Top 30 energy consumption of the world's most popular mobile apps

All our digital uses have an impact of energy consumption and more generally on technical resources. **The environmental impact of digital technology is now significant and above all, growing rapidly.**
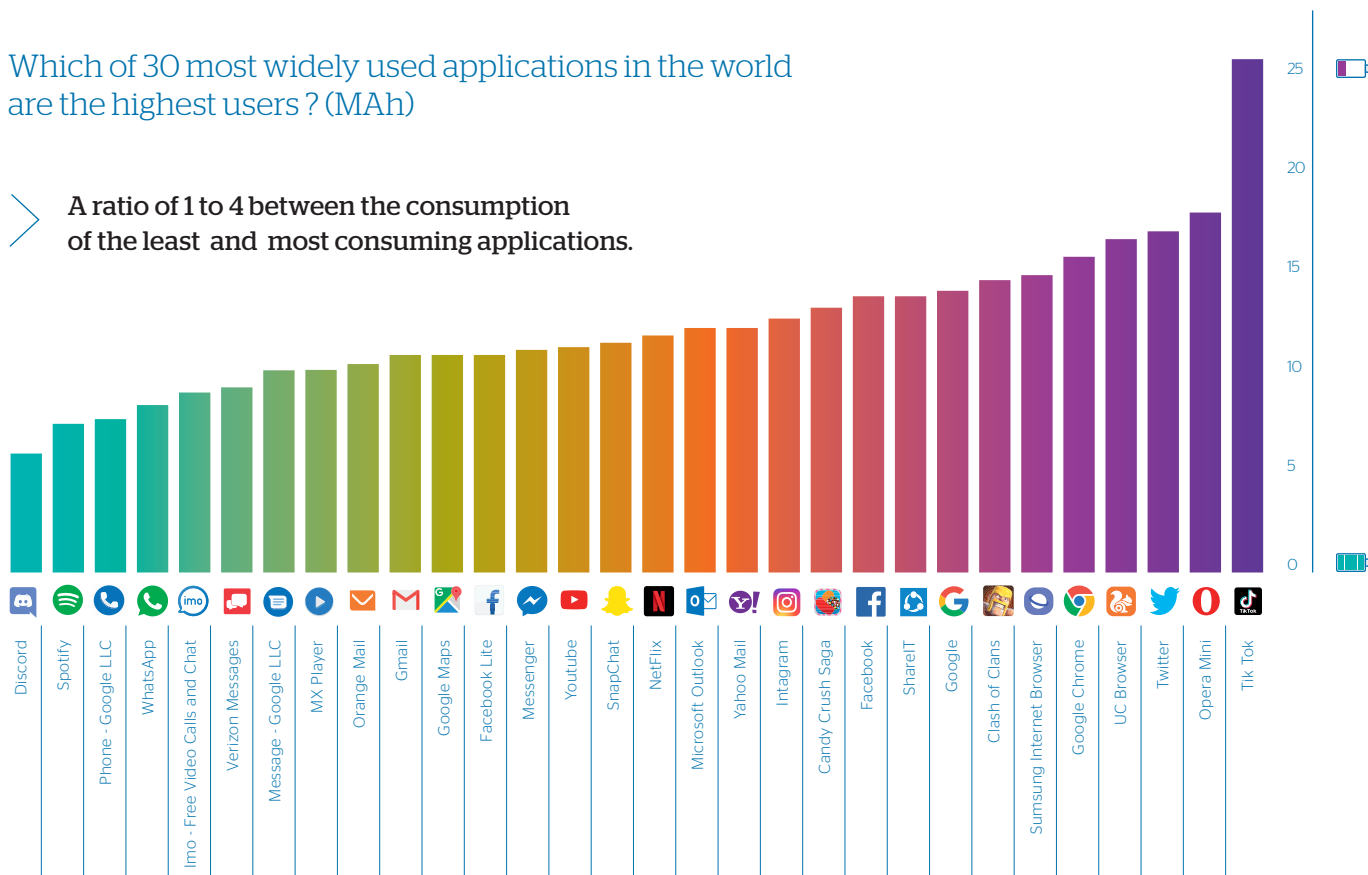
According to the Shift Project report, the impact of digital in terms of greenhouse gases currently represents 3.7% off global emissions and could, according to the assumptions, represent between 7 and 8.5% 2025, the equivalent of the GHG emissions from light vehicles on the planet (8% of GHGs).

Access to information, content and services is currently mainly provide by smartphone which have become the spearhead of digital business. Today, smartphone consumption, including the usage and the manufacturing phase) represents 11% of the digital energy consumption. The sensitive point of this energy consumption for the smartphone is the battery, which is the focus of our attention and that of manufacturers. We often accuse our smartphones of lack and / or loss of autonomy... **Yet it is the applications installed on the smartphone that consume...** and degrade the capacity of the batteries over time.

