UNSCHOOL

Digital Footprint Report

Exploring the Sustainability Impact of the UnSchool's Digital Communication

Researched and Written By Laura Secorun
With introduction and policy additions from Leyla Acaroglu

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About the Author

Laura Secorun is an investigative journalist reporting on human rights and the environment for international outlets like *The New York Times*, *The Guardian*, *Foreign Policy*, *Newsweek*, and others. She holds a Master's degree in International Journalism by City University along with a post-graduate certificate in Systems Thinking by Cornell University, and she is a trained educator of the UnSchool's Disruptive Design Method.

About the UnSchool

The UnSchool of Disruptive Design is a global experiential knowledge lab dedicated to supporting a rapid transition to a sustainable and regenerative future by design. The UnSchool designs and runs immersive learning experiences around the world and online. We develop tools and resources that support professionals adopting systems thinking, sustainability sciences and design for activating positive changemaking. We have a global community from over 45 countries and are dedicated to pioneering change for a sustainable and regenerative future.

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Why this Report?

This report came about as a result of a long-standing set of questions that I have had about how to do ethical marketing and better understand the impacts of our digital communications. As the founder of the UnSchool, I am committed to uncovering the impacts of our actions and then developing new ways of building positive change. The author of this report, Laura Secorun, was invited to support us in developing an ethical and sustainable communications plan, and to get started, she proposed an exploration of the social, economic and environmental impacts of our outward communications. I was excited to get some perspective shifts on the ramifications of the choices that we, as a small organization, make in communicating with our community.

As you will find in these pages, the internet and the services we are now all relying on to communicate, market and connect are all implicated in the global sustainability challenges that we collectively face. Conducting a digital footprint assessment has helped us rethink the way we do business and engage with our community, as well as reconsider what platforms we invest in as a socially-minded organization interested in affecting change by design.

As soon as Laura provided us with the audit of our external communication tools, the team and I immediately wanted to know what this was like for our internal communication approaches as well. The tools we use daily to support a distributed team and conduct general operations also have implications that we were eager to learn more about. Gaining all these new insights ignited the development of a new Sustainable Communications Policy.

One of the key things that Laura shared with us early on that has stuck with me is that the internet is physical. What appears on face value to be ethereal is not; each word I type connects to a server, which is hosted in a warehouse, which is being powered by energy mined from the planet. Each video we upload or watch draws down data that follows real-world pathways before it eventually ends up magically on my device. The tweets, emails, posts and searches all have impacts, just as our consumption and lifestyle choices do too.

This report is a snapshot of one small organization's digital impacts. It explores our outward and inward communication platforms, enabling us to make a more informed set of choices around how we do what we do, to reduce our impacts and to increase our agency over the kinds of companies we want to invest in. There is, of course, much more to explore, and over time we hope to expand our knowledge and understanding of the impact of our digital actions.

I hope this report informs and supports you, too, in reflecting on your digital footprint, both personally and professionally, and enables other organizations to start this important conversation around the impacts of our digital actions.

Leyla Acaroglu, founder The UnSchool, October 2019

Executive Summary

This report focused on investigating the impacts of the UnSchool's communication strategies, specifically, in Phase I, investigating the tools that the company uses to interact with its audience online -- from its website to social media. In Phase II, the tools used internally to communicate and conduct work via remote working were assessed for productivity, feasibility and sustainability. In Phase III, the founder of the company synthesized and developed a sustainable communications policy built off the investigation conducted to inform the next steps in achieving the goal of a sustainable, ethical and effective communication and productivity strategy.

Methods Used

This research project used the [Disruptive Design Method](#) as its blueprint. Phases I and II began with *Mining* — to unearth all key elements in the sustainable communications challenge — and then *Landscaping* — to connect these components and put parts into practice through recommendations. These enabled Phase III: *Building* a sustainable solution, informed by all this new knowledge.

The data sources for this research were largely public, including numerous academic papers, expert essays, and media reports. Other details were gathered from the companies' own websites and investor presentations. There were, however, certain instances where the researcher had to contact customer representatives directly in order to answer technical questions.

Overview of Phases of Exploration and Development

Phase I: External Communication Strategy

We looked into three different categories of impact: Social — effects on society and personal health (including mental), safety and agency of the community; Environmental — effects on air, water, land, biodiversity and climate; and Economic — effects on cost, scalability, financial autonomy and return on investment.

What we found was that the UnSchool's digital communication strategy is generally sustainable, especially when it comes to its carbon footprint. Yet there is still room for improvement, especially when it comes to minimizing social impact through the platforms that are selected and utilized as part of their communication eco system and developing more economically sustainable strategies in order to not overwhelm their small and dynamic team.

The outcomes of Phase I include a comprehensive assessment of the impacts of all platforms being currently used by the UnSchool for external communications, as well as a set of recommendations on how to reduce the organization's digital footprint and ideate new, more sustainable practices.

There is, however, not always a definite best practice. Digital communication is a highly complex arena, so certainly many of these choices will require trade offs, often between different aspects of sustainability.

Phase II: International Communication Strategy

In this section, we considered the impacts the UnSchool's internal communications strategy. To that end, we analyzed the social, environmental and economic effects of tools that the UnSchool team uses to manage day-to-day operations, collaborate on projects and generate some of the materials which will then be shared publicly.

As in Phase I, the outcome of this research was a thorough assessment of each tool's major impacts and a series of recommendations for how to lessen those negative consequences going forward. For that purpose, we also provided a list of vetted alternatives to the least sustainable tools identified in Phases I and II of the report.

The UnSchool now possesses the necessary information to move into Phase III and develop policies that will bring its communication strategy in alignment with the principles it teaches, as much as it is possible.

Phase III: Policy Development

As a result of the research conducted and the recommendations presented, the founder of the UnSchool, Dr. Leyla Acaroglu responded with the development of a new Digital Communications Policy to support the adoption of better practices.

Introduction to Digital Impacts

The last decade has witnessed the explosion of digital communication technology. Today, half of the global population — 3.9 billion people (International Telecommunication Union, 2019) — uses the internet, and the number of networked devices is expected to reach three times (Cisco, 2019) the global population by 2022.

This growth comes with incredible opportunity (Global e-Sustainability Initiative, 2019), but also with serious impacts, as the Internet is made up of interconnected physical structures consuming vast amounts of natural resources. The internet is very much a physical thing, yet most people engaging with it assume it is entirely 'digital'. Whenever we visit a website, binge Netflix or share a tweet, information must transfer from one physical server to another physical device. This transfer uses energy, which in today's world means burning fossil fuels, mining resources and ultimately contributing to unsustainable resource use.

These vast decentralized networks of servers are also controlled by governments (Koch, 2019) and private companies, many of which have unprecedented control (Kari, 2019) over the market whose choice of privacy policies or algorithmic preferences have the potential to affect people and elections (Meyer-Resende, 2018) around the world.

Unlike powerful companies of the past who controlled the supply of physical resources, these digital behemoths are deeply intimate with their users, gaining insights, access and power over their

preferences, opinions and behaviors.

As social creatures (Bernhard, 2010), we use these often addictive sites to communicate with our community in ways that can affect our psychological state and overall well-being. This is becoming more and more evident as research into not only the physical and mental health impacts of 'screen time' increases, but also the understanding of the dark patterning (Brignull 2019) techniques used by digital designers.

But it is also vital that in this age of ever-increasing digitization, along with social media marketing and a competition for attention, that enterprises understand the impact of their digital actions.

Trying to operate responsibly in this ever-changing landscape can be very difficult. And socially-motivated organizations seeking to engage with their community and operate sustainably online are just as baffled by the shifts in digital communications as the average person wanting to connect with their friends and family.

This report attempts to facilitate this decision making by providing a set of comprehensive insights on the impacts of this industry and researched-backed recommendations on how to reduce them. Just as we check to see our carbon footprints, or adjust our purchasing practices to ensure that unethical labor markets are not be supported, we too now must know and adjust actions based on the impact of our digital footprints.

This report explores the impact of both external communication platforms and internal communication and business management platforms for a small, socially-motivated enterprise set and run by Disrupt Design: The UnSchool of Disruptive Design. It is intended to serve as a case study of the impacts of marketing actions for a socially and environmentally-motivated organization.

The questions explored herein are: What are the social, environmental and economic impacts of the UnSchool's digital communication strategies, and how can conscious and considered actions be taken to reduce these?

The method used to explore these questions is the Disruptive Design Method (DDM), developed by Leyla Acaroglu, along with academic-style research to substantiate our arguments and investigative reporting techniques to help verify company claims.

Following the DDM structure, Phase I will consist largely of Mining to help us gain clarity on the problem of sustainability and digital communications. The scope of our research will be the platforms that the UnSchool uses to communicate externally.

In Phase II, we will enter the Landscaping stage, connecting components and putting these parts into practice as well as broadening our research to include the tools that the UnSchool uses to communicate internally. For more details, go to section 4.2.

Finally, in Phase III, we begin Building a solution through the development of a comprehensive, sustainable communication strategy and a set of policies.

PHASE 1: EXTERNAL COMMUNICATION

Introduction

Since sustainability is all about working to harmonize the social, economic and environmental impacts of our individual and collective actions, the considerations of these three aspects of business in relation to the social and general communication platforms used by an organization interested in affecting positive change is vital.

Platforms Currently Used

The UnSchool currently uses the following platforms to communicate with its current and potential community: Facebook, Twitter, Instagram, Linkedin, Buffer, Thinkific, Medium and Squarespace.

1. Social Impact

In this section, we are going to explore the social impact of digital communication tools used to connect with our community and engage with potential customers in the form of social media marketing. To clarify, the term "social" in this content both means social media, the platforms we use to connect such as Facebook, Twitter, Instagram and LinkedIn, and also "social" as in the ways in which these companies affect the health (physical and mental), safety (including privacy) and agency of the people who both use them and are engaged with the day-to-day business operations of these social media companies. At this point, it is useful to distinguish between what could be called "internal" and "external" impact.

By "internal," we will be referring to the impact these platforms have on their own employees or contractors. Through "external," we will examine how their actions affect society at large, from their clients to their country's political system.

As a whole, the online communications industry has had a good track record of employee care and appears to be actively working to remedy its racial and gender imbalance. Since 2014, the percentage of Facebook's female workers has increased from 31% to 37 % and that of non-white employees have gone from 43% to 56% (Facebook, 2019).[1] That said, content moderators are often contractors who suffer from much worse working conditions, as we will see.

