</td>
<td>3G</td>
<td>2G</td>
<td></td>
</tr>
<tr>
<td>South Asia</td>
<td>25–34</td>
<td>25–34</td>
<td>35–44</td>
<td>35–44</td>
<td>Medium</td>
<td>3G</td>
<td>3G</td>
<td>2G</td>
<td></td>
</tr>
<tr>
<td>Middle East/North Africa</td>
<td>25–34</td>
<td>35–44</td>
<td>35–44</td>
<td>35–44</td>
<td>High</td>
<td>3G</td>
<td>3G</td>
<td>2G</td>
<td></td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>25–34</td>
<td>25–34</td>
<td>35–44</td>
<td>35–44</td>
<td>Medium</td>
<td>3G</td>
<td>3G</td>
<td>2G</td>
<td></td>
</tr>
</tbody>
</table>

1 Aficionados = early adopters
Pragmatists = early majority
Talkers = laggards

2 High = I have a good understanding of mobile phones as well as upcoming mobile products and technologies
Medium = I have a good understanding of mobile phones but no particular knowledge about upcoming mobile products and technologies
Low = I am not comfortable with mobile phone technology, it is too complex and changes too fast

3 Perception based question: Which mobile network is your primary mobile most often connected to?
## How is consumer behaviour going to change by region?

