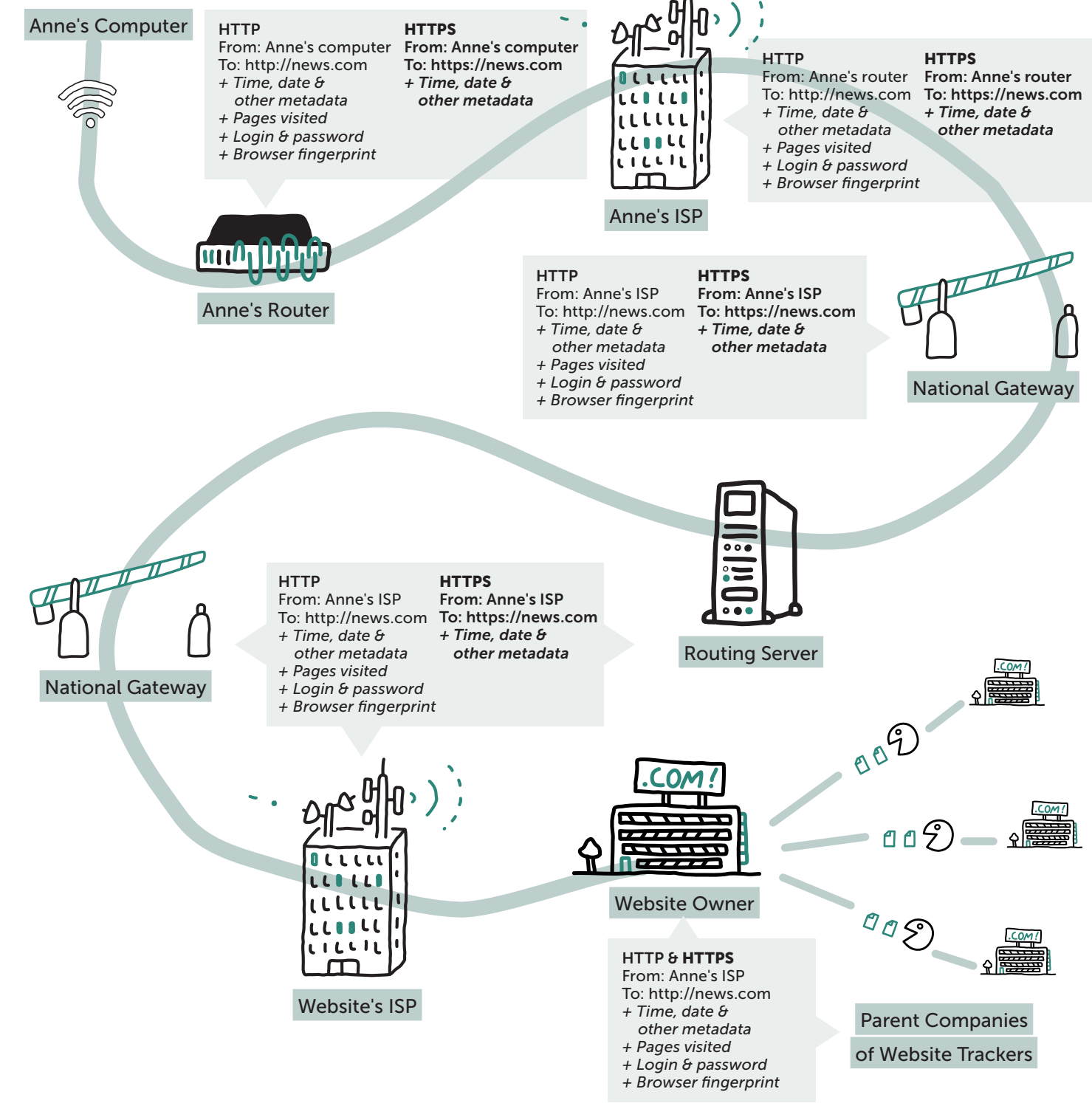


HOW THE INTERNET WORKS: BROWSING



Anne visits news.com and logs in to her account. This diagram shows what can be collected along the way, depending on whether she connects to the website via http or https (shown as http:// or https:// in the browser bar).