The most worrisome social impacts of digital communications belong to the "external" category. For one, these platforms may be generating addiction and negatively affecting the mental health of millions. Privacy rights violations are also a major concern as is their effect on democracy (Walther,

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[1] Silicon Valley companies operate around the world but their headquarters often lack diversity. 60% of women working in tech say they have experienced unwanted sexual advances (The Elephant in the Valley, 2019.) Only 2.6% of the Silicon Valley labor force is African-American and 6.4% Hispanic (compared to the all industry average of 14.5% and 13.8% respectively) (Holman, 2019). Asians are the largest racial cohort of professionals in the Valley and despite outnumbering white men and women in entry-level positions, yet are the least likely among all races to get management and executive roles - particularly Asian women (Gee, 2015).

2014).

In the aggregate, these effects appear highly mixed --- while some claim social media increases depression and loneliness (Hunt, 2018), other studies show no effects (Huang, 2017). Some even indicate using these platforms (alongside other information and communication technologies) may help decrease psychological distress over time (Hampton, 2019).

The issue of polarization isn't clear-cut either. While some fear the effects of "social media bubbles" (Himelboim, 2013) on democracy, others show their impact is minimal (Flaxman, 2016) (Boxell, 2017). This is why it's important to be very specific about which platforms are being used in which context.

1.1 Buffer Social Impact

Buffer[2] has a strong track record of employee care offering strong benefits and flexibility (Glassdoor, 2019). Their team could be more diverse — 76% are white — but they are highly transparent about this shortcoming, and 62.5% of the company's leadership is female (Buffer, 2019). They have complete transparency about their salary structure (Buffer, 2019).

Externally, Buffer appears to have no significant negative impacts, besides indirectly facilitating the use of other social media companies who could themselves have unsustainable practices. Overall, the company may even have a positive effect, sharing all their code on open source for others to use, as well as offering all of their services at a 50% discount to nonprofit organizations (Buffer, 2019).

1.2 Squarespace Social Impact

Squarespace[3] has a stellar reputation for employee welfare. While they are not forthcoming about diversity, 88% (Great Place to Work, 2019) of employees say it is a great place to work. Besides a comprehensive healthcare plan and vacation policy, the company matches any donations their employees make to a non profit of their choice — times two. (Squarespace, 2019)

In terms of external impacts, Squarespace powers the websites of thousands of small businesses, but, after the 2017 rally in Charlottesville, it came under scrutiny (Vocativ, 2017) for hosting the sites of several infamous white nationalists. The company took two months to bring those pages down after being prompted but publicly apologized. Its Acceptable Use Policy (section 6.2) forbids users to "advocate bigotry or hatred against any person or group based on their race, ethnicity, nationality, religion, gender, gender identity, sexual preference, age or disability" (Squarespace, 2019).

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[2] The UnSchool uses Buffer for scheduling its social media posts and tracking marketing analytics.
[3] The UnSchool uses Squarespace to host its website and send its newsletter.

1.3 Facebook Social Impact

Facebook has a staggering 1.5 billion (Facebook, 2019) daily active users, so their social impacts, whether positive or negative, tend to be vast.

The company has long been rated as one of the top tech companies to work for in the US (Dickey, 2018). Facebook provides great medical insurance and four-month paid leave for parents, plus lavishes employees with perks — including sabbaticals, time to volunteer and reimbursement for activities like yoga. (Facebook Careers, 2019)

Moderators

But the company also employs thousands of external content moderators, often sub-contracted in developing nations. And working conditions of these employees are starkly worse (Dwoskin, 2018) than those in the main office. An investigation by The Verge (2019) revealed that they get paid less than a tenth of an average employee's salary and are exposed to extremely traumatic imagery, with little to no psychological support. This results in high rates of PTSD, depression, addiction and suicidal thoughts among moderators (The Cleaners, 2019).

After months of public pressure, the company has finally addressed the issue and promised to make important changes (Sullivan, 2019): raising salaries and rolling out software to make the imagery less shocking (blurring faces or changing to black and white). In the meantime, the company continues to ramp up the number of moderators it uses.

Hate Speech

Their need for extra moderation comes from what's likely Facebook's most negative external impact to date: enhancing violence in Myanmar, which 700,000 Muslim Rohyinga (UN, 2018) have already fled to avoid what the United Nations has declared a "textbook example of ethnic cleansing" (UN, 2018). Marzuki Darusman, chairman of the U.N. Independent International Fact-Finding Mission on Myanmar said Facebook played a "determining role" in spreading misinformation and hate speech that led to violence (Miles, 2018).

A more recent investigation by Reuters (2018) lays out the many difficulties the company is still having to stop hate speech in the country.

Concerns about the spread of "fake news" also plagued Facebook during the most recent US election and Brexit votes, coupled with accusations of failure to protect user data from third parties trying to manipulate the electorate. Researchers estimate that Facebook advertising may have increased Trump voter turnout by 10% (Redoano, 2018), and other academics point out that Facebook's algorithm (designed to maximize platform usage) tends to fragment opinion and increase polarization (Sîrbu, 2019). This algorithmic trait may have been most successfully leveraged by the alt-right movement (Daniels, 2018).

Fundamentally, most criticisms about Facebook targeting come down to privacy violations. The

company sells user data to third parties, which makes it a prime tool for any actors trying to modify user behavior — from an innocent local bakery to an enemy state. Cambridge Analytica (CA) used the platform to harvest data on millions (Lapowski, 2018) of unwitting users and, when the Federal Trade Commission (FTC) investigated the issue, data practices uncovered in the company had repeatedly violated a 2012 order barring Facebook from deceiving users about its privacy practices as well as "a new set of deceptive practices" (Wong, 2019). The company paid a fine of $5 billion and took down the specific API (Constine, 2015) that CA used, but little else has changed as selling data to third parties is still its main source of revenue (Facebook, 2019).

Addiction

Facebook was designed to be addictive, as acknowledged by various former employees (Sloane, 2017) (Solon, 2018). The company leverages the socially-anxious nature of our brains (Gilbert, 2001) and the tools of gamification to create a highly engaging digital environment. Studies show that those who are addicted to the platform have lowered ability to delay rewards (Delaney, 2007) and make choices as impaired as drug addicts (Meshi, 2019).

Facebook claims to be trying to limit these addictive effects by rolling out a tracking and blocking feature (Ranadive, 2018).

1.4 Instagram Social Impact

Instagram has been owned by Facebook since 2012, so their employee policy is the same, with good pay, holistic healthcare and generous vacation time. The company too uses moderators to fact check the content (Harrison, 2019). Their work conditions are similar to those of their parent site. However, so far Instagram requires less moderators because Facebook is teaching AI how to identify offensive visual content (Tangerman, 2018), and, because of the nature of the platform, they are often less exposed to deeply violent and disturbing content.

That said, Instagram is increasingly being targeted for political aims and could, in the near future, suffer from similar uncivic impacts as Facebook. A report from the US Senate Intelligence Committee concluded that Instagram was just as an effective platform as Facebook for the disinformation campaign run by Russia's Internet Research Agency during the 2016 election (DiResta, 2018).

For now, one of the known social impacts of Instagram could be its effects on body satisfaction, particularly when it comes to young women. Instagram has been shown to negatively affect young women's beliefs about their appearance (Fardoluy, 2017), especially in those with already low self-esteem (Ahadzadeh, 2016), and it has also been linked to increased symptoms of anorexia (Turner, 2017).

These effects appear to occur mostly when looking at health and fitness imagery, which is not precisely the content that is shared by UnSchool. The company is also now allowing users to track their time on the app (Ranadive, 2018) and running a pilot in seven countries in which the number of post likes are hidden (Fitzgerald, 2019). What's more, image-based platforms such as Instagram have

been shown to help decrease self-reported loneliness in users, whereas more text-based platforms like Twitter do not (Pittman M, 2016).

1.5 Twitter Social Impact

Twitter appears to be a healthy work environment (Glassdoor, 2019), as employees in its headquarters enjoy a whole suite of benefits from medical and dental coverage, 401(k) savings plans to flexible vacation policies and in-office pilates. It is one of the most racially, gender and LGBTQ diverse companies in Silicon Valley, with a perfect score on their Human Rights Campaign Corporate Equality Index (HRC, 2019), and employee groups are given the resources to design their own advocacy initiatives on behalf of their communities. They were also the first corporate impact champion for the UN's global gender equality initiative (HeforShe, 2019).

But Twitter too has an issue with underpaid moderators. One of them spoke to the Washington Post (2019), saying, "At the end of a shift, my mind is so exhausted that I can't even think," adding he dreamed about being the victim of a suicide bombing or a car accident, his brain recycling images that he saw at work. Unlike Facebook, the company has not issued public statements about how they will improve this.

When it comes to individual use, there is scarce evidence of any negative effects on mental health, and in fact, Twitter appears to be useful in getting support (Shepherd, 2015) and combating stigma about these issues (Berry, 2017).

Another differentiating feature from similar social media platforms is that Twitter has a good track record of protecting users' data, and it only provides advertisers with publicly available information (Twitter, 2019). Also, through their account settings, they give users an easy way to control how much data the company can collect from them.

Regarding political manipulation and fake news, Twitter appears to have a much more localized effect than Facebook. A study (Grinberg, 2019) found fake news accounted for nearly six percent of all news consumption during the months before the 2016 election, but it was heavily concentrated — only one percent of users were exposed to 80% of fake news, and 0.1% of users were responsible for sharing 80% of fake news. Still, bots are rampant on the platform (Hindman, 2018) and it's algorithm is — as all other social media sites — designed to maximize engagement (Lanier, 2018), which means it may also lead to increased opinion polarization (Sîrbu, 2019).

1.6 LinkedIn Social Impact

LinkedIn has been the property of Microsoft since 2016, but unlike Instagram and Facebook, it continues to operate largely independently from its owner. Their employees policies are exemplary with comprehensive healthcare, long vacations , child care subsidies and other benefits, like in-house drycleaning and car wash (LinkedIn Careers, 2019). It was recognized as one one of the world's "Most ethical companies" of 2019 by the Ethisphere Institute, alongside its parent company, Microsoft (Ethisphere, 2019).

In 2018, LinkedIn admitted that it was using the email addresses of non-members — about 18 million of them — in a way that was not "transparent" (Lunden, 2018) but has since stopped the practice and implemented a robust and transparent privacy policy (LinkedIn, 2019). Most of its revenue comes from "talent solutions" (recruitment services) (Investopedia, 2018), which means the company is less encouraged to mine and sell private information about its users. When it comes to "fake news", the site has hardly any. Since the goal of the platform is professional advancement, there is less proliferation of ideological propaganda or divisive political content (Lanier, 2018) and moderation is rarely needed (Johnson, 2016).