<table>
<thead>
<tr>
<th>Region</th>
<th>2016</th>
<th>2030</th>
<th>Projected change in segmentation, % of adult smartphone subscribers</th>
<th>Key countries to experience the most radical change</th>
<th>Key drivers of user engagement change</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td></td>
<td></td>
<td></td>
<td>Canada</td>
<td>Demographic shifts, Platformisation, Network innovation (e.g. 5G, IoT)</td>
</tr>
<tr>
<td></td>
<td>45%</td>
<td>51%</td>
<td>↑</td>
<td>Chile, Colombia, Mexico</td>
<td>4G adoption, Smartphone adoption, Platformisation</td>
</tr>
<tr>
<td></td>
<td>27%</td>
<td>21%</td>
<td>↓</td>
<td></td>
<td>Demographic shifts, Network innovation</td>
</tr>
<tr>
<td></td>
<td>14%</td>
<td>15%</td>
<td>↓</td>
<td></td>
<td>4G adoption, Smartphone adoption, Platformisation</td>
</tr>
<tr>
<td></td>
<td>14%</td>
<td>8%</td>
<td>↓</td>
<td></td>
<td>Demographic shifts, Platformisation, Network innovation</td>
</tr>
<tr>
<td>Latin America</td>
<td></td>
<td></td>
<td></td>
<td>Chile, Colombia, Mexico</td>
<td>4G adoption, Smartphone adoption, Platformisation</td>
</tr>
<tr>
<td></td>
<td>11%</td>
<td>16%</td>
<td>↑</td>
<td></td>
<td>Demographic shifts, Network innovation</td>
</tr>
<tr>
<td></td>
<td>45%</td>
<td>40%</td>
<td>↓</td>
<td></td>
<td>4G adoption, Smartphone adoption, Platformisation</td>
</tr>
<tr>
<td></td>
<td>34%</td>
<td>35%</td>
<td>↓</td>
<td></td>
<td>Demographic shifts, Network innovation</td>
</tr>
<tr>
<td></td>
<td>9%</td>
<td>14%</td>
<td>↓</td>
<td></td>
<td>4G adoption, Smartphone adoption, Platformisation</td>
</tr>
<tr>
<td>Europe</td>
<td></td>
<td></td>
<td></td>
<td>Belgium, France, Germany, Netherlands</td>
<td>Demographic shifts, 4G adoption, Smartphone adoption, Platformisation, Network innovation</td>
</tr>
<tr>
<td></td>
<td>21%</td>
<td>25%</td>
<td>↑</td>
<td></td>
<td>Demographic shifts, Network innovation</td>
</tr>
<tr>
<td></td>
<td>38%</td>
<td>42%</td>
<td>↓</td>
<td></td>
<td>4G adoption, Smartphone adoption, Platformisation</td>
</tr>
<tr>
<td></td>
<td>19%</td>
<td>20%</td>
<td>↓</td>
<td></td>
<td>Demographic shifts, Network innovation</td>
</tr>
<tr>
<td></td>
<td>22%</td>
<td>14%</td>
<td>↓</td>
<td></td>
<td>4G adoption, Smartphone adoption, Platformisation</td>
</tr>
<tr>
<td>East Asia / Pacific</td>
<td></td>
<td></td>
<td></td>
<td>Indonesia, Japan, Myanmar</td>
<td>Demographic shifts, 4G adoption, Smartphone adoption, Platformisation, MBB affordability, Local content</td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td>16%</td>
<td>↑</td>
<td></td>
<td>Demographic shifts, Network innovation</td>
</tr>
<tr>
<td></td>
<td>33%</td>
<td>33%</td>
<td>↓</td>
<td></td>
<td>4G adoption, Smartphone adoption, Platformisation</td>
</tr>
<tr>
<td></td>
<td>36%</td>
<td>37%</td>
<td>↓</td>
<td></td>
<td>Demographic shifts, Network innovation</td>
</tr>
<tr>
<td></td>
<td>31%</td>
<td>31%</td>
<td>↓</td>
<td></td>
<td>4G adoption, Smartphone adoption, Platformisation</td>
</tr>
<tr>
<td>South Asia</td>
<td></td>
<td></td>
<td></td>
<td>India</td>
<td>4G adoption, Smartphone adoption, MBB affordability, Local content regionalisation</td>
</tr>
<tr>
<td></td>
<td>13%</td>
<td>20%</td>
<td>↑</td>
<td></td>
<td>4G adoption, Smartphone adoption, MBB affordability, Local content regionalisation</td>
</tr>
<tr>
<td></td>
<td>17%</td>
<td>21%</td>
<td>↑</td>
<td></td>
<td>4G adoption, Smartphone adoption, MBB affordability, Local content regionalisation</td>
</tr>
<tr>
<td></td>
<td>25%</td>
<td>33%</td>
<td>↑</td>
<td></td>
<td>4G adoption, Smartphone adoption, MBB affordability, Local content regionalisation</td>
</tr>
<tr>
<td></td>
<td>45%</td>
<td>39%</td>
<td>↑</td>
<td></td>
<td>4G adoption, Smartphone adoption, MBB affordability, Local content regionalisation</td>
</tr>
<tr>
<td>Middle East North Africa</td>
<td></td>
<td></td>
<td></td>
<td>Egypt, Morocco, Uzbekistan</td>
<td>4G adoption, Smartphone adoption, MBB affordability</td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td>11%</td>
<td>↑</td>
<td></td>
<td>4G adoption, Smartphone adoption, MBB affordability</td>
</tr>
<tr>
<td></td>
<td>31%</td>
<td>35%</td>
<td>↑</td>
<td></td>
<td>4G adoption, Smartphone adoption, MBB affordability</td>
</tr>
<tr>
<td></td>
<td>32%</td>
<td>40%</td>
<td>↑</td>
<td></td>
<td>4G adoption, Smartphone adoption, MBB affordability</td>
</tr>
<tr>
<td></td>
<td>27%</td>
<td>14%</td>
<td>↓</td>
<td></td>
<td>4G adoption, Smartphone adoption, MBB affordability</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td></td>
<td></td>
<td></td>
<td>Ivory Coast, Kenya, Mozambique, Tanzania</td>
<td>4G adoption, Smartphone adoption, MBB affordability, Digital literacy</td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td>11%</td>
<td>↑</td>
<td></td>
<td>4G adoption, Smartphone adoption, MBB affordability, Digital literacy</td>
</tr>
<tr>
<td></td>
<td>22%</td>
<td>24%</td>
<td>↑</td>
<td></td>
<td>4G adoption, Smartphone adoption, MBB affordability, Digital literacy</td>
</tr>
<tr>
<td></td>
<td>41%</td>
<td>55%</td>
<td>↑</td>
<td></td>
<td>4G adoption, Smartphone adoption, MBB affordability, Digital literacy</td>
</tr>
<tr>
<td></td>
<td>21%</td>
<td>55%</td>
<td>↑</td>
<td></td>
<td>4G adoption, Smartphone adoption, MBB affordability, Digital literacy</td>
</tr>
</tbody>
</table>
The relationship between mobile engagement and data revenue can be asymmetric.

