

SUMMARY

of the report of the

STATE OF THE INTERNET

in France



PREAMBLE

NETWORKS DURING THE COVID-19 CRISIS

FACTSHEETS

IMPROVING FIXED AND MOBILE INTERNET QUALITY OF SERVICE MEASUREMENT

SUPERVISING DATA INTERCONNECTION

ACCELERATING THE TRANSITION TO IPv6

GUARANTEEING NET NEUTRALITY

DEVICES AND PLATFORMS, TWO STRUCTURAL LINKS IN THE INTERNET CHAIN

INCORPORATING DIGITAL TECH'S ENVIRONMENTAL FOOTPRINT INTO REGULATION

2020 — Edition

The [report](#) (PDF 12,3 Mo)

www.arcep.fr



NETWORKS

during the Covid-19 crisis



Photo Agency Sfr / Alamy

— This report on the state of the Internet in France looks at Arcep's activities and the events that occurred in 2019. But the public health crisis and subsequent lockdown in spring 2020 had a tremendous impact on usage, and so on the networks themselves, including a 30% increase in traffic during the lockdown, according to preliminary estimates¹ – as well as a significant change in the traffic profile. Arcep therefore decided to summarise its observations to date, and the first lessons learned from this period.

¹ Netscout report based on data from French ISPs.

Mobilised stakeholders

PUBLIC AUTHORITIES

- Operator reporting
- Dialogue on net neutrality issues
- Publication of best practices for teleworkers during the lockdown

END USERS

- Used mostly Wi-Fi
- Spread usage out across the day
- Downloads performed during off-peak hours



TELECOM OPERATORS

- Daily supervision of the networks
- Network maintenance
- Goodwill gestures to customers (free calling, data and pay-TV)

CONTENT PROVIDERS

- Bandwidth caps
- Downgraded video quality
- Updates performed during off-peak hours

Source: Arcep

Unprecedented digital needs

⌚ Thanks to telecommunication networks' capacities and performance, and to the mobilisation of all of the ecosystem's players (operators, content and application providers, users and public institutions), networks in France did not experience any major congestion issues during the Covid-19 lockdown that lasted from March to May 2020.



Photo Alamy

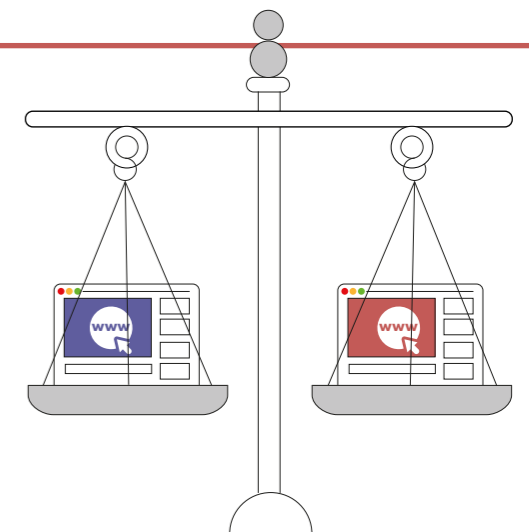
Risks of congestion especially at the interconnection level

⌚ A user who connects to the Internet to access a given content or service (e.g. web browsing, videoconferencing, video streaming, download, etc.) may find that service or content, and possibly even several services at once, are unavailable. This can be due to the overload of a link in the network's or the information system's technical chain, which is used to relay traffic from the server that hosts the content to the user's device.

⌚ During the lockdown, several content providers experienced overloads, which disrupted access to several services (videoconferencing, e-learning services, etc.). Occasional, highly localised access issues were also observed on the mobile Internet. The sharp increase in phone calls caused brief and sporadic overloads on voice networks. But the networks withstood!

Respecting net neutrality during this unprecedented period

⌚ Europe's Open Internet regulation stipulates that ISPs can, if necessary, take exceptional traffic management measures to reduce the impact of imminent congestion on their networks. The regulatory framework governing net neutrality in Europe proved both its ability to adapt and its relevance during the public health crisis.



