Theory of Change:

Sustainable Web Design IBM

Here's how Mightybytes creates positive social and environmental impact for stakeholders through an Impact Business Model (IBM) that includes sustainable web design, Ecograder, and green web hosting.

Product/Service Description

Sustainable web design is a hybrid blend of environmental conservation principles and performance-based web and usability standards. Web sustainability services conserve resources and reduce the carbon impact of digital products and services. Our work in this area is grounded in four key principles:

1. **Performance Optimization:** Reduced page weight and smaller file sizes conserve resources, reduce energy use, and improve performance.
2. **User Experience (UX) Design:** Remove barriers to content, help users make more sustainable choices, and optimize the number of steps it takes for users to accomplish key tasks, which reduces resources and energy use.
3. **Content & Search Performance:** The faster users can find what they need, the less energy they use.
4. **Green Web Hosting:** Serve digital content from pages hosted by servers that are powered with renewable energy.

When combined with ethical business practices and responsible client/project ethos, sustainable web design can help an organization achieve an impact business model and contribute positively to the growing global impact economy.

Product/Service Mission & Impact

Here's how web sustainability aligns with Mightybytes' Impact Business Model.

Mission

Digital products and services that adhere to sustainable web design principles perform better, improve user experience, and reduce emissions and other material resources. By incorporating these practices into everything we do for clients, we can measurably improve

their operations, help them meet business and marketing goals, and reduce the environmental impact of their digital products and services.

Impact

The Sustainable Web Manifesto calls for an internet that is:

- **Clean:** powered by renewable energy
- **Efficient:** use the least amount of energy and material resources possible
- **Open:** accessible to all, foster the open exchange of information, and allow users to control their data
- **Honest:** design and content don't mislead or otherwise exploit users
- **Regenerative:** support an economy that nourishes people and planet
- **Resilient:** function properly at times and places where people need them

Yet the internet currently lives up to very few of these aspirations. The ultimate impact we want to create is an internet that serves as a force for good and meets the criteria listed above. Web sustainability can help us do this.

Key Stakeholders

By incorporating sustainable web design principles into everything we do, Mightybytes helps a number of stakeholder groups:

- **Mission-Aligned Clients**: By maximizing efficiency, increasing usability, and improving performance, clients can more quickly reach their business goals.
- **Web Communities**: Website owners, product managers, digital marketers, designers, developers, and organizations looking to change how they adopt, create, and use data and digital products/services will benefit in many ways.
- **Users**: Those who use these digital products and services will benefit from better, more usable, inclusive, and accessible experiences that empower them to control their own data. Because of their small file size, speedy performance, and commitment to accessibility, products that employ sustainable web design can also help underserved communities such as people with disabilities and those in low-bandwidth areas.
- **The Planet:** Powering servers by renewable energy and measurably reducing emissions directly addresses the ongoing climate crisis and the impact of digital products and services on the environment.

Theory of Change

Sustainable Web Design practices lead to energy savings, improved user experience, reduced carbon footprint, and other benefits. They can also save time and money, directly impacting an organizations' long-term sustainability and bottom line. Mightybytes pioneered this practice in the mid-2010s with tools like Ecograder, a TEDx Talk, and a book, *Designing for Sustainability: A Guide to Building Greener Digital Products and Services*.

Mightybytes also works to raise awareness about the internet's environmental impact and to educate designers and developers about the tools and tactics they can use to create digital products and strategies that are both people- and planet-friendly. We blog regularly about the intersection of sustainability, design, and technology.

This is necessary for widespread adoption of these principles. We have a separate Theory of Change for the company's educational materials.

Inputs

To effectively create change in this area, we need a number of inputs to the system:

- **Sales Pipeline:** Clients who are interested in making a measurable difference will be key to success. This will require education and awareness.
- **Tools & Processes:** Easy to understand design and development processes, as well as tools like Ecograder and others to support these processes will help us scale the service as interest grows.
- **Measurement Strategies:** Formulas used to calculate digital emissions and performance improvement will help support ongoing resource conservation and emissions reductions.
- **Long-term Thinking:** Ongoing commitments to continuous improvement from clients who share our values will be necessary to measure progress over time.

Activities

A variety of activities will be necessary to enable the transformative change described above. These include (but are not limited to):

- **Web Performance Optimization** to load as few page assets as quickly as possible without sacrificing user experience.
- **Improve User Experience** to help accomplish tasks quickly and efficiently without confusion or barriers. (See also: Theory of Change: Digital Accessibility)
- **Improve Content Strategy** to help users find content that quickly answers their questions.
- **Green Web Hosting** to power digital products and services with renewable energy.

