

Overview

Our final project presents an interactive map showcasing the evolution of internet usage worldwide from 1990 to 2020. Through this visualization, users can explore the saturation of internet access across different countries over the past three decades. By employing a dynamic slider interface, coupled with an intentional colorway, users can navigate through time intervals of 10 years, allowing for a comprehensive understanding of how internet adoption has evolved globally.

Motivation

We wanted to see the growth of internet usage throughout the world and see if any correlation can be found with how we view internet usage today. To make this visualization as simple and understandable as possible, we decided to make a map graph that shades each country depending on their population percentage of internet usage. Our motivation for this data visualization was the current state of the world in terms of internet use to spread news. From the Covid-19 Pandemic to current wars, internet use has evolved and connected people in various ways. Social media is a big part of this connection and has allowed people to be involved in topics no matter where they are in the world.

Related Work

A visualization that spoke to the motivation behind this work was a radial graph displaying the median years for each country. This picture depicted immense variation from country to country, as well as continent to continent. For example, the median age in Africa is 18 years old, meanwhile in Europe it is 42. Throughout the article, the author addresses potential reasons for this concerning discrepancy, ranging from poverty, warfare, disease, and lack of access to resources like education and opportunity. With these staggering figures and stark comparisons, we began to consider what opportunities could begin to even out the playing field. Our immediate thought was universal internet access, hence the start of this project.

Questions

Throughout our project, we sought to address several key questions: How has internet usage evolved across the globe since its inception? Are there discernible patterns or disparities in internet adoption across different regions and countries? What factors have influenced variations in internet saturation rates over time? By refining our questions, we aimed to uncover deeper insights into the dynamic of internet usage on a global scale.

Data

We obtained our data from WorldBank.org's Data Bank. They provided CSV files containing the year, country, and percentage of population using the internet. This data was collected for their World Development Indicators, helping them score a country by their development. We also obtained data from WorldBank.org's Data Bank for total population. The total population of each country and the percentage of population using the internet was divided by each other to get the total population number using the internet per country.

Design Evolution

The initial and obvious choice to represent our data in a straightforward fashion is a map. In terms of focusing on how to show the variation from year to year, the team used a button to cycle through every year where data was available, eventually evolving to a slider. The interval of the slider is 10 years, which made sense for the data we have, as there is no data available for some years, so we felt comfortable leaving some out as they were not relevant to our main project question. Once we got this out of the way, we began to focus on smaller cosmetic fixes, such as heading color, font choice, and text alignment. We used the d3 library [examples](#) to help us create our map visualization.

Implementation

The main elements of our design are our interactive slider, and the intentional color gradients on the countries used to show the internet usage. For example, North America in 2020 is overall a much darker blue than in 1990:



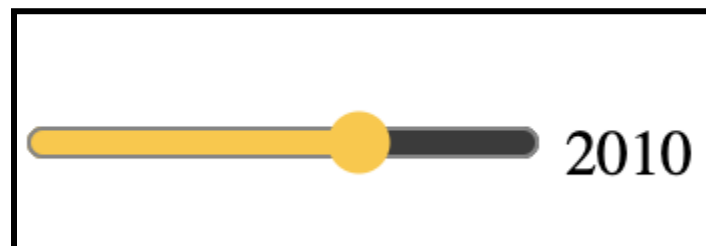
North America internet usage in 2020



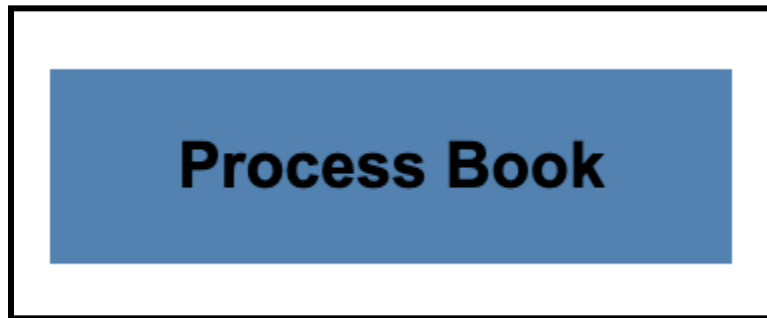
North America internet usage in 1990

The darker, more saturated blue is intended to create the visualization of saturated internet usage within a country.

The interactive slider is used to switch between different years in our data of population of internet usage. The interactive slider goes through 4 years, 1990, 2000, 2010, and 2020 where it sets the data to the respective year chosen.



The Process Book is linked to the website by a button displayed on the bottom right corner of the visualization. Upon button click it will display a pdf version of the process book.

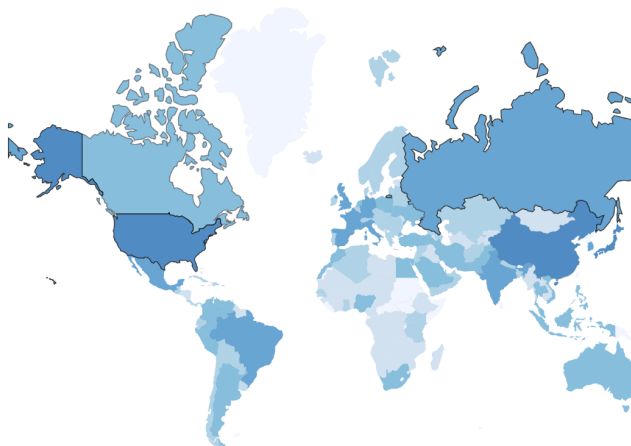


Evaluation

Our visualization successfully achieves our goal of providing a clear and insightful portrayal of internet adoption trends worldwide. By enabling users to explore temporal changes in internet penetration rates, our visualization facilitates a deeper understanding of the global digital landscape and its implications for society.

World Map of Internet Usage

By: Kendall Haddigan, Andrew Sosa, Nicolas Whalen



2010

Process Book