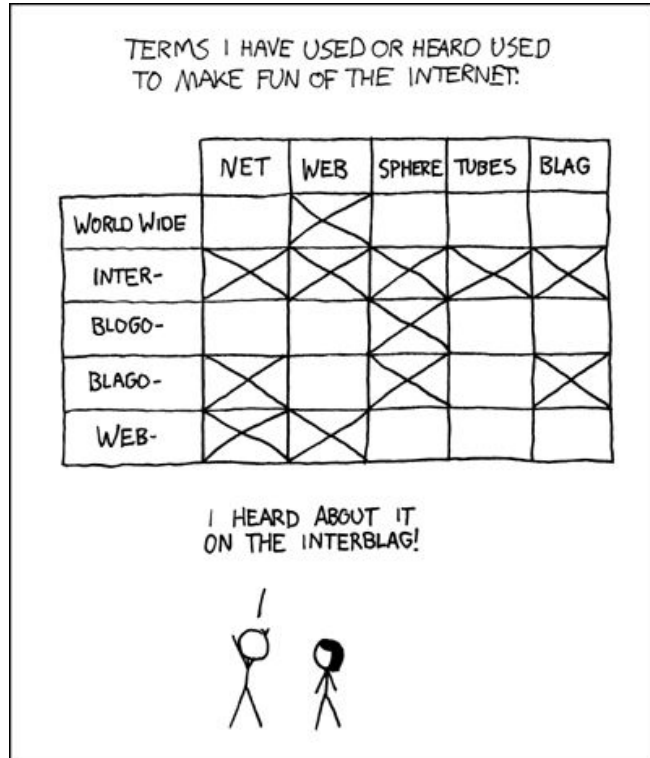




Welcome to the Internet

What is the Internet?



The Internet (or as my favorite square from that chart says, the Blagoblag) is a hugely important part of our lives.

This unit, we're going to be doing a dive into the **how** of the Internet! We'll be answering questions like:

What is the Internet?

How does it work?

What impact has the Internet had on society?

What is the Internet?

At its core, the Internet is a **philosophy** of making information and knowledge open and accessible to **everyone**. As the world becomes increasingly interconnected, we become further able to share the vast wealth of knowledge with any and everyone who has a connection to the Internet.

Physically, the Internet is a **network of networks** - it allows devices from all over the world to connect to one another.

It all works because it's built on open, agreed-upon **protocols**!



Protocol

A **Protocol** is a widely agreed upon set of rules that standardize communication between machines. If there wasn't an agreed-upon protocol, discussion between devices would be difficult, as it would be as if every computer were speaking a different language.

Protocols like ASCII allow computers to agree to send, store, and interpret data in the same way, enabling them to efficiently communicate with one another.



What is the Internet?

Most basically, the Internet is a way for all machines to communicate with one another, and for us as humans to communicate with one another through them! As long as two human beings have access to the Internet, they can communicate with one another across any distance.



The Internet is Massive

In the year **2005**,

- 16% of the world was online
- 51% of the developed world
- 8% of the developing world



The Internet is Massive

In the year **2005**,

- 16% of the world was online
- 51% of the developed world
- 8% of the developing world

If we fast forward to **2014**,

- 40% of the world is online
- 78% of the developed world
- 32% of the developing world



The Internet is Massive

In the year **2005**,

- 16% of the world was online
- 51% of the developed world
- 8% of the developing world

In **2020**, almost **59%** of the global population was online.
That's roughly 4.6 *billion* people!

