


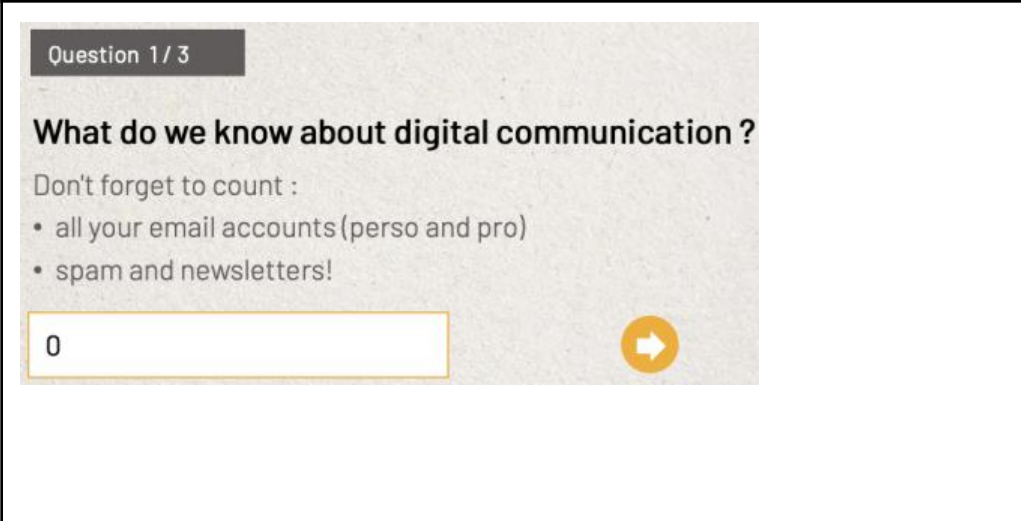

MOOC ENVIRONMENTAL IMPACTS OF DIGITAL TECHNOLOGIES

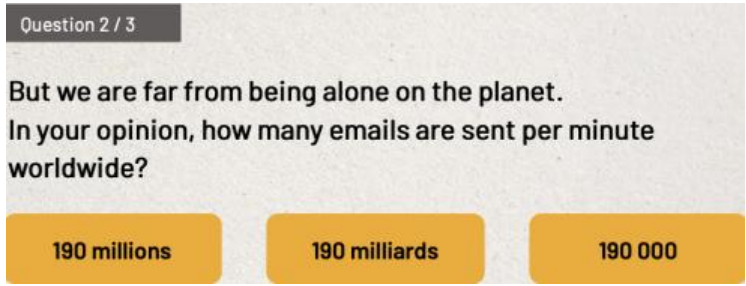
3.1 What part of digital technology has the greatest environmental impact?

Auteurs :

- Julie Delmas-Orgelet, DDemain / NegOctet
- Laurent Devernay, Simplon.co

To get started: What do we know about digital communication?

| Capsule slide | Related text |
|--|--|
|  <p>What do we know about digital communication ?</p> <p>Deployment of Internet and telecom networks have led to new modes of communication.</p> <p>Virtual communication is one of the most common services.</p> <p>In just a few clicks, we can send messages to the other end of the world within a few seconds.</p> <p>Let's find out about our own consumption !</p> | <p>What do we know about digital communication ?</p> <p>Deployment of Internet and telecom networks have led to new modes of communication.</p> <p>Virtual communication is one of the most common services. In just a few clicks, we can send messages to the other end of the world within a few seconds.</p> <p>Let's find out about our own consumption !</p> |
|  <p>Question 1 / 3</p> <p>What do we know about digital communication ?</p> <p>Don't forget to count :</p> <ul style="list-style-type: none">• all your email accounts (perso and pro)• spam and newsletters! <p>0 </p> | <p>Question 1 / 3</p> <p>How many emails do you receive on average per day?</p> <p>Don't forget to count :</p> <ul style="list-style-type: none">• all your email accounts (perso and pro)• spam and newsletters! <p>Write a number :</p> <p>Sending and receiving an e-mail is not as simple as it seems to be. To do so, there are hidden several hundred pieces of equipment: authentication servers, access servers, mail servers but also routers and switches on the network!</p> |