1.7 Medium Social Impact

Medium appears to take good care of its employees, and most Glassdoor reviews agree it is a highly diverse and rewarding place to work (Glassdoor 2019). Beyond comprehensive health insurance, 401(k), paid time off, and lunch every day, the company offers its California-based team a generous education budget for each employee and onsite mindfulness options like meditation, yoga, and a gym membership reimbursement (Medium Jobs, 2019).

Because the platform is advertising-free, it does not participate in any of the most commonly socially disruptive practices of other online publishing tools. They do need to please marketers or promote sponsored content, which means their interface is not designed to generate addiction and users are not allowed to pay for reach — making it a more level playing field to share ideas in. The membership model prioritizes quality over quantity, which also keeps most clickbait and fake news at bay.

What's more, the platform gives readers ability to follow their favorite topics, writers, and publications so they are in control of their digital experience — unlike others (like YouTube) where it's largely AI that dictates what users see.

Finally, Medium has a solid track record of standing up to censorship. The governments of several states have asked the platform to take down content, and it has always refused, unless given proof the content was false (Medium, 2016). Since 2016. the site is banned in mainland China after publishing information from the leaked Panama papers (Milward 2016) and, in 2017, Egypt also blocked the site (Al Jazeera 2017).

1.8 Thinkific Social Impact

The Vancouver-based company[4] has less than 100 employees, 51% of whom are female (Thinkific, 2019). Reviews on Glassdoor praise the company's work culture, and the startup offers a strong package of benefits including comprehensive extensive medical care as well an open vacation policy, flexible work hours and funding for self education (GlassDoor, 2019).

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[4] The UnSchool uses Thinktific as the platform to host and run its online courses

1.9 YouTube Social Impact

YouTube has over 2 billion monthly users who, each day, watch over a billion hours of video and generate billions of views (YouTube, 2019). It's this powerful reach that makes the platform's problems so impactful.

Above all, YouTube appears to have a serious extremism problem (Roose, 2019). For years, the platform's algorithm sought to gain engagement and, in the process, experts claim executives ignored the subsequent rise in videos pedalling conspiracy theories and views (Bergen, 2019).

In 2017, journalists first flagged Hezbollah was using the platform to monetize videos promoting terrorism, which the algorithm was pairing with ads for low-cost drones (Orlowski, 2017). Soon, the same Artificial Intelligence (AI) was found pairing Al-Shabab videos about jihad in Kenya with promotions for Sandals resorts (Mostrous, 2017). This was followed by the platform's most popular YouTuber sharing a video where he satirically paid two young men to hold signs that said "Death to All Jews" (IBTimes, 2017).

This string of similar revelations led to the mass exodus of advertisers from the platform (Dunphy 2017). Fearing the reputational risk of having their content paired up with videos that contained hate speech or violent extremist content, companies like Coca-Cola, AT&T and Verizon cut ties (Scatt, 2017). After this breach of trust, YouTube has been trying to appease advertisers by making its AI avoid most controversial videos, including such broad terms as "sensitive social issues" or "tragedy and conflict." This policy, in turn, has been criticized by creators (Goggin 2019) who may have their content demonized without explanation and find it hard to appeal (Kain 2017).

YouTube has promised to do better by redirecting any searches for extremist content towards debunk videos (Welch 2017), having a stronger hate speech policy (Martineau 2019) and recommending less videos containing misinformation or, as the platform calls them, "borderline content" (Newton 2019). Still, the platform is rife with neo-nazi and extremist progapanda, which YouTube has demonitized but not deleted (Makush 2019). Overall, its engagement-maximizing AI is still based on how much attention creators gather (ie: minutes of watch) and therefore incentivizes the production of videos designed to outrage viewers (Newton, 2019).

YouTube's other largest social impact may be the way it has violated the rights of minors. Google LLC and its subsidiary YouTube, will pay a record $170 million to settle allegations by the Federal Trade Commission that the YouTube video sharing service illegally collected personal information from children without their parents' consent (FCT, 2019). The Center for Digital Democracy says that Google then used this illegally gathered information to target advertisements to children across the internet and across devices (Shepardson 2019).

The platform has promised to do better by children by removing all comments from videos featuring minors and lowering their access to monetization if deemed "at risk of predatory comments" (YouTube Help, 2019). The site is also offering more control tools for parents — only a third of

whom check the keywords their children are searching and the platform (Buzzi 2012). Meanwhile, YouTube continues to be filled with highly-disturbing videos (Orphanides 2018) aimed precisely at minors by so-called content farms and for the only purpose of making money (Bridle 2018).

2. Environmental Impact

Global greenhouse gas emissions show no signs of peaking, and UNEP claims that, unless countries take stronger measures before 2030, exceeding the 1.5oC goal is unavoidable (UN Environment, 2018). Given the meteoric growth of the Communication Information (CI) sector -- with 2.5 billion more people estimated to be connected to ICT services by 2030 -- many fear CI could quickly become a major GHGE emitter (GeSI, 2019).

Research suggests that, at the current rate, the industry (which is much larger than just Internet services) will be responsible for 14% of the worldwide GHGE by 2040 — about half of the current contribution of the transportation sector (Belkhir, 2018). Others claim the worst case scenario would see the ICT sector contributing up to 23% of the total greenhouse gas emissions by 2030 (Andrae, 2015). The current contribution is estimated at two percent, equivalent to the aviation industry (GeSI 2019).

Yet other studies claim this worst case scenario is highly unlikely. Recent research appears to show that the Internet's carbon footprint has already begun to shrink (Malmodin, 2018), largely thanks to advances in server efficiency and renewable power. What's more, according to the Global e-Sustainability Initiative (GeSI), ICT innovation could lead to emission reductions five times the size of the sector's own footprint, up to 15% or 20% of all otherwise expected emissions by 2020 (GeSI 2019).

Calculating the carbon footprint of each individual action online is immensely difficult (Barker, 2011) and so context-dependent that there is no scientifically proven, one-size-fits-all number. The impact depends on the type of content, the platform chosen, the efficiency of the network and servers and the type of energy used to power them, be it fossil fuels, nuclear or renewable. That is why it's useful to look specifically at the practices of each company involved.

That said, electricity use is not the only impact the ICT industry has on the environment. The carbon generated from materials and manufacture is about one quarter of the overall ICT footprint (GeSI, 2008). Laptops have strong initial footprints - although it depends on the manufacturer, a 13 inch MacBook Air produces 176kg of carbon emissions (Apple, 2019) while the emissions for a similar DELL computer is 286 kg (Dell, 2019) — comparable to driving 701 miles in a passenger car. And new gear is not necessarily becoming less carbon intensive.

By 2020, the ecological footprint of smartphones alone would surpass the individual contribution of desktops, laptops and displays (Belkhir, 2018). Despite being smaller than a PC, smartphones have a shorter life cycle than other devices. Mining the rare materials inside a new smartphone represents about 90% of the device's total CO2 emissions, which adds up to as much as recharging and operating a smartphone for an entire decade (Belkhir, 2018).

2.1 Buffer Environmental Impact

The company has no physical office, and they claim it lowers their environmental footprint. Most importantly, Buffer servers are running from Virginia and Oregon in the US; these are Amazon Web Services servers, which are highly energy efficient and over half are powered by renewables. They are committed to getting to 100% across all their global infrastructure and are currently building four new wind farms and one new solar farm (Amazon, 2019).

2.2 Squarespace Environmental Impact

Squarespace's server set-up makes it so that the UnSchool site is close to carbon neutral. The company has designed their own highly efficient data centers and try to buy 100% renewable energy and, when they can't avoid emitting CO2, they purchase carbon offsets (Squarespace, 2019).

As for the newsletter, the carbon footprint of an e-mail is estimated at 4 grams of CO2 equivalent (Melvin, 2015). So the carbon output of one smap email is like driving one meter in a car (McAfee, 2009), but this, again, may change according to providers. Beyond Squarespace, the actual number changes according to which device and service the end users use to open and manage it: laptops use more energy than mobile phones (Samovat, 2011) and keeping emails on one's inbox requires energy from the hosting serves, while erasing them stops this.

2.3 Facebook Environmental Impact

Facebook has a highly ambitious and transparent sustainability policy, and 75% of the energy used by the company is renewable (Facebook Sustainability, 2019). It also builds its own sustainable, state-of-the-art data centers. Their servers are 100% renewable energy and are 80% more water efficient than average data centers. They are LEED® Gold level certified by the Leadership in Energy and Environmental Design (Facebook Sustainability, 2019).

Last year, the company released 339,000 metric tons of CO2, which when divided by its over a billion and a half daily users (Facebook, 2019), puts the annual carbon footprint of one user at less than half that of making a cup of coffee (Facebook Sustainability, 2019).

2.4 Instagram Environmental Impact

As property of Facebook — the self-proclaimed largest corporate purchaser of renewable energy in the world (Facebook Sustainability, 2019) — Instagram operates in the same way in terms of environmental practices.

2.5 Twitter Environmental Impact

Given that the platform is mostly short text, its total emissions are likely always going to be smaller than those of visual apps. The only "official numbers" given by the company were shared during a conference by a Twitter developer who calculated each tweet generates 0.02 grams of CO_2 emissions (Shwartz, 2010). That means Twitter's carbon footprint is relatively low – the 50 million tweets sent out daily (Twitter, 2014) emit just one metric ton of CO_2. That is less than a tenth of the yearly average CO_2 emissions of a single American person (World Bank, 2014).

Yet Twitter is stubbornly opaque about their environmental policies and actual emissions. According to research by Greenpeace, the company does not engage in any environmental advocacy or active mitigation. It buys only 10% of its energy from renewables, and most comes from natural gas (43%) and nuclear (13%) (Greenpeace, 2017).

That said, their headquarters are trying to improve waste management, using 40% local products within 150 miles of their offices and using plant-based protein whenever possible (Indeed, 2019).

2.6 LinkedIn Environmental Impact

LinkedIn has not built their own servers (Dix, 2017), and only 10% of their energy appears to come from renewables. But Greenpeace (2017) claims they are transparent about their energy consumption and are actively trying to lower their emissions. The parent platform is also mostly text so it takes a smaller toll. Their parent company, Microsoft, has carbon neutral in its operations since 2012 (Microsoft, 2019) and is on track to reduce emissions by 75% by 2030, thanks largely to a company wide carbon fee system (DiCaprio, 2013) — including data centers, offices, labs, manufacturing, and business air travel. The money in the fee fund is reinvested in carbon neutrality initiatives.