The structural role played by OS during the Covid-19 crisis

⌚ The crisis once again proved how structural the two main mobile operating system (OS) providers – iOS and Android – are. Their choices influenced governments' public health decisions about the applications designed

to mitigate the spread of the Covid virus. The issue of regulating OS, which was brought before the Senate through a bill presented by Sophie Primas, is thus more pressing than ever.

Improving fixed and mobile internet

QoS MEASUREMENT

2020

Summary of the report on the state of the Internet in France

WHY IS IT IMPORTANT?

- ⌚ What criteria to apply when choosing a fixed or mobile plan? In addition to price, users must have information on the quality of the service rendered. By improving how operators' performance is measured, Arcep can help create a virtuous circle: stimulate operators' investments in the networks and so further improve their quality of service.

WHAT DOES ARCEP DO?

- ⌚ Arcep has been working for several years with different players (crowdsourcing measurement tools, operators, consumer protection organisations, academia) to improve quality of service measurement for fixed and mobile networks, and the information provided to users.
- ⌚ For mobile services, this process includes ongoing improvements to the "[Mon réseau Mobile](#)" (My mobile network) tool.

WHAT TO REMEMBER ABOUT 2019

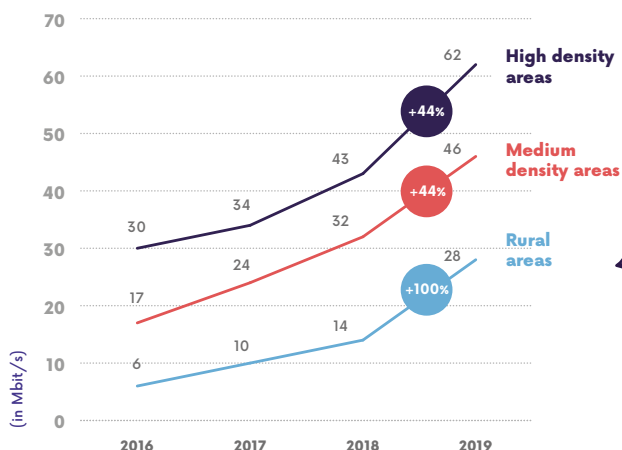
- ⌚ **47 %** of the reports received on the "[J'alerte l'Arcep](#)" platform in 2019 concerned a fixed or mobile service's quality and availability.
- ⌚ **45 Mbit/s**, is the average download speed in Metropolitan France, all areas and all technologies combined, which marks a great progress from 30 Mbit/s in 2018.

- ⌚ **On your marks!** The timetable for the "Access ID card" API kicked off on 16 January 2020. This API will be accessible to crowdsourcing measurement tools that comply with the Code of conduct established by Arcep. It will create the ability to characterise the environment in which users conduct their QoS tests.

UPCOMING WORK

- ⌚ Since **April 2020**, Arcep has been publishing the mobile QoS measurements performed by third parties, on its "Mon réseau mobile" site. Local authorities, measurement tools, consumer associations and citizens are all invited to join in the process, and particularly to feed and supplement "Mon réseau mobile" measurements, to make it the mobile connectivity information hub in France.
- ⌚ Arcep will be publishing a new version of the QoS Code of conduct in **summer 2020**, to increase the transparency and robustness of the methods used by crowdsourcing measurement tools
- ⌚ **In July 2022**, the "Access ID card" API will be implemented and activated in almost all of the boxes concerned by the Arcep Decision, after several demonstration and implementation stages.

Progression of mobile speeds in Metropolitan France



IT IS IN RURAL AREAS

that the progression in mobile connection speeds is the most visible: average speeds doubled in a single year. The first effects of the New Deal for Mobile are being felt.

Supervising data INTERCONNECTION

FACTSHEET

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2020

Summary of the report on the state of the Internet in France



WHY IS IT IMPORTANT?