Notes

1. This is a simplified representation. Your traffic will pass through many more pieces of infrastructure.
2. Data travels in both directions. You send a request to the website server, and it sends a response back.
3. Every device in the diagram has a unique identifying MAC address. This includes your computer.

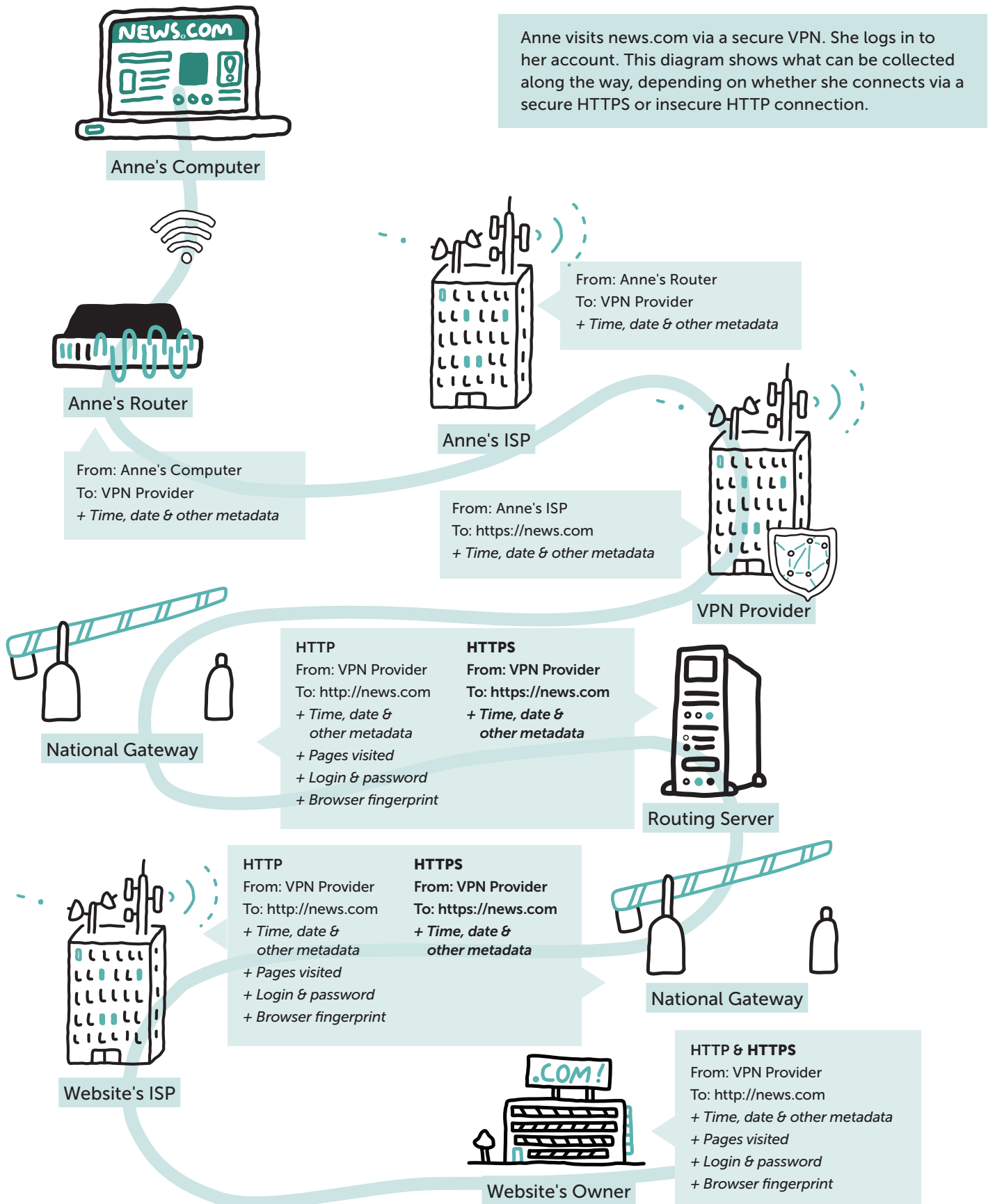
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HOW THE INTERNET WORKS:

BROWSING VIA VPN



Anne visits news.com via a secure VPN. She logs in to her account. This diagram shows what can be collected along the way, depending on whether she connects via a secure HTTPS or insecure HTTP connection.