Mobile applications are now used for the most deployed by billions of people (more than 685 billion hours are spent annually to social networks). **The impact of these applications is therefore considerable** and a significant improvement in the sobriety of one of them can quickly have very positive consequences on their ecological impacts.

Which of 30 most widely used applications in the world are the highest users ? (MAh)

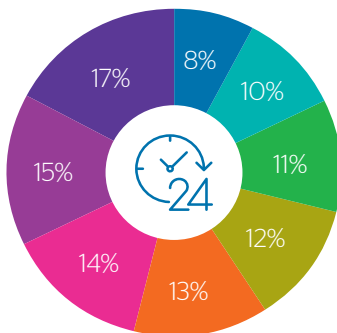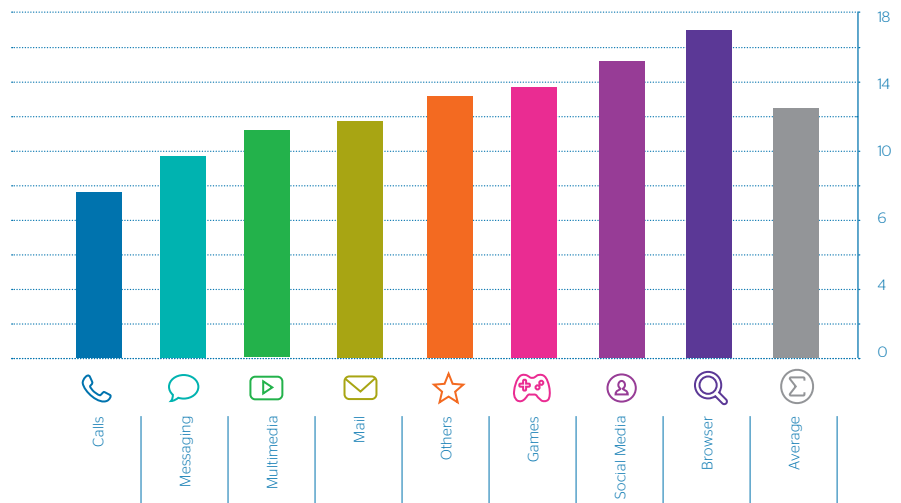> A ratio of 1 to 4 between the consumption of the least and most consuming applications.

Discord, Spotify, Phone - Google LLC, WhatsApp, Imo - Free Video Calls and Chat, Verizon Messages, Message - Google LLC, MX Player, Orange Mail, Gmail, Google Maps, Facebook Lite, Messenger, Youtube, SnapChat, NetFlix, Microsoft Outlook, Yahoo Mail, Intagram, Candy Crush Saga, Facebook, ShareIT, Google, Clash of Clans, Sumsung Internet Browser, Google Chrome, UC Browser, Twitter, Opera MIni, Tik Tok

Categorization of application energy consumption by category (mAh)

The ratio between the most and least consuming categories is 2. The category of calling applications (excluding video calling) is the least consumer.

> **We can empty a smartphone twice as fast by surfing the web as by calling!**

Bar chart categories (left to right): Calls, Messaging, Multimedia, Mail, Others, Games, Social Media, Browser, Average. Y-axis: 0, 4, 6, 10, 14, 18

Pie chart (24h): 8%, 10%, 11%, 12%, 13%, 14%, 15%, 17%

Projection of smartphone energy usage by a user per day

> **The use of mobile applications during the day mainly discharges the battery (77% of the capacity)** for an average use time of 3 hours in the context of a 3000 mAh battery. The intense use associated with high energy consumption of social network applications makes them energy sinkholes.

When we project this consumption of all mobile applications, we obtain a total consumption of **20.3** terawatt-hours (excluding networks and datacenters servers), which is slightly less than **the electricity consumption of a country like Ireland or the equivalent of 3 nuclear units.**

If the average of the applications were positioned on the best measured category of its category, we could **increase the autonomy of 1/3 of the capacity of the battery** and reduce the annual electricity consumption of 6 TWh, which is **almost the equivalent of a nuclear slice.**

Suggestions for improvement:

It is possible to reduce the global consumption of smartphones through different simple ways:

1.
Adapting the flow of multimedia applications to the platform and the user 's connection speed already reduces consumption.

2.
Web browsing is very consumer intensiv and requires the application of good web and mobile (eco-design) practices to avoid obesiciel.

3.
Social networks are consumer pitfalls, as a user prefer 'light' versions and / or options to hide multimedia content.

Discover the benchmark in full version:

All measurements were made on Nexus 6, Android 6 corresponding to a mid-range smartphone desktop WiFi network. All the applications were measured over an equivalent duration of 1 minute on the basis of 3 measurements whose average value is calculated.