- Interconnection is the cornerstone of the Internet. It enables players to interconnect and exchange traffic mutually, and so create what appears to users as a single network.

UPCOMING WORK

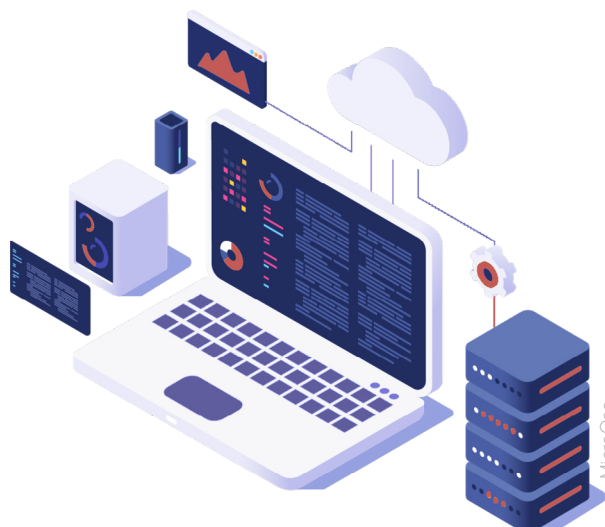
- The annual **barometer** of data interconnection will continue to be a vital tool for closely monitoring the market.

WHAT DOES ARCEP DO?

- This ecosystem can be a source of temporary tensions between the players, e.g. over how interconnections are scaled. Arcep keeps a close watch over this market, with actions that include the publication of an annual barometer of interconnection. When the situation requires, Arcep can also “police” the situation, and settle disputes between the players.

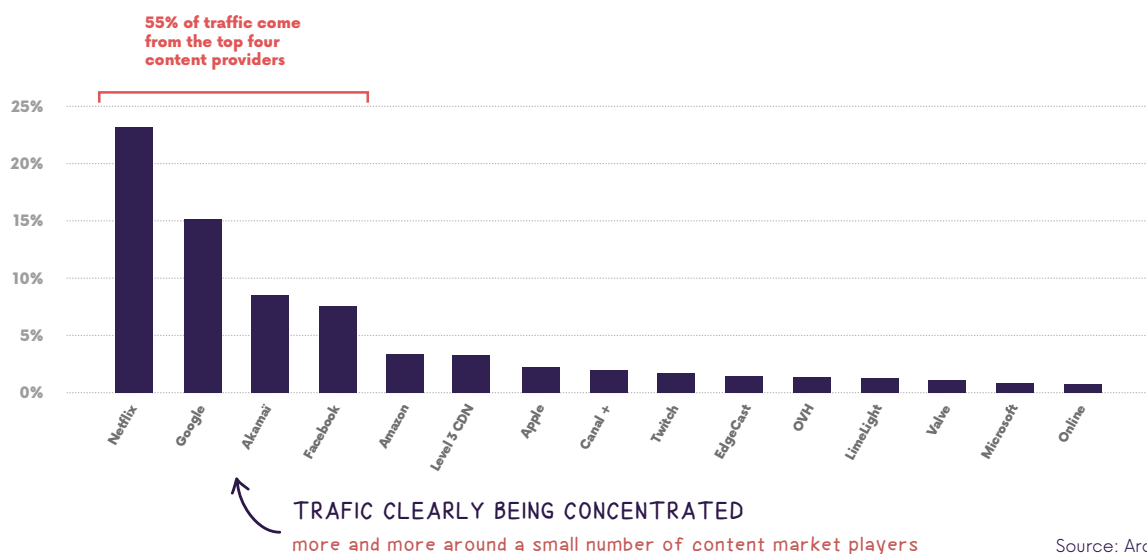
WHAT TO REMEMBER ABOUT 2019

- Inbound interconnection traffic to France's four largest ISPs rose by 29% during the year, to reach **18.4 Tbit/s** at the end of 2019.
- The installed interconnection capacities of the four largest ISPs are, on average, **2.7 times** their inbound traffic volume. Which gives them substantial leeway, but does not fully prevent temporary congestion.