Notes

1. This is a simplified representation. Your traffic will pass through many more pieces of infrastructure.
2. Data travels in both directions. You send a request to the website server, and it sends a response back.
3. Every device in the diagram has a unique identifying MAC address. This includes your computer.

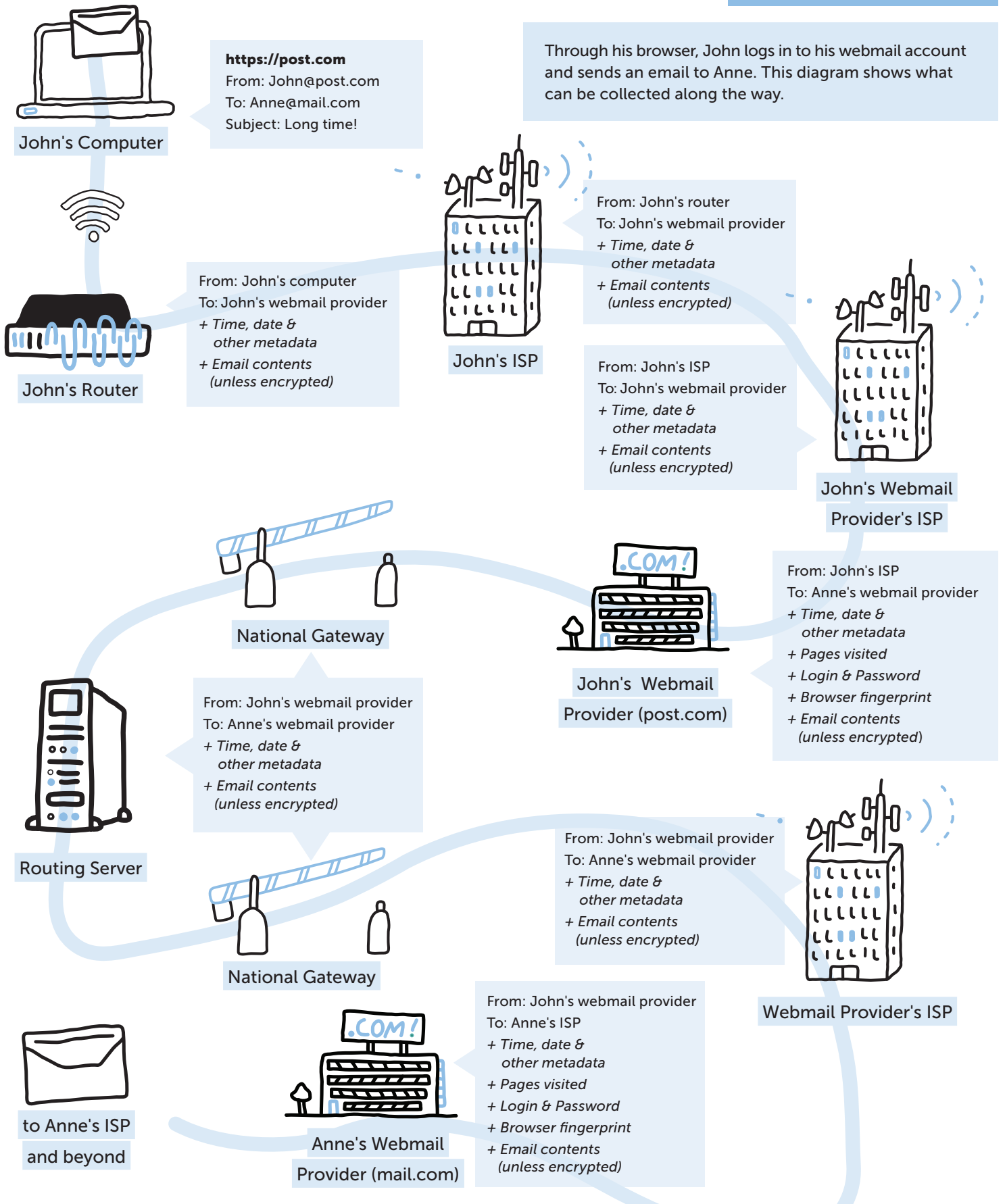
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HOW THE INTERNET WORKS:

WEBMAIL



Notes

1. This is a simplified representation. Your traffic will pass through many more pieces of infrastructure.
2. The diagram assumes a secure HTTPS connection between John's computer and his webmail provider.
3. Data travels in both directions. You send a request to your email provider, and it sends a response back.
4. Every device in the diagram has a unique identifying MAC address. This includes your computer.
5. The only way to be 100% sure an email is encrypted is to do it yourself, using something like GPG.

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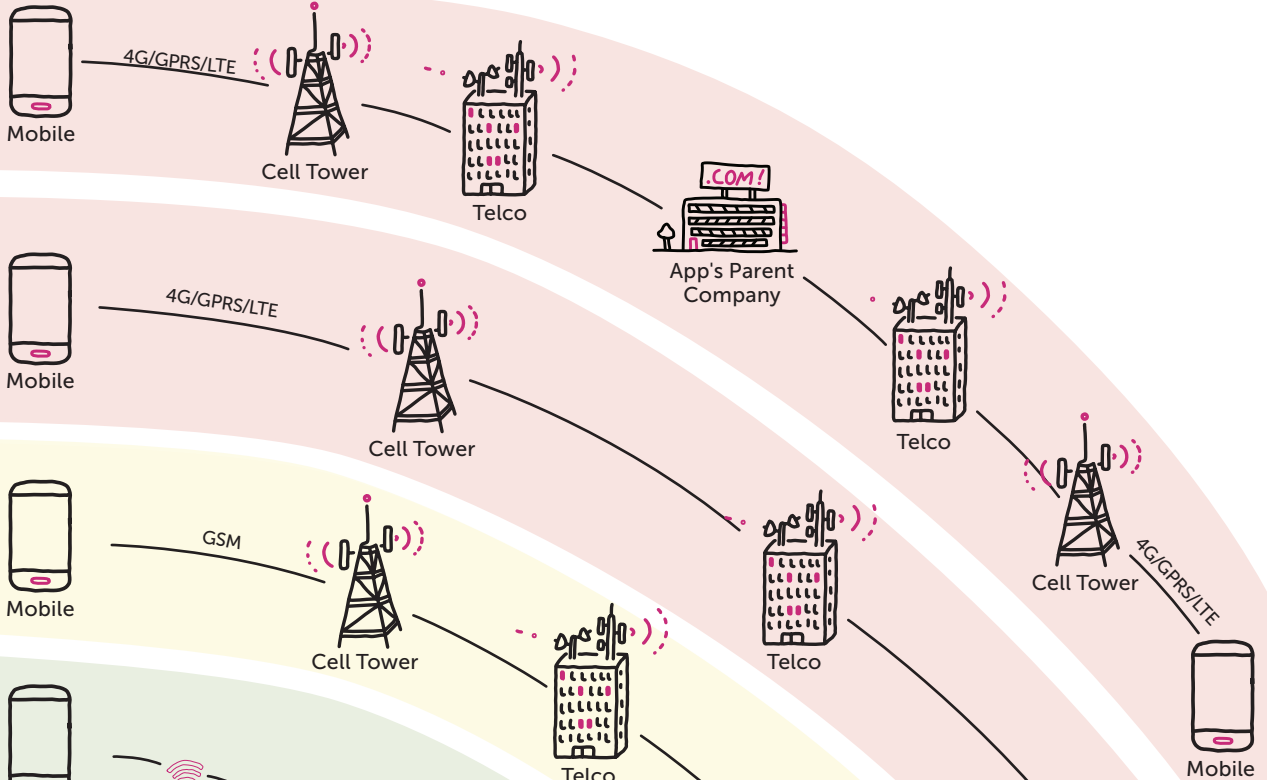