- **Client and Project Ethos** to align the work you produce with a vision that supports a just and more sustainable future and creating mutually beneficial relationships with project stakeholders that are built on trust, transparency, and accountability. These things greatly improve chances for project success and long-term product/service sustainability.
- **Educational materials** to provide stakeholders with information and training on these topics (see Theory of Change: Educational Materials for more information).

Outputs

We'll know our activities have been successful by the following short-term outputs:

- An increasing number of people are using Ecograder, which helps people better understand the environmental impact of their digital products and services. Ecograder reports help users find quick and easy ways to reduce consumption, eliminate waste, and use less energy. This tool is currently being redesigned to incorporate emissions measurement and, eventually, domain-level progress-tracking.
- A pro version of Ecograder exists, as do WordPress and/or Drupal plugins.
- Aggregate data shows marked improvements over time in performance, energy reduction, and decreased emissions.
- Educational resources such as books, webinars, online presentations, and so on help stakeholders better understand how to improve performance.
- Interest in this topic has increased from the web community and other stakeholders.

Outcomes

We'll know we are successful when the following criteria have been met:

- **Adoption:** The majority (rather than a small minority) of digital products and services on the internet are optimized based on these principles.
- **Financial Solvency:** Ecograder is a financially solvent sustainability management platform for digital products and services.
- **Tools:** A wide variety of tools and platforms are available to help content creators improve the environmental impact of their digital products and services.
- **Education:** Sustainable web design is taught at schools and universities as best practices.
- **Legal Accountability:** Legislation has been enacted to support these practices.
- **Expectations:** Clients have expectations that this is how digital products/services will be designed.

Roadblocks & Negative Impact Analysis

Below is our analysis of potential roadblocks and negative impacts to stakeholders that could potentially impede development of this product/service.

Roadblocks

These things could potentially get in the way of long-term product/service success:

1. **Prioritizing Sustainability:** Clients don't prioritize sustainability or understand why this is important, making sales difficult.
2. **Education:** This is an emerging field. Adoption rates are slow. Education must be part of the onboarding process, which slows down the sales cycle.
3. **Cost:** Because this approach requires extra steps to implement, it can cost more than standard web design services, which could put it out of reach for some clients (and also impede potential sales). Templates, themes, and frameworks could help with this.
4. **Competition:** The market for web services is incredibly competitive. Offshoring, templates, and page-builder products cut costs while also sacrificing quality and increasing environmental impact. This undermines our ability to sell comparable services, especially if clients don't understand the value of our approach.
5. **Third-Party Data:** The service relies on third-party providers for "green" hosting. If one of those providers changes their approach, it could undermine the service's environmental credentials.
6. **Scalability:** Given its many steps to implement, the service could be difficult to scale.
7. **Specialized Skill Set:** The skills required to execute this service are highly specialized, requiring significant training to get teams up to speed.
8. **Emerging Data:** Research on calculating digital emissions is constantly evolving. Changing formulas could cause communications problems with customers.

Potential Negative Impacts

Taking stakeholders into consideration, we have identified the following potential negative impacts to this product/service:

1. **Cost:** Because ongoing due diligence is required to maintain accessible and sustainable websites, service cost could be prohibitive to some organizations, negatively impacting both client and Mightybytes' bottom line.
2. **Jevons Paradox:** If a lean, scalable solution is designed, rapid adoption rates could potentially negate the service's environmental benefits.
3. **Emerging technologies:** New technology platforms could increase competition or render our products/services obsolete. As a small firm, it will be difficult to keep up.

4. **Formulas:** A change in emissions calculations formulas could reduce the environmental impact we hope we're improve.
5. **Specialized:** These services are highly specialized, which could make employment out of reach for some people.

Mightybytes will take these issues into account and look for potential solutions as we work to evolve this service.

Additional Questions to Ask:

To move this forward, we might ask ourselves the following questions:

- How might we find funding for free and pro versions of Ecograder?
- How might we improve measurement capabilities to help clients better understand the impact of this approach and continue to advance awareness and education?
- How might we better incorporate related principles into a more holistic approach?
- How might we use the emerging awareness of Corporate Digital Responsibility (CDR) as a means to educate people about these practices (which are a subset of CDR)?
- Any others?