Breakdown of traffic

to customers of France's main ISPs, by origin (end 2019)



Source: Arcep

Accelerating the transition to IPv6

2020

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WHY IS IT IMPORTANT?

- IPv4 and IPv6, which stand for "Internet Protocol version 4 and version 6", are the protocols used on the Internet to identify every device or machine connected to the network (computer, phone, server, etc.) through a unique address. Now that the shortage of IPv4 addresses is real, the transition to IPv6 has become vital to enabling the Internet's ongoing development, and thus key to sustaining competition and innovation.

WHAT DOES ARCEP DO?

- Arcep is working to accelerate and encourage the transition to IPv6 by publishing an annual barometer of ISPs' and web hosting companies' transition. Arcep is also working in concert with the ecosystem of players to help speed up this transition.

WHAT TO REMEMBER ABOUT 2019

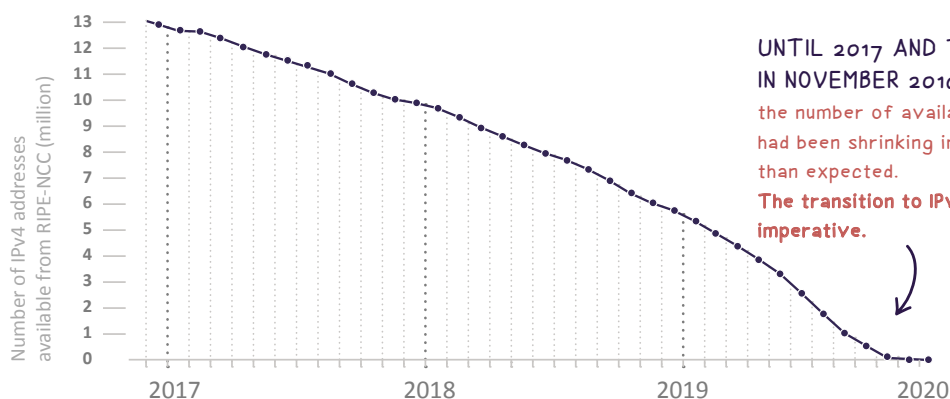
- On 15 November 2019, Arcep and Internet Society France launched the **IPv6 task-force**. The goal: to accelerate the entire Internet ecosystem's transition to IPv6.
- The **exhaustion of IPv4 addresses** was announced on 25 November 2019. Consequence: the Internet will continue to function, but will stop growing. The transition to IPv6 is the only future-proof solution.
- Only **27%** of the most popular websites in France are IPv6-enabled.

UPCOMING WORK

- The 2020 edition of the **IPv6 barometer** will deliver more transparency and information to users following the changes made to Arcep's annual survey.
- Operators who are awarded **5G** spectrum in the 3.4-3.8 GHz band in Metropolitan France will have an obligation to make their mobile networks IPv6-compatible.
- The **IPv6 task-force**, co-run by Arcep and Internet Society France, will continue its works. Anyone wanting to share their experiences or to help in the implementation of IPv6 are invited to contact Arcep, by detailing their interest in joining the [task-force](#).



Timeline of the IPv4 address run out



UNTIL 2017 AND THEIR EXHAUSTION IN NOVEMBER 2019

the number of available IPv4 addresses had been shrinking inexorably, and faster than expected.

The transition to IPv6 has become imperative.

Guaranteeing NET NEUTRALITY

FACTSHEET

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2020

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WHY IS IT IMPORTANT?

- The paradox of net neutrality lies in providing a framework whose purpose is to foster freedom and openness: it governs the way in which ISPs design their plans, to prevent incumbent players from locking in the market, and so enabling innovation to thrive.

WHAT DOES ARCEP DO?