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HOW MOBILE COMMUNICATION WORKS

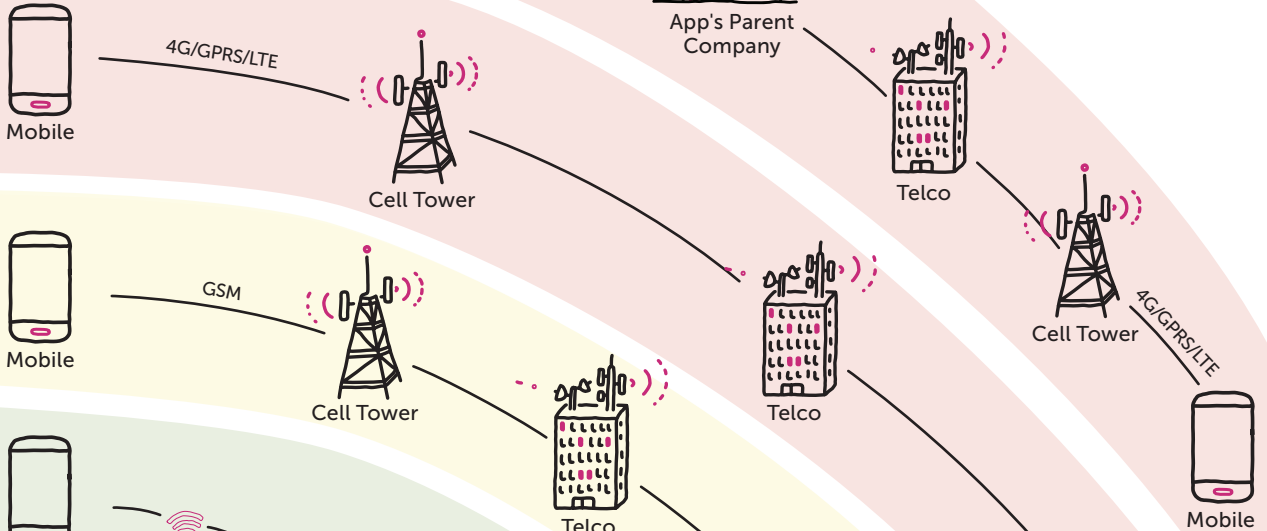
Chat Apps

via mobile data
(4G/GPRS/LTE)



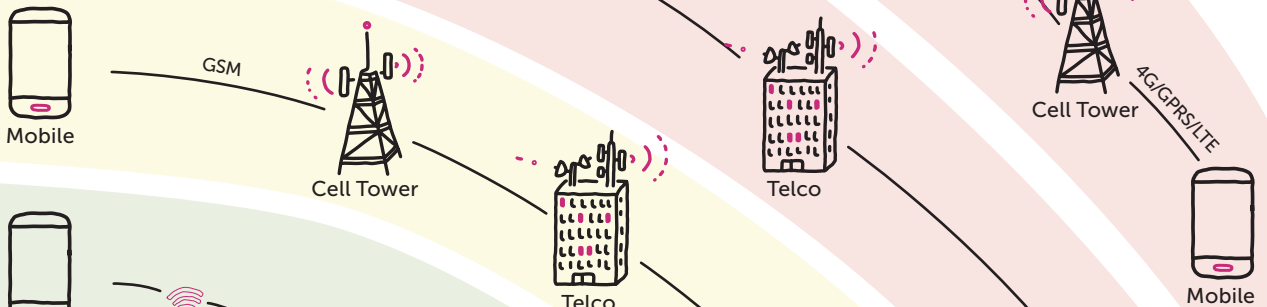
Browsing

via mobile data
(4G/GPRS/LTE)