2.7 Medium Environmental Impact

Medium consists largely of text content, which already makes it less energy intensive than visual-based platforms. And since their recommendation algorithm is not "obsessed with the new", as their CEO puts it (Williams 2012), the content has a longer shelf life, which means we users can stay relevant in the platform without having to publish constantly. This too can lead to lower energy expenditure.

Lastly, Medium uses Amazon Web Services[5] servers, which are highly energy efficient and powered mostly by renewaable energies (AWS 2019).

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[5] Amazon Web Services are the company's cloud computing services and one of the internet's most popular "backend" services for websites. This means the sites and platforms run on Amazon servers instead of having their own. Since 2018, over 50% of AWS are currently powered by renewables and the service aims to reach 100% carbon neutrality across all their global infrastructure. It owns five solar farms already running in Virginia and are building three new wind ones — one in Ireland, one in Sweden, and one in the United States. (AWS 2019) That said, Greenpeace has accused AWS of not being transparent about their data (Greenpeace, 2017)

2.8 Thinkific Environmental Impact

Thinkific hosts more video content but also uses Amazon Web Services servers. Check footnote 5 for details.

2.9 YouTube Environmental Impact

Video streaming is a huge driver of data demand and it is projected to grow to more than 82 percent of all consumer Internet traffic by 2022 (Cisco, 2017). This has the potential to generate an increase in greenhouse emissions but, unlike Netflix, YouTube's servers are largely carbon neutral — only 29% of their power comes from burning fossil fuels (GreenPeace, 2017). That said, the platform continues to utilize user design tactics that maximize engagement at the detriment of the environment (Kobie, 2019), such as the "autoplay" button, which keeps videos playing automatically, even when the user is away from the screen.

3. Economic Impact

This section will be looking at impacts on cost, scalability, financial autonomy and return on investment. It is essential for any business to be able to reach its audience where it is. And given that on average, most internet-connected humans spend 2 hours and 20 minutes a day on social media (Global Web Index, 2019), the need to use such platforms appears obvious. That said, just because these platforms are free does not mean they do not have costs associated with them.

While they may be cheaper than traditional forms of marketing, social media is not necessarily more effective since measuring the ROI of investing in it is challenging. It is simple, thanks to tools like Facebook Pixel, to measure the ROI of a specific post or paid campaign directed at the UnSchool's followers. But it is significantly more difficult to quantify whether all the time spent posting, sharing and commenting needed to gain those followers in the first place is worth what's invested.

What's more, since these platforms are designed to be addictive (Sini, 2017), they trigger our dopamine feedback-loops and activate our emotional circuitry in a way that can impair our working memory (Mather, 2006). Notifications often lead to multi-tasking (also known as "the pinball effect"), which impairs our ability for deep focus (Ophir, 2009). This means that communicating on these platforms can take a toll on the productivity of the team.

Even if working with these platforms is economically worth it, investing in these companies could be risky in the long term. Vine, at the peak of its popularity, had 200 million active users (Newton, 2016), and thousands of creators had built followings through it. But, when the app died, so did their revenue.

Fundamentally, most digital communication platforms own the connection between companies and

their clients (Lanier, 2018), which means they have leverage to restrict access, spike prices or simply close down without much accountability.

As always, there are significant differences depending on the service provider, which is what we're going to explore in the next section.

3.1 Buffer Economic Impact

In terms of cost, Buffer offers highly competitive prices. What's more, they have full pricing transparency (Buffer, 2019) and share all their finances publicly — as well as all of their code (GitHub, 2019). The company is financially sound and decided to spend half of it assets buying equity back from their investors in order to remain fully independent (Gascoigne, 2018).

The platform does not impose much of a lock-in effect, besides not being able to export more than two months of data at time (for bandwidth issues) (Buffer FAQ, 2019), which may make transitioning data a bit slow.

Most importantly, users have full ownership of the content. The tool can bring major benefits in terms of efficiency and has few risks. In October 2013, Buffer's system was hacked, allowing the hackers to get access to many users' accounts and post spam. The issue was quickly fixed.

3.2 Squarespace Economic Impact

Squarespace is fairly priced compared to other services like Wix or Site123, even if its not fully transparent about costs. The website is a company asset — which means all the content in it is owned by the UnSchool. And, unlike on social media, it is easy to establish calls to action (CTAs) and then track user behavior to see whether a message was successful or not.

Squarespace also allows the management of another crucial asset: the email list. A newsletter, unlike other forms of social media, allows the company to own the connection with the clients. Having both website and e-mail server in the same platform also has the economic benefit of centralizing both tools and analytics and therefore being more efficient for the team. There is no locked-in effect either, as the database of emails could be easily transferred from Squarespace to another service (Support Squarespace, 2019).

What's more, email continues to have one of the highest ROIs in the industry because of how often people interact with it. According to a report by McKinsey (2014), despite companies now devoting more time and money to social media, email remains a more effective way to acquire customers — while, internationally, the average engagement rate on Facebook is 0.9% and on Instagram is 1.6% (RivalIQ 2019), the open rate across industries on e-mail is 22.15% (GetResponse 2019). And while the average click through rate (CTR) of a social media advertisement is 1.9% (Statista 2019), the CTR of an organic e-mail is 3.43% (GetResponse 2019). E-mail can also lead to increased website traffic, unlike platforms like Instagram, designed to keep users in the experience.

3.3 Facebook Economic Impact

Facebook's proposition appears economically unsustainable at various levels. First, the platform operates as a monopsony, controlling the demand (in the form of aggregated human attention), and that gives them unfair power in the advertising market (Martinex, 2019). They also own connections with the client and can easily change companies' ability to access them, forcing them to buy reach.

In fact, they have done so since 2017 when, after convincing companies to amass followers on their official pages, they dropped their reach causing organic reach to decrease by 20% (Influencive, 2019) and engagement by as much as 50% (Zantal-Wiener, 2019). There is currently no policy in place that would prevent the company from engaging in similar behaviour in the future.

Besides the issues of control, Facebook demographics are shifting. While it continues to expand internationally, doubling its user base since 2012 (Statista, 2019), less people are using it in Western countries. In fact, following the Cambridge Analytica data-sharing scandal, Americans, especially young adults between 18 and 29, have significantly cut back the time they spent on Facebook (Pew Research Center, 2018). Being associated with Facebook could even lead to brand damage, if the UnSchool followers share similar concerns.

The company is also in legal hot water. The FTC informed Facebook in June that it is investigating the company for possible antitrust violations (Brandom, 2019) and could potentially force the giant to split, losing Instagram and Whatsapp (Wagner, 2019).

3.4 Instagram Economic Impact

While some are leaving Facebook, Instagram's user base is growing. The breakdown between genders is even; 88% of users live outside the US and 75% of users are under 35 (Hootsuite, 2019). Currently, the platform is gaining popularity, but each visual posts requires a significant amount of input — from photo editing to captioning and finding the right hashtags to use. But for now, the algorithm does appears to not hinder engagement with companies. In fact, a third of the most viewed Stories on the app are created by businesses (Instagram, 2019).

Long term, it has similar issues to Facebook (especially since it's owned by it), with the platform owning the connection with the end user and ability to turn the tap off if it wants to increase advertising revenue.

3.5 Twitter Economic Impact

The number of Twitter users has mostly stagnated at around 330 million (Twitter, 2019) per month, but it is still a deeply cultural relevant medium, with users remembering content 31% more when they discover it on Twitter vs. other internet use (Stenis, 2018). The platform is especially popular with public figures, academics and journalists, most of whom use it largely to read news and network (Pew Research Center, 2018).

The company only began making profit in 2017, but its revenue this year grew by 19% (Twitter, 2019). Their service is largely free. Unlike the previous two, their business organizes that public data in real-time to make it easier for brands, researchers, and organizations to use, but it does not share a direct message or location with advertisers.

Producing content for the platform is not highly time consuming; however, the life of a tweet is brief. 75% of the engagement comes within just 24 minutes of posting and then fades away (four times less than a Facebook post) (Rey, 2014). Users can follow hundreds of accounts, which means that gaining relevance in their feed is difficult.

3.6 LinkedIn Economic Impact

Unlike Twitter, LinkedIn is growing fast — gaining 123 million users in two years (LinkedIn Statistics, 2019). 50% of Americans with a college degree use LinkedIn (Smith, 2018), and 94% of B2B marketers use it to distribute content (LinkedIn, 2017).

Over 2 million posts are shared on LinkedIn each day (Roth, 2018), and, unlike Facebook or Instagram, who prioritize personal connection over business, LinkedIn's algorithm works to amplify professional brands who publish research, news items, and new ideas on the site (Sehl, 2019).

3.7 Medium Economic Impact

Medium is a free platform, although in order to access all their stories as well as curated daily selections and audio versions, users can get a premium membership for $50 a year. Its import tool makes it very easy to bring and format content from other platforms, which helps maximize the ROI of each new piece of content (Medium, 2019).

Medium's largest economic advantage is that it already has a built-in audience. The site currently has 90 million unique users each month (Edwards, 2018). 75% of its audience is international, and it publishes 20,000 articles per day (Alexa, 2019). Highly popular stories get featured on the site and app, which also allows brands to instantly connect with readers who already follow them on Twitter and Facebook. Last but not least, Medium is already a site of reference on subjects like business, life learning, innovation and entrepreneurship — which fits well with the UnSchool's psychographic.

Since user engagement is not dictated by a secretive algorithm and there is less spam on the platform, the readership metrics tend to be more reliable (no bots, paid promotions etc.) Medium allows publishers to know not just who sees and likes ("claps") their stories but how many of them read until the end (Medium Help Center, 2019).

Despite all the aforementioned benefits, Medium's economic future is uncertain. The company is nearly seven years old and raised $132 million in venture funding (Crunchbase, 2019), yet it is still not profitable (Edwards, 2018). The startup has tried a variety of business models (Hazard, 2019), from advertising to paywalls, often changing strategies abruptly and leaving big publishers in shock

(Wang, 2018).

It's unlikely that the company will close doors soon since its founder is a billionaire and Twitter cofounder Ev Williams (Forbes, 2019). Still, he is currently trying to raise even more money to stay afloat.

3.8 Thinkific Economic Impact

Thinkific is an economically sustainable option. Its pricing is more affordable than many other players in the industry (Software Advice, 2019) and, unlike some of them, the platform takes no transaction fees from the courses sold in it. It also includes a comprehensive list of features from drag and drop course design to student support. The company appears to be on sound economic ground with an estimated 2 million dollars in annual revenue (Crunchbase, 2019) and 40,000+ course creators (Thinkific, 2019).