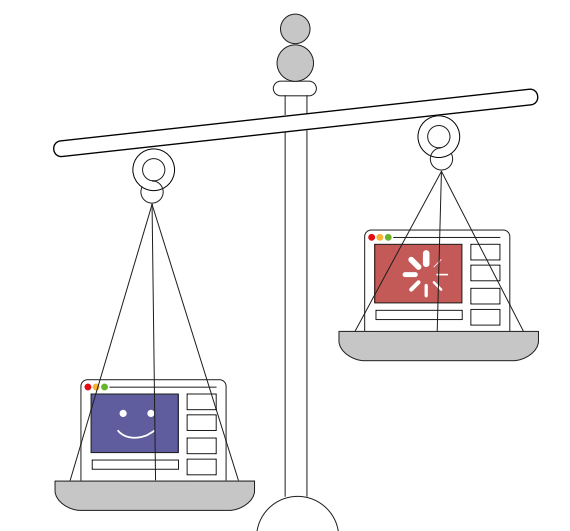
- Arcep is the body responsible for implementing and enforcing net neutrality in France. It also works within BEREC, the European Body of Electronic Communications regulators, on the application of the Open Internet regulation.

WHAT TO REMEMBER ABOUT 2019

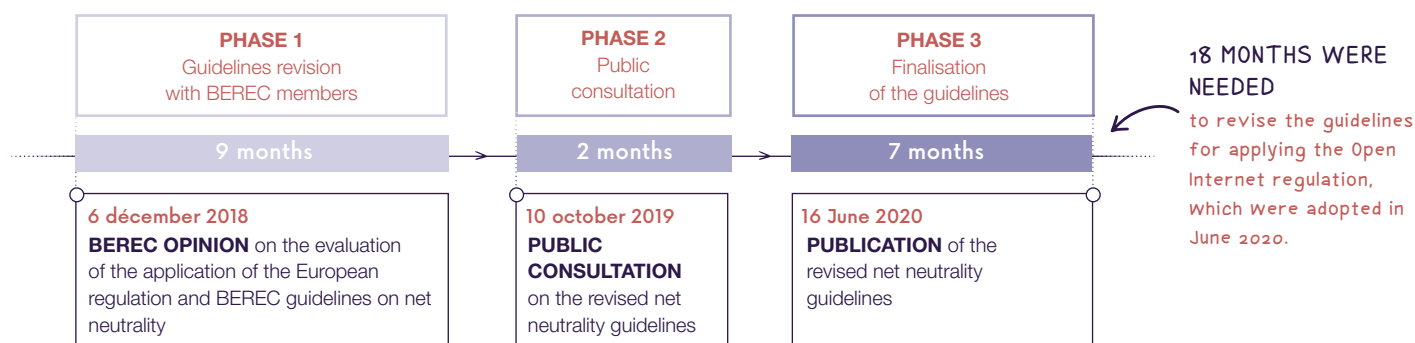
- **450 million European citizens** are protected by the European Open Internet regulation adopted in 2015, and the guidelines for enforcing this regulation.
- In France, Arcep has equipped itself with several tools to ensure compliance with net neutrality. The Wehe app was used more than **115,000** times in 2019, and **146** user reports were filed via the “J’alerte l’Arcep” platform.
- Arcep played an active role in the **revision of the guidelines** for applying the Open Internet regulation, within BEREC. The aim of this revision is to ensure even more harmonised application of the regulation by all of the players in France and Europe involved in making the internet run.

UPCOMING WORK

- Arcep will continue to **analyse** those practices observed in 2019 that could run counter to the Open Internet regulation, and will implement revised guidelines.
- Net neutrality rules will apply without any obstacle to **5G**. Arcep will keep a close eye on the development of 5G use cases, and maintain an open dialogue with stakeholders regarding any concerns over the compatibility of 5G and net neutrality.
- Teams from Arcep and Northeastern University are working on a **new version of the Wehe app**, incorporating a port prioritisation test. Blocking or prioritising a port can prevent users from accessing a particular service.