The share of mobile data revenue varies considerably between markets, despite a reasonably close level of user engagement, partly due to differences in consumer behaviour by country.

Japan differs to Korea or the USA due to a lower prevalence of smartphones, and a larger elderly population, who tend to be less engaged in mobile internet services.

Mobile user engagement explains the level of data revenue by country in 56% of cases, as other market factors are at play, and as in many countries operators charge a flat fee to access mobile internet services.

GMEI vs. data revenue as a % of recurring (service) revenue, 2016
Source: GSMA Intelligence

Data revenue as % of recurring revenue, 2016

R²=0.56144
Higher mobile user engagement does not ensure faster data revenue growth

Despite the level of user engagement (high or low), data revenue growth remains slow (2pp on average between 2015 and 2016) highlighting the challenge facing mobile operators in generating rapid return on investments.

China witnessed a substantial increase in data revenue in 2016 bringing it on par with most Western markets as data represents close to 50% of service revenue, but user engagement remains below the developed world’s average.

Higher mobile user engagement does not ensure faster data revenue growth, emphasising the need for a sustainable market environment.

Global Mobile Engagement Index (GMEI)

Higher mobile user engagement does not ensure faster data revenue growth, emphasising the need for a sustainable market environment.
About the survey

GSMA Intelligence has set up an annual consumer survey to better measure mobile uptake across both developed and developing economies. The survey fieldwork took place between June and August 2016 across 56 countries worldwide, representing 80% of the global population.

The sample size included 1,000 respondents per country. Of the 56 countries, the 32 developing countries were surveyed face-to-face while the 24 developed countries were surveyed online.

Sampling frame:

The research is based on proportional quota sampling. The research participants are selected non-randomly according to a fixed quota that represents the major characteristics of a population (gender, age, urban/rural location) by sampling a proportional amount of each. The sampling frame uses base data from the United Nations (UN) and the World Bank.

The variables used to construct the sampling frame are:
- Age (18–64, five-year age bands)
- Gender
- Household income
- Urban vs. rural household location

Household income quotas are monitored in order to get a spread across all variants of the income structure. In developing countries, a specific set of questions was added within the survey for each market to measure the social grade of each household, helping to better assess income, employment and occupation.

Sampling points:

The variables used to construct the sampling frame, and a willingness to take part, are the criteria used to classify a participant as the ‘right person’. For the face-to-face survey, the sampling points are set based on local knowledge. If information about gender or age distribution throughout the country is available (e.g. from a census) then generally this will be used to define the sampling points where interviewers should intervene.

An enumerator goes to each of the sampling areas and carries out the survey based on the predefined random-walk instructions. In each quota cell, there is a target set on the number of successful interviews.

Survey administration:

The delivery of the structured survey is via interviewer administered computer-assisted personal interviewing (CAPI) and interviewer administered paper survey (PAPI) in developing countries, and self-completion online in developed countries.
The Global Mobile Engagement Index measures the average level of user engagement with mobile phones by country. So the higher the final score, the more likely consumers are to frequently use their mobile phones.

In this study, the terms ‘consumers’ and ‘users’ refer to adult (18+) mobile phone owners. Unless stated otherwise, the statistics presented throughout the report refer to 2016. ‘Mobile internet’ or ‘data’ use mentioned throughout the study is calculated based on engagement in the 27 survey use cases that are internet-enabled.

The GMEI is based on the computation of two scores for each country: the average number of use cases people engage in, and the average frequency at which they do them.

The results of our 2016 consumer survey form the inputs used to build the indicator. Respondents were asked how frequently they engage with their mobile phone in 29 use cases ranging from traditional phone calls and SMS to more advanced services such as video streaming or online shopping.

The answers to these questions are turned into a numerical frequency score, such that never = 1, less than once a month = 2, every month = 3, every week = 4, and everyday = 5.