3.9 YouTube Economic Impact

YouTube is owned by Google and its parent company, Alphabet, so please refer to section 2.1 in Phase II of this report for information on the company's economic impact.

4. Phase I Conclusion

As previously mentioned, the impacts of digital communications are complex and moderated by a wide variety of factors, not all of which have been explored in this current report. That said, here are the main conclusions so far:

Socially, the major impacts will likely come from supporting platforms whose algorithms maximize engagement at the cost of users' mental health and their right to privacy, particularly when that information is being shared with unknown third parties.

Environmentally, most of the carbon emissions are likely to come from the devices used to post, rather than the posts themselves. It is important to make conscious decisions about what type of content we post and the methods of sharing to reduce the per-unit impact of communications, yet the footprint of content is highly context-dependent. So when it comes to minimizing the digital output, the most effective action is likely to be choosing green servers and supporting companies that are actively trying to design for carbon neutrality.

Economically, the major negative impact is fueling monopsonies whose increasing power makes them more likely to take advantage of users and get away with other externalities. Since the ROI of social media marketing can be difficult to accurately calculate, efforts should be made to keep the engagement to what is most indispensable and ensure the team's productivity does not suffer from engaging with it.

Interestingly, this report highlights the potential tension between the three different "focuses" of

sustainability. For example, small companies tend to have a better track record of employee care, but their servers can often be inefficient and they need to buy cheaper energy. However, giants like Facebook and Amazon may have a more problematic social impact but are using mostly clean energy to fuel their operations.

Overall, it appears that the carbon footprint of a single post or photo is so small compared to that of the devices used to post them. So the most impactful choice a company like the UnSchool can make is to use the most sustainable service providers and develop an internal code to navigate the smaller, inevitable sustainability trade-offs. As an industry leader, these actions could set an example for students and partners alike.

4.1 Impact Summary

The following table is an overview of each company's "scorecard" in each sustainability category. These ratings are the individual opinion of the report's author, determined by her own metrics and based on the research conducted so far.

	Social Sustainability	Ecological Sustainability	Economic Sustainability
Buffer	A	A	A
Squarespace	A	B	A
Facebook	F	A	F
Instagram	B	A	B
Twitter	B	B	B
LinkedIn	A	B	A
Medium	A	A	B
Thinkific	A	A	A
YouTube	F	B	B

A - They appear to be fully committed in this regard and are setting an industry standard
B - They appear to have some shortcomings but are actively trying to overcome them
F - They have major shortcomings and don't appear willing or capable to overcome them

4.2 Recommendations

The research supports a few key steps that could be taken to alleviate the impact of the UnSchool's digital communication strategy:

- ➢ **To reduce social impact:**
  - ○ Pause the use of Facebook or leave the platform altogether
  - ○ Continue with existing policy of positively impactful content
  - ○ Ensure posts on Instagram continue to post examples of diversity
  - ○ If using Facebook or LinkedIn, create discussion groups where the algorithmic control is not as intense as the main feed
  - ○ Do not post on weekends or major holidays
  - ○ If in need to use Youtube, do so without signing in to a Google Account
  - ○ Limit the amount of postings to respect the user's attention. Suggested frequencies:
    - ■ Facebook: 4 times a week
    - ■ Instagram: 4 times a week
    - ■ Twitter: 3 times a day
    - ■ LinkedIn: 3 times a week

- ➢ **To reduce environmental impact:**
  - ○ Use the current devices as long as possible and dispose of them responsibly
  - ○ Do an audit of the site, purge any unnecessary video (even that stored on the site's content management system) and change high-resolution photos for low-resolution ones
  - ○ Disconnect any unnecessary plug-ins / APIs from the site or social media accounts
  - ○ Whenever possible, use text instead of photo and photo instead of video
  - ○ Prioritize video where it gets erased (ie: Instagram stories)
  - ○ Write evergreen content on platforms like Medium, where words have a longer shelf life
  - ○ Improve the site's SEO and reduce bounce rate
  - ○ Use a carbon calculator for the website
  - ○ If in need to use YouTube, disconnect the "autoplay" feature

- ➢ **To reduce economic impact:**
  - ○ Stop investing in networks that charge to access your audience (such as Facebook)
  - ○ Focus on growing the newsletter subscriber lists and designing it for engagement
  - ○ Benefit from LinkedIn's business-friendly algorithm by posting there
  - ○ Leverage existing personal networks through Twitter and LinkedIn
  - ○ Prioritize communication outreach campaigns where the link between user action and desired outcome is measurable (VS general efforts towards "brand awareness" or "community numbers")
  - ○ Continue to use tools like Buffer to minimize the time the team needs to physically spend

- ○ When operating these apps, consider social media blockers like Freedom to avoid the negative economic impact from the team's potential compulsive use, as these platforms have proven to be addictive
- ○ Write evergreen content on platforms like Medium, where words have a longer shelf life

These are by no means exhaustive, as the team should come up with its own set of suggestions given their interpretation of the research and the company's current strategic priorities.

Overall, I suggest creating an impact mitigation strategy with **three stages**:

1. Stop using (especially paying) platforms who have the most negative impacts.
2. Take stock of all the inevitable energy expenditure, and set up strategies to reduce it.
3. Design alternatives or support existing ones, such as social networking sites Mighty Networks and Mastodon.

Finally, I recommend continuing to pursue this line of research. Phase II of this report should include any questions brought up in the team by this report. I also suggest:

- ○ Look into internal tools (such as Google and Whatsapp)
- ○ Analyze details of content production (through a life cycle analysis lense), paying particular attention to "end of life" practices and how to minimize "content waste"
- ○ Find more alternative services and examples of sustainable communication strategies (bright spots)
- ○ Interview experts and asking them for more specific, actionable advice

PHASE 2: INTERNAL COMMUNICATION

Introduction

It is important for any company to consider the tools it uses to interact with the outside world, especially in the case of the UnSchool because its main aim as an organization is to operate in accordance with its sustainability statement and commitment (The UnSchool, 2019). And, as an educational organization, it is in a unique position to set a positive example for its audience and partners.

That said, most of the communication that the company engages in is actually internal — largely among team members who are often operating remotely. The consequences of this constant information stream also needs to be factored into our impact assessment. As we began doing in Phase I, our research will focus on the specific platforms the UnSchool uses, since the consequences of online communication are highly context-dependent.

Once we have identified the biggest sources of negative social, environmental and economic externalities, we will move on to potential solutions. This will be done by researching and presenting a list of alternative platforms that can provide the same functionalities without many of the identified negative impacts.

Tools currently used

Being a small organization based in different geographical locations, the UnSchool team uses off-the-shelf services for their internal communication. Platforms used at the time of writing this report are: Google Drive, Google Email, Google Search, Whatsapp and Canva.

1. Social Impact

1.1 Google Social Impact

All the following products (Google Search, Gmail, Drive and YouTube) are owned by the same company Google and its parent company, Alphabet, although their impacts vary slightly between them. Overall, Alphabet is famed for the good treatment of its over 98,000 employees (Statista, 2019), offering industry-leading benefits from top-notch healthcare (Yatagan, 2013) and generous parenthood leave (Lichtig, 2013) to gourmet meals and showers in the office (Levison, 2018). Google also matches the charitable donations of employees and gives money for the time they volunteer (Google Careers, 2019).

Google's employees are 66% male and 45.5% white. In leadership positions, the percentages go up to 74% male and 60% white (Google Diversity, 2019). The company claims to be aware of the problem and has appointed a Global Director of Diversity, Equity, & Inclusion to lead the effort of

ensuring diversity within its workforce (Google Diversity, 2019).

The company claims its search and advertising tools help provide $335 billion of economic activity for more than 1.3 million businesses, website publishers, and nonprofits nationwide — in the US alone. (Google Economic Impact, 2019). Currently the UnSchool does not use Google adwords on principle.

Google Search

Google Search is the web's most popular search engine but does not operate as democraticly as it first appears to. Last year, the company had to pay EU regulators €2.4 billion for manipulating shopping search results to favorize its own products (Vincent, 2017).

The American Federal Trade Commission (FTC) is also on their case. In 2012, the US FTC fined Google $22.5 million for violating the privacy of users of Apple's Safari web browser and is now investigating if Google's favoring of their own services in their search results violated antitrust regulations (FCT, 2019).

In July, the company stopped working on "DragonFly," a search engine designed for China that would reportedly fall in line with Beijing's censorship requirements. It was highly controversial, prompting high-profile resignations and a letter of protest signed by 1,400 Google employees (BBC, 2018).

Beyond claims of breaking the law or being too cozy with undemocratic governments, the platform's function may be helping intensify what is known as the "filter bubble" effect. A study by competitor DuckDuckGo found that most users of the Google Search, regardless of what they search and controlling for both location and timing, see results unique to them (DuckDuckGo, 2018). This is done to maximize economic gain (Praiser, 2011) by increasing media consumption but can lead to amplifying any biases the algorithm had previously detected (ie: being for or against guns), with some arguing that such design hurts democracy (Bozdag, 2015) and can lead to a fragmentation of the public sphere (Moeller, 2018).

However, there is not yet enough research about the actual effects of Google's algorithmic choice. One study on the Google News service showed the polarizing effect on the reader's views were not as significant as expected (Haim, 2017). The company has admitted to this issue and claims to be actively trying to remedy it with a feature called Snippets, which presents brief entries showcasing varying points of view on the subject of the search (Hao, 2018).

Gmail

Gmail has 1.5 billion users (Statista, 2019), and its biggest societal impacts are likely to come from how it handles their private information (Lanier, 2018). From its creation in 2004 until 2017 (Google, 2017), the company analyzed the text of users' private messages to personalize advertising displayed both within Gmail and other platforms (Roettgers, 2017). It has since stopped but still scans content for other purposes like customizing search results and improving its machine learning capabilities (Martineau, 2018) (Popken, 2018). Recently, the product has been particularly criticized for its

common practice of sharing users' emails with third-party developers, despite previously acknowledging the practice and promising to stop it (MacMillan, 2018).

Google Drive

Google automatically scans all documents users upload on their Drives (Google, 2015), although it does so with bots and claims to only share aggregate, non-identifiable data from the user. This Drive scanning code has previously malfunctioned, blocking users from accessing Google Docs with content it deemed "inappropriate." This is how National Geographic reporter Rachel Bale found her draft of a story about wildlife crime was locked for a violation of Google's terms of service. The company has since admitted a glitch and fixed it, but the incident shows that private documents are indeed scanned by the platform (Tung, 2017).