Net neutrality guidelines revision timetable



Source: Arcep

DEVICES AND PLATFORMS

TWO STRUCTURAL LINKS IN THE INTERNET CHAIN

2020

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WHY IS IT IMPORTANT?

- ⌚ Although it introduces the overriding principle of an open internet, the European Open Internet regulation contains measures that centre largely around the neutrality of the networks managed by ISPs. At the other end of the access chain, however, there are other players that also play a vital role in supplying internet access and content. They include device (smartphones, tablets, voice assistants) manufacturers and operating system, browser and app store providers.

WHAT DOES ARCEP DO?

- ⌚ To guarantee an open internet from end to end, and to give users more choice, Arcep issued a series of proposals whose purpose is to guide operating system providers' practices: data-driven regulation, ensuring market liquidity, lifting some of the restrictions that key device market players impose artificially on users and app developers. The proposed courses of action can be applied on a national scale, and help foster actions taken at the European level.

WHAT TO REMEMBER ABOUT 2019

- ⌚ On 19 February 2020, the Senate voted unanimously to adopt the bill on guaranteeing **consumers' freedom of choice** in cyberspace. It will give Arcep powers to ensure device neutrality and platforms' interoperability.
- ⌚ On 24 February 2020, Bruno Le Maire, France's Minister for Economy and Finance, and Cédric O, Secretary of State for Digital Affairs, created an inter-ministerial team whose members include the main French authorities, including Arcep, and whose purpose is to submit proposed courses of action with regard to **structural digital platforms**.

- ⌚ In a communication released in February 2020, the European Commission indicated that it was examining the possibility of introducing **ex ante regulation** designed to ensure that markets dominated by structural platforms remain open and accountable.

UPCOMING WORK

- ⌚ In late 2020 – early 2021, the European Commission will unveil its plans for **regulating digital platforms**.
- ⌚ Arcep will add dedicated access for app developers to the **new version of the "J'alerte l'Arcep" platform**. This will give them the means to report any OS or device-related issues to the Authority.



Photo Agency Srl / Alamy

Key findings from the 2019 Digital market barometer



INCORPORATE DIGITAL TECH'S ENVIRONMENTAL FOOTPRINT INTO REGULATION

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2020

Summary of the report on the state of the Internet in France



WHY IS IT IMPORTANT?

- A growing amount of attention is being paid to digital technology's environmental impact. According to sources¹, digital technology currently accounts for 3% to 4% of the world's greenhouse gas (GHG) emissions, giving it a carbon footprint equal to the airline industry. If this percentage is still small compared to other sectors, the ongoing annual increase in the use of digital technology² (volume of data, devices, etc.) should give us pause³.

WHAT DOES ARCEP DO?

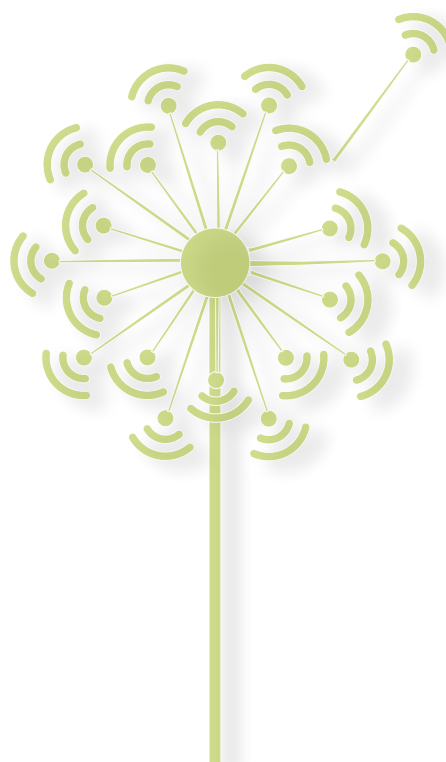
- Arcep's aim is for environmental issues to **open a new chapter in regulation**. This is a long-term ambition that aligns with the responsibilities it has been assigned by the legislator. Arcep wants its actions to be consistent with those carried out by public authorities, notably ADEME with which it is already working on several fronts.