| Capsule slide | Related text |
|--|---|
| <p>A person usually receives about 39 emails per day!</p> <p>Sending and receiving an e-mail is not as simple as it seems to be. To do so, there are hidden several hundred pieces of equipment: authentication servers, access servers, mail servers but also routers and switches on the network!</p> <p>Before arriving at your mailbox, the email runs on average 15 000 km which requires thousands of km of cables!</p> <p>And the bigger the number of recipients, the bigger the number of equipment requested.</p> <p>Sources : Quelle est l'empreinte carbone d'un e-mail ? Futura Planète, 2019 La Face cachée du numérique : Réduire les impacts du numérique sur l'environnement, ADEME, 01/2021</p> | <p>Before arriving at your mailbox, the email runs on average 15 000 km which requires thousands of km of cables! And the bigger the number of recipients, the bigger the number of equipment requested.</p> <p>Quelle est l'empreinte carbone d'un e-mail ? Futura Planète, 2019, [Consulté le 13/12/2021]</p> <p>Source: En route vers la sobriété numérique, ADEME, 09/2022 [Consulté le 27/01/2023]</p> |
|  | <p>Question 2 / 3</p> <p>But we are far from being alone on the planet. In your opinion, how many emails are sent per minute worldwide?</p> <ul style="list-style-type: none"> ● 190 millions (correct answer) ● 190 milliards ● 190 000 |

Capsule slide

There are 190 million e-mails sent per minute worldwide

If we focus on this number of emails and on the amount of equipment used to send them, it becomes huge !

And this figure is constantly increasing, not to mention other means of electronic exchange.

Source : [Internet Minute 2020: What Happens on the Internet in 60 Seconds? themarketing introvert, 2020](#)

Related text

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Question 3 / 3

And email is just one communication service among others!
In the list below, what are the communication tools that you usually use?
Several answers are possible

| | | | |
|--------------------------------------|------------------------------------|------------------------------------|-----------------------------------|
| <input type="checkbox"/> Outlook | <input type="checkbox"/> Messenger | <input type="checkbox"/> Skype | <input type="checkbox"/> Signal |
| <input type="checkbox"/> Thunderbird | <input type="checkbox"/> Slack | <input type="checkbox"/> Whatsapp | <input type="checkbox"/> Facebook |
| <input type="checkbox"/> Gmail | <input type="checkbox"/> Teams | <input type="checkbox"/> Tik Tok | <input type="checkbox"/> LinkedIn |
| <input type="checkbox"/> Hotmail | <input type="checkbox"/> Discord | <input type="checkbox"/> Instagram | <input type="checkbox"/> Zoom |

Question 3 / 3

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| Thunderbird | Slack | Whatsapp | Facebook |
| Gmail | Teams | Tik Tok | LinkedIn |
| Hotmail | Discord | Instagram | Zoom |

Feedback 1 : You're reasonably "connected" (if you've chosen between 1-5 tools)

If you find that you are no longer using certain tools, why do you keep them? And otherwise, don't forget to clean up your messages regularly.

Useless multimedia content often takes place on our equipment and on servers.

Feedback 2 : You use multiple tools of communication ! (if you've chosen between 6-10 tools)

But are you sure you use all these tools? Could you decrease this list ?

Reduce the number of services, recipients, messages not forgetting to regularly clean them up!

Useless multimedia content often takes place on our equipment and on servers.

Feedback 3 : You're ready to communicate everywhere ! (if you've chosen between 11-15 tools)

But are you sure you use all these tools? Could you decrease this list ? Reduce the number of services, recipients, messages not forgetting to regularly clean them up!

Useless multimedia content often takes place on our equipment and on servers.

More and more communication tools!

In the 1990s, SMS was limited to 160 characters and an e-mail could be sent only via a computer.

30 years later, our ways of communication have changed significantly.

We have multiplied our tools and have gone from a few written characters to hundreds of photo and video content sent almost instantly from our mobile phones.

So, is this all virtual? Doesn't this have any impact? It's not that simple...

Sources : [SMS definition of wikipedia \(Short Message Service\)](#)
[Petite histoire du SMS - Les essentiels de Jamy, YouTube, 05/2018](#)

**What do we know about digital communication ?
More and more communication tools!**

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Crédits :

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|--|---|
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| <p>Pedagogical team :</p> <ul style="list-style-type: none">● Laurence Farhi, Tatiana Khomenko, Inria Learning Lab● Sophie de Quatrebarbes, S24B for Class'Code | <p>With the support of the Minister of National Education, Youth and Sport and UNIT.</p>  <p>UNIT  MINISTÈRE DE L'ÉDUCATION NATIONALE, DE LA JEUNESSE ET DES SPORTS <i>Liberté Égalité Fraternité</i></p> |
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