Another concern is ownership. Section 2 of Google's terms of service says that "When you upload, submit, store, send or receive content to or through Google Drive, you give Google a worldwide license to use, host, store, reproduce, modify, create derivative works (such as those resulting from translations, adaptations or other changes we make so that your content works better with our services), communicate, publish, publicly perform, publicly display and distribute such content" (Google, 2019).

While the wording may seem ominous, most cloud providers have similar language because it is needed for the platforms to copy and paste users' content or even create thumbnails (Patel, 2012). Google specifically states they do not claim ownership over any content: "You retain ownership of any intellectual property rights that you hold in that content. In short, what belongs to you stays yours," (Google, 2019).

There is also the issue of spam. Under current settings, Google's sharing system does not require any acceptance, which means spammers can share files that automatically appear in your Drive, and there's no way for the user to stop it (Summerson, 2019). If you have only "view" permission, you can't remove yourself from the share. The company says it is aware of the issue and actively working towards a fix.

1.2 Whatsapp Social Impact

Since 2014, Whatsapp has been owned by Facebook, so please refer to section 1.3 of phase I of the report for details on the parent company's social impact. There is, however, a key difference between Whatsapp and Facebook. Since the former is a private texting tool, it does need to use content moderators and therefore does not participate in the perpetuation of their poor labor conditions.

Another distinct social impact is Whatsapp's difficulty in guaranteeing the safety of its total encryption (Allan 2019). In recent years, the platform has suffered various data breaches (Coldewey

2019), and, most notably, had a technical vulnerability that allowed spyware to be installed in some of its phones (Sawers 2019), including that of a U.K-based human rights lawyer (Srivastava, 2019). Security experts claim the service is still vulnerable in other ways since, for example, end-to-end encryption still allows Facebook to potentially access the chat history (Zanon, 2018) and does not work if the user backs up the chat history using Google Drive (Christopher 2018).

This is not the only challenge to Whatsapp's claim of privacy. According to Whatsapp founder, Brian Acton (the man who launched the #deletefacebook campaign), Facebook asked him to lay the groundwork for showing targeted ads and facilitating commercial messaging in the platform. This, according to him, would go against the encryption he'd helped build and break a social contract with its users. Acton left the company in protest but Facebook has continued with the initiative, announcing it will start showing targeted ads in Whatsapp's status bar as of 2020 (Tambini, 2019).

Finally, Whatsapp also has a misinformation problem. The issue appears to be gravest in the platform's biggest market, India, where 4 out of 5 smartphone users have the app (Agarwal, 2019) and where political parties (Singh 2019) use the platform to advertise. Rumors and fear-mongering content is spreading fast among the youngest users of the platform (Khurana 2018), and the consequences can be fatal. False news of child kidnapping and organ harvesting have already fuelled several instances of public lynchings by vigilante-style mobs (BBC, 2018).

This is a tough challenge for the Whatsapp. Since all messages on it are end-to-end encrypted, it's technically impossible to identify the sources of fake content. The Indian government has been begging the platform to make messages traceable (Lackshaman 2019), but so far there is no sign of willingness in that direction since doing so would require the app to give up its promise of security. Instead, the company has offered $50,000 for ideas to stop the spread of misinformation on its platform (Telegraph 2018) and launched a service called Checkpoint where Indians could send information and get a response about its veracity of their news during election times (Ravikumar 2019) — although the company has clarified that, so far, this is a research project and "not a helpline," (Checkpoint 2019).

1.3 Canva Social Impact

Canva is based in Australia and appears to offer very good conditions to its hires, including relocation budgets, flexible work hours and free membership to fitness studios (Canva 2019). The company's CEO and founder, Melanie Perkins, makes a point of championing other women at work, is respected by her employees and is now one of the wealthiest women in Australia (Kim 2019).

2. Environmental Impact

As we saw in Phase I of this report, the most effective way to reduce the environmental impact of our digital communications is not necessarily just sending less messages but also ensuring that the technology we are using to transfer that information — from the phones to the servers hosting it — is as energy efficient and carbon neutral as can be.

For example, video is the most energy-intense of digital content; in terms of volume, 10 hours of HD

film contain a larger amount of data than all the text articles in English version of Wikipedia (Effoui-Hess 2019). Overall, video makes up for 80% of the world's data traffic, which is largely divided by four categories, all accounting for about a fourth of total views:free streaming services (Youtube etc.), paid streaming (Netflix etc.), social media (Facebook, Snapchat etc.), and porn (Effoui-Hess 2019).

That said, a video hosted in an efficient server powered by renewable energy and streamed on a tablet will have a drastically smaller footprint than the same video on a slow server powered by coal and watched in a large desktop computer.

This is why, besides trying to reduce the weight of the documents uploaded online, it is key to focus on the platforms used to do this important part of the organization's communication and workflow.

2.1 Google Environmental Impact

Google is one of the tech industry's most vocal advocates for environmental sustainability, and they appear to be highly coherent with this mission. According to the company's Chief Sustainability Officer, Kate Brandt (GreenBiz, 2019), Google has been working to make circular principles a reality across aspects of its operations, from food waste in its cafes, to solar-powered headquarters (Google 2019), to using recycled plastic in all its devices (Dave 2019).

The company's servers use 50% less energy than a typical data center (Google Sustainability, 2019), and, in 2017, Google reached 100% renewable energy for all its global operations. What's more, Google purchases enough renewable energy to match consumption for all of its operations globally (Google Cloud, 2019).

2.2 Whatsapp Environmental Impact

Whatsapp is a Facebook-owned company so please refer to section 2.1 of phase I for details on their environmental impacts. Overall, the platform is largely carbon neutral.

2.3 Canva Environmental Impact

Canva uses Amazon's AWS servers (AWS, 2019). Check footnote 5 for details.

3. Economic Impact

2.1 Google Economic Impact

Google is a highly attractive proposition from the standpoint of cost and convenience. All of Google's services are largely free and incredibly convenient. The platform federates all of them in one bar, which means quick and easy access to a myriad of services: calendar, file storage, note taking, messaging, etc., all easily accessible from any device and with great malware and spam protection

(Vincent, 2019). Using so many services from one provider, however, is likely to generate a certain locked-in effect (Sadighi 2015), since Google already holds years of data and changing providers would require the user to set up various new accounts with platforms that will likely not easily interact as seamlessly with each other.

Alphabet, Google's parent company, is the 16th largest corporation in the world (Forbes, 2019). Last year, Google alone made $136 billion in revenue — mostly from advertising, which means selling users' data to third parties for ad targeting (Alphabet, 2019). Fundamentally, this business model requires the company to always be gathering private information from its users to then sell it to organizations that want to influence them (Lanier 2018). As CEO of Google Eric Schmidt said in 2010, "We know where you are. We know where you've been. We can more or less know what you're thinking about," (Thompson 2010).

Google has long fought accusations of monopolistic behavior, especially in the space of digital advertisement where the giant is accused of stifling competition (Dave 2019). The company was just hit with a €1.5 billion antitrust fine by the EU because Google Adsense had, for ten years, pressured its customers to sign contracts, stating they would not accept advertising from rival search engines (Vincent 2019). This is the third fine so far by European Regulators. Still, the company insists the ad-tech space is "crowded and competitive" (Hsiao 2019).

2.2 Whatsapp Economic Impact

Whatsapp is also an economically-appealing proposition because it is free to use and is now the world's biggest messaging service, used daily by more than 500 million people (Statista 2019) with India being its biggest market (Singh 2019). The app provides what has been a largely ad-free, encrypted messaging functionality.

But the promise of privacy appears to be conditional, as the company is soon going to roll out targeted advertising and is also about to launch payments on the app, a model that is first going to test in India (Reichert 2019).

Overall, the largest economic challenge of using Whatsapp is the locked-in effect generated by the platform's network effect. The more its user base grows, the harder it is to leave to another platform without losing touch with contacts, if not impossible (Evans, 2017).

2.3 Canva Economic Impact

Canva is very cost effective solution. Its free option offers access to over 8,000 templates, and its Pro subscription is a small fraction of the price of a professional designer. The platform offers access to 400,000 free images with license to use for business (Canva 2019), which is also significantly cheaper than the cost of most stock photography services.

This could have a negative economic impact on full time professional graphic designers but also arguably provide an opportunity for less experienced creatives looking for work and exposure. So far, there appear to have been no formal complaints against the company by designers. What's more,

the UnSchool does hire full-time designers, and Canva now has a professional marketplace where designers can upload their work and gain royalties for it (Canva Marketplace 2019).

The platform's only technical downside is the fact that they are a 100% web based. This means users can't store the files locally, so poor internet connectivity or Canva's site maintenance may delay access to designs. This could be less of a risk with a desktop application.

Canva only offers PDF, JPEG and PNG, which are not useful for advanced editing in other software. In the free version, users are limited to the fonts that Canva has developed as part of their online platform, so designing a logo with them can easily create a slight locked-in factor.

Overall, Canva appears like a cost effective solution and a sustainable one too, since the company seems to have a good financial footing, making a sizeable profit and valued at $2.5 billion (Clark, 2019).

4. Alternative Tools

This report has uncovered the negative impacts of several of the platforms that the UnSchool uses to communicate both externally and internally. Now it is time to consider alternatives. Below is a list of vetted tools that could potentially replace the use of less socially, environmentally or economically sustainable ones.

4.1 Alternatives to Facebook

The UnSchool uses Facebook mainly to connect its alumni and community, along with general social media communication. LinkedIn could be an alternative to this platform and so might the ones below.

Mighty Networks

Founded by tech entrepreneur Gina Bianchini, Mighty Networks is actively trying to be a kinder, community-based alternative to Facebook (Bianchini 2019). The site focuses on privacy and customization, and its business model (free of any advertisement) ensures it will not follow Facebook's bait-and-switch strategies of forcing customers to pay for access to their followers. The company also has a good track record of employee care (Glassdoor 2019).

The platform gives creators full control over the look, feel and engagement rules of their community and appears to be working for hundreds of them, like Yoga with Adriene or the Happy Startup School (McCahill 2018).

Creating one group is free, and sub groups can be activated for $12 a month. Premium plans also allow users to create a Mighty Network website or ecommerce store (Mighty Networks 2019) with a variety of features, such as member subscriptions, native mobile apps and a customized web landing pages and even online courses. Mighty Networks runs on AWS's carbon conscious server

infrastructure (AWS 2019). Check footnote 5 for details.