WHAT TO REMEMBER ABOUT 2019

- As part of its "Future Networks" cycle of inquiry, Arcep published a brief on **digital tech's carbon footprint**, in October 2019.
- In April 2020, Arcep added an environmental dimension to its tool for collecting information from telecom operators, to gain a deeper understanding of the sector's environmental issues and challenges, and to be able to keep public policymakers and users informed on the **impact of their usage**.
- In early 2020, the Body of European Regulators for Electronic Communications (BEREC) created a new **expert working group** devoted to sustainable development, which is co-chaired by Arcep.
- Eight independent administrative and government authorities, including Arcep, published a working document on their role in and tools for tackling climate issues. All have made climate and environmental concerns part of their **priority courses of action** and work.

UPCOMING WORK

- Arcep has launched a **collaboration platform**: "*Achieving digital sustainability*". It is calling on interested associations, institutions, operators, digital industry businesses and experts to contribute, through a series of workshops. A report, to be published before the end of the year, will be an important milestone in this work, and in the work that Arcep is doing on environmental protection.
- The report will include a beta version of the **Green Barometer**.
- Arcep and Ademe are producing a joint study on digital tech's environmental issues, and will **work together** on the implementation of the Circular Economy Act for waste prevention.



¹ Shiftproject, Lean ICT: "Towards Digital Sobriety", October 2018; GreenIT, "Environment footprint of the digital world", September 2019.

² According to the latest "*Shift Project*" report in 2019, digital tech's GHG emissions are increasing at rate of around 8% to 9% a year.

³ Regarding the digital world's GHG emissions, in a Senate hearing on 29 January 2020, Hugues Ferreboeuf, head of the Shift Project, stated at that, at the current rate of increase, these emissions could triple digital tech's 2015 global footprint by 2025.

ARCEP'S MANIFESTO

NETWORKS AS A COMMON GOOD

Internet, fixed and mobile telecom, postal and print media distribution networks constitute the **"Infrastructures of freedom"**. Freedom of expression, freedom to communicate, freedom to access knowledge and to share it, but also freedom of enterprise and innovation, which are key to the country's ability to compete on the global stage, to grow and provide jobs. Because it is essential in all open, innovative and democratic societies to be able to enjoy these freedoms fully, national and European institutions work to ensure that these networks develop as a **"common good"**, regardless of their ownership structure, in other words that they meet high standards in terms of accessibility, universality, performance, neutrality, trustworthiness and fairness.

Democratic institutions therefore concluded that independent state intervention was needed to ensure that no power, be it economic or political, is in a position to control or hinder users' (consumers, businesses, associations, etc.) ability to communicate with one another.

The electronic communications, postal and print media distribution regulatory Authority (Arcep), a neutral and expert arbitrator with the status of quasi autonomous non-governmental organisation, is the **architect** and **guardian** of communication networks in France.

As network architect, Arcep creates the conditions for a plural and decentralised network organisation. It guarantees the market is open to new players and to all forms of innovation, and works to ensure the sector's competitiveness through pro-investment competition. Arcep provides the framework for the networks' interoperability so that users perceive them as one, despite their diversity: easy to access and seamless.

It coordinates effective interaction between public and private sector stakeholders when local authorities are involved as market players.

As network guardian, Arcep enforces the principles that are essential to guaranteeing users' ability to communicate. It oversees the provision of universal services and assists public authorities in expanding digital coverage nationwide. It ensures users' freedom of choice and access to clear and accurate information, and protects against possible net neutrality violations.

From a more general perspective, Arcep fights against any type of walled garden that could threaten the freedom to communicate on the networks, and therefore keeps a close watch over the new intermediaries that are the leading Internet platforms.