**Frequency score vs. usage score:**

For each respondent, we therefore calculate a frequency score and a usage score. The averaged frequency of engagement in the 29 use cases, a continuous number on a scale from 1 to 5, results in the average usage frequency score. The average number of use case score is calculated as the proportion of all 29 use cases a respondent engages in, converted into a scale from 1 to 5. The sum of the two scores results in the mobile engagement score of an individual respondent, which is then converted into a 0 to 10 scale.

The frequency and usage scores for any given is calculated separately for smartphone users and non-smartphone users. These two distinct scores are then weighted based on smartphone and non-smartphone ownership rates (as a percentage of unique subscribers). The final score is then multiplied by the unique subscriber penetration rate to normalise the index based on the share of the population that is ‘connected’.

The overall equation is as follows:

\[
\text{GMEI} = \left[\text{Smartphone users} \% \times (\text{smartphone usage score} + \text{frequency score}) + \text{non-smartphone users} \% \times (\text{non-smartphone usage score} + \text{frequency score})\right] \times \text{unique subscriber} \%
\]

**About the consumer segmentation**

The segmentation of respondents into distinct consumer groups was performed by using the method of k-means cluster analysis. This analysis was performed on the results of the 56,000 survey respondents. This mathematical method assigned each respondent according to their mobile engagement pattern into one of four clusters: the Aficionados, the Pragmatists, the Networkers and the Talkers.
About us
Joss Gillet  
Director, Data Products

Joss manages the GSMA Intelligence analyst team and is responsible for data products and partnerships. He joined ten years ago as a senior analyst, looking after mobile network technology migration and overall research and forecast accuracy. Before GSMA Intelligence, Joss worked at Ovum Ltd and for Motorola’s Mobile Devices Division in the UK. He joined Motorola as a product analyst before managing its market intelligence activities in Europe. He holds an MA in International Business from Portsmouth Business School and a certificate in International Political Theory from the University of London.

Michael Meyer  
Analyst, Consumer Survey

Michael is an analyst at GSMA Intelligence focusing on the analysis and dissemination of the GSMA’s global consumer survey results. Before GSMA Intelligence, Michael worked as a market analyst for Frost & Sullivan and as a market researcher for NOP and Fieldwork International (IPSOS). Michael holds an MSc (PgDip) from Kingston University London and a certificate in Quantitative Economic Methods from London Birkbeck University.

Barbara Arese Lucini  
Senior Analyst

Barbara is a Senior Analyst at GSMA Intelligence focusing on research for emerging markets. Before joining the GSMA in April 2013, Barbara worked for FrontlineSMS in London and at Accenture in Italy. She holds an MSc in Development Studies from SOAS, London and an undergraduate in Mathematics from Università Statale di Milano, Italy.
GSMA Intelligence is the definitive source of mobile operator data, analysis and forecasts, delivering the most accurate and complete set of industry metrics available.

Relied on by a customer base of over 800 of the world’s leading mobile operators, device vendors, equipment manufacturers and financial and consultancy firms, the data set is the most scrutinised in the industry.

With over 30 million individual data points (updated daily), the service provides coverage of the performance of all 1,400+ operators and 1,200+ MVNOs across 4,500+ networks, 77 groups and 239 countries and territories worldwide.

Whilst every care is taken to ensure the accuracy of the information contained in this material, the facts, estimates and opinions stated are based on information and sources which, while we believe them to be reliable, are not guaranteed. In particular, it should not be relied upon as the sole source of reference in relation to the subject matter. No liability can be accepted by GSMA Intelligence, its directors or employees for any loss occasioned to any person or entity acting or failing to act as a result of anything contained in or omitted from the content of this material, or our conclusions as stated. The findings are GSMA Intelligence’s current opinions; they are subject to change without notice. The views expressed may not be the same as those of the GSM Association. GSMA Intelligence has no obligation to update or amend the research or to let anyone know if our opinions change materially.

© GSMA Intelligence 2017. Unauthorised reproduction prohibited.

Please contact us at info@gsmaintelligence.com or visit gsmaintelligence.com.
GSMA Intelligence does not reflect the views of the GSM Association, its subsidiaries or its members.
GSMA Intelligence does not endorse companies or their products.

GSMA Intelligence, The Walbrook Building, 25 Walbrook, London EC4N 8AF