The company is making a profit and has raised $11 million dollars to grow its business offerings (Cision 2019).

MeWe

MeWe is a Facebook-style platform which is free to use and less business-oriented than Mighty Networks. The company has Tim Berners-Lee, one of the primary architects of the World Wide Web, on its board of advisors. Its interface is simple and intuitive; it covers all the Facebook basics, and it is dedicated to maintaining user privacy (MeWe, 2019).

It has advertising, but it is not targeted. MeWe has raised about $10 million dollars to date (Chun Chen 2018) and compensates for that lower ad revenue by selling add-on services, like voice messaging and message encryption. It also has a user-friendly enterprise option named MeWePro (similar to Slack).

Mastodon

Mastodon is a free and open-source self-hosted social networking service with 362,055 users (Mastodon 2019). Its functionality is closer to that of Twitter than Facebook but may still serve to communicate with the UnSchool community. It allows anyone to host their own server node in the network, and its various separately-operating user bases are federated across many different servers.

The platform is proudly free, non for profit and open source. It offers users 500 characters, instead of Twitter's 280, and allows users to follow, "boost" (equivalent to retweet) and like comments, as well as send direct messages to other users. The main difference is that allows users to change the privacy settings of each post.

Mastodon runs in a lot of different servers, and each can have its own rules and moderation policy, which results in much better moderation abilities than Twitter. This also means rules can vary widely from one group to the next. The platform, for example, was recently infiltrated by nazis, igniting some contentious debate within the community about whether or not to block them (Robertson 2019).

Assessing the environmental footprint of Mastodon is virtually impossible. Because the platform is not run by a single company but by a decentralized "federation" (Mastodon 2019), users run hundreds of versions of Mastodon on different types of servers around the world. These are interoperable, allowing users to communicate between servers, but it means there is no way of knowing the impact of each server besides asking each individual host. That said, the UnSchool could likely find a green server or even set up its own, ensuring full control over its emissions.

In terms of use, the platform is less intuitive to set up than the previous options and it has a distinctly contrarian and "techie" culture, which could be very appealing to some of the UnSchool students but risks alienating less tech-savvy ones.

4.2 Alternatives to Gmail

TutaNota

This is one of the most popular, secure email servers. With end-to-end encryption and 2-factor authentication, the emails' contents are extremely safe from snooping. It also provides a free, encrypted calendar (integrated seamlessly into the secure email client like Google Calendar is).

The service is completely free of advertisements, but to use with a professional alias, users have to upgrade to the $12 a month account to get technical support and up to 5 more aliases (TutaNota 2019). Tutanota is run by a small team in Germany and is open source so that security experts can verify their code.

As for its environmental impact, Tutanota uses 100% renewable energy to power their servers (TutaNota 2019) and its employees have been regularly attending the "Friday for Future" climate protests in Germany (TutaNota 2019).

ProtonMail

ProtonMail is another highly popular, easy to use, secure alternative to Gmail. Founded by a group of CERN researchers, all emails are secured automatically with end-to-end encryption, and no personal information is required to create your secure email account (ProtonMail 2019).

The company incorporated in Switzerland, where all their servers are located. This means all user data is protected by very strict Swiss privacy laws. Their code is also open source and basic ProtonMail accounts will always be free. Their business service, ProtonMail Professional, costs $6.25 per user, per month (ProtonMail 2019).

ProtonMail claims to be committed to reach 100% renewable energy use and says it always chooses the most eco-friendly option for its energy needs (r/ProtonMail 2019). Their initial data-center uses only hydroelectric energy, but they say they have "had to diversify" on subsequent ones — so it's not clear which percentage of their energy currently comes from fossil fuels. Since they are in Switzerland, however, which powers the vast majority of its grid through hydro and nuclear power, the percentage is likely to be small (EDA 2019).

4.3 Alternatives to Google Drive

Box

Box.com is a California based, well-established alternative to Google Drive with a strong focus on privacy. It is used by 95,000 customers and 69% of Fortune 500 companies (Box 2019). The platform offers a highly intuitive way to store, access and modify documents from anywhere, and it includes a powerful search feature as well as the option of locking shared files so others can't overwrite one's

edits. Any changes made, even when offline, automatically save to Box. All cloud content is also accessible from the users' desktop, making it faster to access files.

Box appears to have a healthy work culture (Glassdoor 2019), and Fortune listed it as one of the best companies to work for in 2019 (Great Places to Work 2019). The platform runs on AWS's carbon neutral aspiring servers (AWS 2019). Check footnote 5 for details.

4.4 Alternatives to Google Search

DuckDuckGo

As one of the most popular privacy-conscious search engines, DuckDuckGo is still funded by advertising but does not track its users, share their search history or use any of their personal data.

The usability of the platform is very similar to that of Google, and there are phone apps available that provide additional protection when browsing the web. It's also easy to set any web browser to use DuckDuckGo as its default search engine.

The company is based in the USA and uses Amazon's AWS servers (AWS 2019), which as we have explained before in the report, uses more than 50% renewable energy and is on track to get to 100%.

Ecosia

Ecosia is an Internet search engine based in Berlin, Germany that donates 80% or more of its profits to non-profit organizations working on Reforestation. The platform has 8 million users and claims to have planted over 69 million trees (Ecosia 2019). All Ecosia searches are powered with 100% renewable energy from a solar farm that the company built itself (Ecosia 2019). As of this year, they are actually producing twice as much solar power as they need to power the platform as a way to actively "crowd out dirty energy from the grid."

Ecosia a was the first ever German B Corp and publishes their monthly financial reports and tree planting receipts (B Corporation 2019). The platform doesn't track users or sell data to third party advertisers either.

4.5 Alternatives to YouTube

PeerTube

PeerTube is an open source federated alternative to YouTube. It's a video-oriented social network that doesn't have ads and doesn't track the users. It's still very new so there isn't much content to view, but it's growing.

Unlike YouTube (and much like Mastodon), PeerTube is made up of lots of independent sites that connect to each other. It doesn't matter which site a user signs up to, they're all part of the same

network, erasing any fears of monopoly. Their site financed by a French non-profit organization: Framasof (Framasof 2019).

As with Mastodon, this is a slightly more technical set-up than those of other platforms, but it offers more control. The environmental impact of the service will depend on the server the UnSchool uses to host in, but renewable energy powered options are available. And, since it offers peer-to-peer streaming, it is more efficient (which means it uses less energy) than other centralized data centers (PeerTube 2019).

Vimeo

Vimeo is an ad-free video sharing platform with advanced privacy features, such as password protected videos. Vimeo Plus costs $7 a month when billed annually, or $12 a month when billed monthly.

YouTube has a significantly larger and more international audience and, because it's owned by Google, it is also noticeably more visible in Google Searches. Still, Vimeo has a good reputation amongst the 90 million creators (Vimeo 2019) who use it, and the comment sections tends to feature much more constructive criticism than Youtube ones.

The company is based out of New York and makes their money by selling video hosting services, so publishers and businesses can offer their users an ad-free viewing experience. With $160 million in revenue last year, it appears to be financially sustainable (Reuters 2019).

Vimeo allows for better quality but does not have an auto-play feature which does not encourage superfluous view-time (Adeyemi 2018) or the recommendations via AI that Youtube deploys to generate user addiction (Maack 2019). Vimeo stores their data on Amazon's AWS centers (AWS 2019). Check footnote 5 for details.

4.6 Alternatives to Whatsapp

Telegram

Telegram is likely the most popular alternative to Whatsapp, with 200 million users a month (Telegram 2019). Its messages have no limits in size, are heavily encrypted and can self-destruct. Additionally, the company has an open API and is protocol free for everyone, which means its open source . The app was famously used by many of the Hong Kong protesters, and its creators fought hard to protect the identities of these users, offering them a way to cloak their phone number from Chinese authorities (Schetman, 2019).

Telegram Messenger LLP is an independent nonprofit company located in Berlin, Germany and promises to be free forever, without ads or subscription fees. How they will do that is not completely clear. Some options include premium channels for companies or personalized screen backgrounds, etc. (Majumber 2019). The other is mining its own cryptocurrency. Telegram just raised $850 million for its first ICO (Initial Coin Offering) to build its own (Russell 2018).

While this is good news for the economical sustainability of the company, it may not be as good for the environment. Their cryptocurrency runs on blockchain technology, which, by virtue of its being deliberately slow protocols, is immensely carbon intensive. The annual carbon emissions associated with the creation of Bitcoins are equivalent to those of countries like Jordan or Sri Lanka (Stoll 2019). Add in the other cryptocurrencies, and the emissions level more than doubles (Stoll 2019).

Telegram's servers are spread worldwide for security and speed, but the company has not disclosed whether they are carbon neutral. Nor did they answer several requests for comment on the issue. That said, it is not clear yet how far Telegram wants to grow its cryptocurrency game and, since it allows for messages to self destruct with a timer, the UnSchool could use this option to significantly curb its footprint on the platform.

Signal

Signal is similar to Telegram but also allows video calls. Its messages and calls are always end-to-end encrypted and painstakingly engineered to keep your communication safe. The app is used by many investigative journalists and cryptographers, and it has even been endorsed by Edward Snowden (Signal 2019).

There are no ads, affiliate marketers or tracking of any kind. The app is maintained and developed by the Signal Foundation, a 501(c)(3) nonprofit organization that was cofounded by Brian Acton, the co-founder of WhatsApp, who gave $50 million to it (Coldewey 2018). Telegram is Open Source project supported by grants and donations, so their financial viability in the long term is not guaranteed.

As for their environmental footprint, Signal runs its own centralized servers but hasn't answered our questions about which energy they use to run them. The app, however, does also offer the option for users to set their messages to disappear at an interval of choice, allowing individuals to reduce the amount of data they store and hence the amount of emissions they generate.

4.7 New Team Collaboration Tool

As the UnSchool considers using a project management tool, below are a few vetted options.

Monday.com

Monday.com is an Israeli company with offices in Tel Aviv and New York. It offers a varied set of tools to manage a team's workflow, including kanban view and activity log as well as a timeline, calendar and map view. The tool has a tasks-only approach, focused on executing on one thing at a time.

It appears to be doing great financially, recently raising another $150 million and putting its valuation at $1.9 billion (Lunden 2019). They are invested in maintaining a highly secure service and are GDPR compliant (Monday.com 2019). Their servers are in Amazon's AWS data centers located in

Northern Virginia (AWS 2019). Check footnote 5 for details.