Calls/SMS

via GSM



Chat Apps

via Wi-Fi



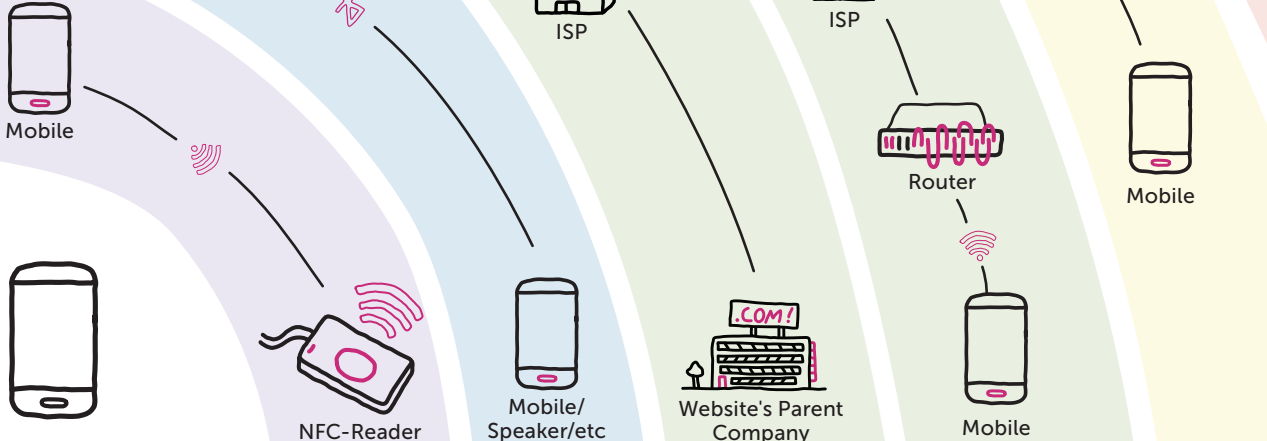
Browsing

via Wi-Fi

Bluetooth



NFC



Notes

1. Each colour in the diagram represents a specific frequency band of the radio spectrum.
2. This is a simplified representation of mobile communication.
3. Your communication passes through many more pieces of infrastructure, including servers and national gateways. Each parent company also has its own ISP.



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GLOSSARY



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GPRS/3G/4G/LTE

Wireless mobile telecommunications technologies.



Bluetooth

Wireless technology that allows devices to connect and exchange data over short distances



Browser fingerprint

Unique identification pattern created by the specific configuration and use of your device (language settings, browser version and type, display resolution, etc). Shared by your browser.



Browser history

List of web pages you've visited, usually recorded by default by your browser.



Cell Tower

Elevated structure that houses antennas and equipment that support cellular communications.



GSM (Global System for Mobile Communication)

Standard mobile telecommunications protocol that provides wireless transmission of voice calls and SMS.



HTTPS

Protocol that creates an encrypted connection between your device and a website. Shown as **https://** or a small lock symbol in the browser bar, instead of the default **http://**.

IP (Internet Protocol) address

Unique number assigned to each device connected to a computer network or the internet, enabling it to exchange data with other devices on the network. Your IP also shows *where* you are connecting from

213.108.
108.211



ISP (Internet Service Provider)

Company or organisation that provides your internet connection.

FO:87:E1:
15:A6:43

MAC (Media Access Control) address

Unique number assigned to each device, enabling it to connect to, and be identified on, the network.



National Internet Gateway

Physical infrastructure through which internet traffic travels across national boundaries.



NFC (Near-Field Communication)

Protocol that enables communication between two devices over a very short distance: e.g. smartphones, or a smartphone and an NFC Reader.



Router

Device that connects and directs internet traffic (e.g. connects 'home' devices to the internet).



Server

Combination of computer program and device that provides specific services for other computers to access (for example hosting a website or routing traffic from one point to another).



Telco (Telecommunications Company)

Provides your connection to a telecommunications network.



Wi-Fi

Technology that enables network connectivity via radio waves (wireless), enabling devices to connect to computer networks.