If we fast forward to **2014**,

- 40% of the world is online
- 78% of the developed world
- 32% of the developing world



The Internet is Massive

According to current statistics, there are:

9,290 Tweets sent



The Internet is Massive

According to current statistics, there are:

9,290 Tweets sent

88,594 Google searches



The Internet is Massive

According to current statistics, there are:

9,290 Tweets sent

88,594 Google searches

Almost **3 million** emails sent (~67% of which is spam)



The Internet is Massive

According to current statistics, there are:

9,290 Tweets sent

88,594 Google searches

Almost **3 million** emails sent (~67% of which is spam)

108,165 GB of Internet traffic



The Internet is Massive

According to current statistics, there are:

9,290 Tweets sent

88,594 Google searches

Almost **3 million** emails sent (~67% of which is spam)

108,165 GB of Internet traffic

EVERY SECOND



The Internet is Massive

According to current statistics, there are:

9,290 Tweets sent

88,594 Google searches

Almost **3 million** emails sent (~67% of which is spam)

108,165 GB of Internet traffic

EVERY SECOND

If you want to see more stats for yourself, you can go to

<https://www.internetlivestats.com/>



Impact of the Internet

- Collaboration
 - People around the world can work on projects together
- Communication
 - No matter where you are, you can get in contact with your loved ones
- Dissemination of information
- Crowdsourcing
 - People come together to fund good causes all the time
- Anonymity
- Censorship
 - There are legal and ethical concerns about both of these topics



Communication

- Email
- Video Calls
- Social Media
- Digital Learning



Collaboration

The Internet has opened up avenues for all sorts of collaboration across any distance.

Campaigns like #match4lara have crowdsourced the diversification of the bone marrow registry.

Scientific programs such as Foldit and Folding at Home are crowdsourcing research on the folding of proteins! Foldit has players attempt to solve problems manually, where Folding at Home has volunteers contributing computing time to the problem, which allows exponentially more simulations to be run than on a single device.



E-commerce

Online shopping allows consumers to purchase goods directly from retailers, without the need to get out of their homes.

It also enables creators who don't have the funds to run a physical store to sell their wares - sites like Etsy consist of all manner of different such sellers.

Consumers are also able to get the best possible deal on any given product, and aren't disadvantaged by their location or lack of knowledge.



E-commerce

Crowdfunding is also a huge sector of e-commerce. Sites like Kickstarter, IndieGoGo, and GoFundMe allow people from all over to contribute to ideas or causes that they find worthy of their money.



Freedom of Information

There are 2 sides to this coin:

There is a vast wealth of information available for anyone to access. People can learn whatever they want on the Internet, via sites like SkillShare, YouTube, or any number of different scientific publications. You don't need to be attending a research institution to gain access to high-level scientific research!

On the other side of the coin, sites like Wikileaks exist. There is possible danger in classified secrets becoming public, or having military plans be known by all.



Online Learning

Especially right now, online learning is a growing sector of Internet traffic!

Learning all around the world is becoming more blended in general, and online courses are available in a wide variety of different subjects.



Entertainment

All kinds of entertainment are made possible by the existence of the Internet, from streaming like Netflix and Hulu to online gaming! People have the ability to go viral on a variety of social media platforms, and online gaming (and the viewership of it) is an ever-growing sector.



Entertainment

All kinds of entertainment are made possible by the existence of the Internet, from streaming like Netflix and Hulu to online gaming! People have the ability to go viral on a variety of social media platforms, and online gaming (and the viewership of it) is an ever-growing sector.



Complications

There are definitely downsides to the freedom of information interchange made available by the Internet.

- Access to copyrighted material
- Anonymity
- Censorship



Access to Copyrighted Material

Peer to peer networks allow people to share whatever content they want. Often times, the content being shared is not owned by the people sharing it.

With the powers of the Internet, it's easier than ever to distribute information or content that is not your own, or to gain access to things when you haven't paid for them.



Anonymity

One big question that arises in discussions about the Internet is how identifiable Internet users should be. Several things can arise from this anonymity -

- Equality on the Internet
 - If all users are anonymous, users won't be targeted or discriminated against
- Cyberbullying
 - If all users are anonymous, no one is accountable for their actions



Censorship

Should Google display search results that have explicit or illegal content?

Should a government be able to filter what content its citizens see on the Internet?

These questions and more are being posed by corporations and governments in discussions of how the Internet should be made available for people.



The Blagosphere

Many areas of our lives are impacted by the Internet, sometimes in ways we don't even recognize.

Through this unit, we'll be learning the **how** of the Internet, along with diving a little deeper into the impacts it has on society as we know it.