Monday.com offers no free option but instead several packages with price depending on the number of users. On a monthly basis, and for up to 5 users, the Basic plan is priced at $29 per month.

Asana

Asana is a comprehensive web and mobile application for teams to organize, track, and manage their workload; it includes calendar, tasks, deadline alerts, kanban boards, gantt charts etc. Users can expand tasks into subtasks and define relationships between them with dependencies for a more Systems Thinking friendly view.

The company keeps users' data secure and is SOC 2 (Type 2) certified. It also works with third-party security services, and it runs regular penetration tests and network scans to reduce vulnerabilities and security threats to the data (Asana, 2019).

Asana has a good track record of employee care (Glassdoor 2019), a fifty-fifty gender split in management, a strong commitment to equal pay and the promotion of diverse talent (Asana, 2019).

The company runs its servers through Amazon's infrastructure. Its free version is available for teams of up to 15 people. Asana Premium costs $10.99 per user per month when billed annually.

Riot

This open source alternative to Slack is free and has many similar features, including messaging boards which can be organized as groups and sub-groups, file sharing options and even voice and video conferencing. Notifications and privacy settings can be totally customized to meet each of its 7 million users' needs. All data can be end-to-end encrypted, meaning no-one else can eavesdrop, not even admins (Riot, 2019).

Riot is the brainchild of the Matrix Foundation, a UK-based Community Interest company with the goal of creating open networks for secure, decentralized communication (Matrix 2019). The software is designed to be run on the users' server of choice, making it slightly less user friendly to set up, but giving the company entire control over its data and energy sourcing (Riot, 2019).

5. Phase II Conclusion

This second phase of research has shown that the tools that the UnSchool uses for internal communication have so far been largely environmentally sustainable, yet some social and economic impacts are worrisome — particularly in the case of Google services.

We now have a clear picture of these consequences. Still, digital communications are a complicated arena, so full of ever-changing technical innovations and affecting such widely different socio-political contexts that reaching broad conclusions is almost impossible. Even when a specific tool or behavior appears to be have measurable negative impacts, choosing what to do with that information is not easy.

Firstly, companies are often not equally sustainable in the three areas. This means that a giant corporation like Google is likely to have the largest social impacts but also the financial resources and political clout to build its own highly efficient server infrastructure and become a major renewable energy buyer (Pichai 2019).

What's more, different services owned by the same company can have very different effects. Google Maps, for example, does not have the same effect on privacy as Google Drive does, so the question remains whether it makes sense to disinvest from using a specific tool from a company or all of them.

Finally, economic sustainability may not always favor the smaller options. Google can offer its services for free because it sells users' data, which means that more privacy options will also be more expensive. Even further, many of these new tools are offered by young startups or non-profits, both of which are more likely to suffer economically down the line, forcing the UnSchool to change providers again.

As always, sustainability is not a clear choice but a trade off, and it ultimately is up to the UnSchool leadership to decide which are its priorities and what is the least of all problematic options. The first step is knowing them (Bansal 2016).

5.1 Impact Summary

The following table is an overview of each company's "scorecard" in each sustainability category. These ratings are the individual opinion of the report's author, determined by her own metrics and based on the research conducted so far.

	Social Sustainability	Ecological Sustainability	Economic Sustainability
GOOGLE SEARCH	F	A	B

GMAIL	F	A	B
GOOGLE DRIVE	F	A	B
WHATSAPP	F	A	B
CANVA	A	B	A

A - They appear to be fully committed in this regard and are setting an industry standard
B - They appear to have some shortcomings but are actively trying to overcome them
F - They have major shortcomings and don't appear willing or capable to overcome them

5.2 Recommendation

The research supports a few key steps that could be taken to alleviate the impact of the UnSchool's internal communication strategy:

➢ **To reduce social impact:**
  ○ Disinvest from Google services - ie: Google Drive, Gmail and Search
  ○ Inform others about the risks that Google services have on their privacy
  ○ Invest in using alternative tools (see section 4)

➢ **To reduce environmental impact:**
  ○ Use GreenPeace Guide to Greener Electronics (Fairphone and Apple lead the pack)
  ○ Keep any physical digital devices for as long as possible
  ○ Have a thorough end of life strategy for all electronic devices
  ○ Whenever possible, store big files in actual physical hard drives, since they use significantly less energy than the cloud
  ○ Consider doing a quarterly download and permanently deleting the online copy
  ○ Add browser extension to keep tabs on the emissions of web surfing
  ○ Whenever possible (for quick searches or e-mails), use a phone or tablet over a laptop or desktop because they use less electricity
  ○ Before producing any new content consider: Does this really need to be created or can we repurpose some existing content?
  ○ Reduce the weight of videos by compressing them
  ○ Set timers to self-destroy messages on texting apps
  ○ Do regular clean up of old versions of documents from cloud services
  ○ Avoid using blockchain technology or cryptocurrencies powered by it
  ○ Whenever possible, use text instead of photo, and photo instead of video

➢ **To reduce economic impact:**
  ○ Where possible stop working with Google drive
  ○ Whenever possible, choose decentralized networks which are more resilient to attacks and less prone to controlling users' behavior
  ○ Move to non-advertisement funded alternatives (see section 4)

- Develop a community in a platform that respects the privacy of the members and also gives the UnSchool, as admin, full control of its moderation and reach
- Use the transition as a way to educate users about the potential pitfalls of advertisement based platforms
- Avoid paying for redundant digital services: for example, a cloud storage facility, a web call service and a team collaboration tool when it turns out that the collaboration tool already provides cloud storage and web calls

These are not meant to be exhaustive to-do lists but, instead, a starting point for the UnSchool's team and community to figure out how to take actions online that align with the company's sustainability principles.

All of these conclusions are likely to be time-sensitive. As technology evolves, regulators crack on big tech companies and the general public becomes more aware of its digital footprint, we are likely to see important changes. It is recommended, therefore, that the UnSchool amends this report as new information arises and sets up a specific time to review it yearly.

PHASE 3: POLICY DEVELOPMENT

1. Introduction

As a result of this investigation into the impact of the UnSchool's internal and external communication approaches, social, economical and environmental impacts, a policy statement was developed and changes to the operating process of the organization has and will continue to be made. This was developed by the founder in connection with the team and researcher responsible for the main report.

It was surprising to discover just how much of an impact the seemingly simple choices of what platforms to use and the frequency of use has on the environment and society. Of course, as a small organization, we have time and resource pressures in having to maintain and run any form of marketing and communication in order to reach customers and achieve their mission. Our mission is to affect positive change, and thus, embedding this in all that we do is critical to the operations of the entire organization.

Simple choices made early on, such as hosting our alumni community on Facebook, resulted in many of our alumni being forced into that ecosystem, despite them having previously opted out. Similarly, Google is fantastic at providing services such as Google Drive, designed so well it ensures you don't ever need to look for alternative options. Each of these platforms met our needs with varying degrees of impact. It's obvious that there are no 'perfect' solutions, yet changing our intentional communication approaches and community engagement techniques will allow us to support our community whilst mindfully ensuring that the outcomes are working towards net positive.

Significantly, the new knowledge and insights that this reporting process has offered enables all team members to be more assertive and proactive when designing strategy or interacting with fellow team members. The reduction in social posting may have a negative impact on our ability to engage our community and communicate our work, but we intend on being very sincere about our actions. It is thus hoped that the quality-over-quantity method we will move towards will result in more mutually beneficial engagement.

2. Actions

Based on the recommendations provided, the following main actions have or will be taken by the UnSchool to support a shift toward more sustainable communication approaches:

1. Significant reduction in social posting to Instagram and Facebook; as per the recommendations, we will make a community announcement and then we will only be posting once per week unless we have significant announcements to make such as programs or milestone projects
2. Transition off Facebook and onto LinkedIn for the majority of our community engagement and communication
3. Transition our alumni community from Facebook to LinkedIn groups
4. Utilize our newsletter (which is hosted via our website provider) as a more central location for communicating the ideas and offerings (as it stands, we write a long-form journal article each week and share it to our newsletter subscribers)
5. Provide more high-value specific content to a more engaged community on LinkedIn
6. Move internal communications to more ethical options and diversify the platforms we use as to reduce the 'locked-in' effect
7. Conduct research on the ethical and environmental impacts of any new platforms that we will move to or start using as part of any of our external or internal communications
8. Continue our policy of not paying for any Facebook or Google ads and instead, rely on high-value experiences to further transmit our work
9. Work with our community to create and maintain high-value exchanges that support continued growth and community development in ethical and sustainable ways
10. Conduct digital audits regularly, removing unused files from the cloud, creating offline backups and reducing the carbon burden that our digital activities have online

3. The UnSchool Sustainable Communication Policy

The UnSchool is committed to making a positive impact through all that we do. We know that there are trade offs in every action, and we seek to gain the knowledge to inform better decision-making so that we can ensure the actions we take have a more positive impact in achieving our goals and operating as a business.

We know that any action taken, off or online, will have an impact and that the internet, whilst seemingly digital is actually physical, and thus has real-world impacts, from energy use through to impacts on society, as well as the economy. One person sharing one thing can influence many

others, but increasingly, the internet, and specifically social media, has become a screaming ground where you have to compete for attention in the most flamboyant way. Every video, image, word and idea shared online has not just the potential to impact the receiver of the information, but also the planet, as we increase the amount of data uploaded and stored on servers around the world.

This all poses a significant conundrum for a social impact organization such as ours. In order to be seen and heard, you must be present and posting. This ensures that we are all stuck in a continuous vicious reinforcing feedback loop whereby more is never enough. We know we need to communicate, but there are many ways of doing this. And in a content-saturated world, we would like to be one of the organizations who takes the time to learn, reflect and consider the impact of our actions and ensure that what we do choose to participate in is done so with the knowledge that it is the best option for us, for our community and for the planet at large.

Thus we have a reduced posting schedule and actively consider the places we ask people to meet us digitally. We research the impacts of our digital activities, regularly remove and store offline files, and consciously consider all media uploads. We offer high-value considered content posted once per week, and we do not buy digital ads. We will continue to strive to learn about the impact of our digital activities, and through this, evolve the way we engage with our community, share content and make change.

Considerations for other organizations

We decided to conduct and release this report as a result of our own enlightenment that this research has brought us. We strongly encourage other organizations, especially those interested in affecting positive change, to conduct an audit of your external and internal communication approaches and then make considered choices to help minimize the social, economic and environmental impact of your organization's impacts. This kind of work can be frustrating as you uncover impacts to your actions that you previously were not aware of, but this is how we make change, through the tension that new knowledge brings.

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