The Universal Ecolabel

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Abstract

The public in virtually all nations believes that climate change, induced by human activities, is real. Many people feel a personal sense of responsibility and strive to use environmentally friendly products and services. However, people also realize that environmental issues are complex. Tools that enhance consumer knowledge and encourage appropriate environmental choices have the potential to facilitate change. The creation of the Universal Ecolabel (UE) allows consumers to scan products and become informed of the environmental and social footprint of their purchases. Full life-cycle analysis has proved to be the golden standard for sustainability in a world where the human population is over 7 billion and resource utilization is finite. Real-time analysis of products allows consumers to make better decisions. The creation of a Benefit Corporation and "collaborative" will allow for the creation and monitoring of the UE codes.

Keywords: ecolabels, codes, components, sustainability, subsets apps, measurements, environment

1. Background

Ecolabelling has developed over the last twenty years as a means for consumers to identify products that meet some elements of a wide variety of ecological goals, allowing producers to better distinguish their products in the marketplace. These standards vary significantly by product and the potential environmental impact of the product's inherent resource utilization, energy consumption and disposal cost. Some factors are considerably more important in one industry than in another. Ecolabels currently provide little direct information from the product label, but rather only give an acknowledgement of certification. In most cases, rating data is available only from the certifying agency itself, making both the process and results suspicious.

In response to this informational void, the authors have developed a "Universal Ecolabel" (UE) format, in an Earth Accounting (EA) application and system, to assess the energy, matter and human component for any product or service during phases of production, consumer use and post-use. The measurable standardized format provides transparency, comprehensive analysis and a consistent format that can be evaluated, tracked and replicated for presentation of all data. The UE provides a non-monetary accounting method for monitoring the finite planetary resources used by humanity in a manner that is not possible with the current monetary accounting system.

Inclusion of the information in a barcode format for cell phone or home computer use, as shown in **Figures 1 and 2**, provides the consumer with the potential to monitor an individual's complete environmental "footprint". Additionally, it provides a method for producers and consumers to distinguish products across multiple industries.

This paper will detail label elements, identify the basis of selection for each category, outline the label data acquisition process and describe the full implications of label implementation.

Figure 1

Figure 2

2. Corporate Social Responsibility is Good Business

Traditional neo-classical economic theory has only considered economics or making profits as the guiding business principle (Clark and Fast, 2008), reflecting the belief that other issues will be addressed by free and open markets that are competitive. This arena is one of constant friction between market economists, ecological economists, social capitalists and others promoting the sustainability movement (Clark and LI, 2004 and 2012).
The classic case in point is the California energy crisis from 2000-2004, in which the state laws deregulated energy under the assumption that free markets would reduce costs and stimulate innovation. That did not happen. Instead, fraud and market manipulation become the economic norm (Clark and Bradshaw, 2004). Then, in 2008, the same kind of free market paradigm led to the global economic collapse. The pyramid numbers based on false values for land led to the collapse of the stock market and the recession that was the worst recession since 1939 (Economist, July 2009).

One of the UE primary roles is to identify "externalities," which are economic issues beyond cost-benefit analyses that are passed on to society. While the label does identify the internal components of products (e.g. chemical, formulas and processing), it also identifies the externalities in a more detailed manner than any other known tool. The authors would even offer a more complete definition of "externalities," which refers to issues such as additional costs from obtaining products (including labor and workers) associated with financing, services, shipping, handling, marketing and even recycling, reuse and other environment impacts.

The effects of products and production methods that cause adverse social, environmental and health impacts without remediation or prevention by the producer are significant parts of externalities. Such externalities extend not only to production but also to consumer use and post-use, which are also identified on the label. Hence, the UE makes the full gamut of externalities transparent to the consumer but does not place a monetary value on any one of the externalities. By doing so, this avoids the conundrum of attaching monetary values to environmental issues. While the Universal Ecolabel seeks to account for the impact of production and production methods, it does not make judgments about a company's action. Transparency is what is sought, allowing the consumers to make informed choices.

On another level, UE requires Corporate Social Responsibility, which includes involvement in social issues that range from financial support, support of the local economy, hiring practices favoring disadvantaged community residents, and community service by corporate executives to working with other employers to survey, recognize and involve the community as stakeholders in company decisions that impact all communities.

3. The Universal Ecolabel Description

In short, the Universal Ecolabel is both a comprehensive non-monetary tool for defining how "green" a good or service is, as well as a validated scientific tool to achieve maximal transparency, providing the consumer with the decision-making information needed. The UE label does not attempt to grade one product against another. This decision-making component could have been included as an overall rating score, but was intentionally avoided by the authors so as to empower consumers and not prioritize for them.

This does make the consumer's task somewhat more difficult than being presented with the advice to "eat/buy this, not that" used by many people. However, it avoids product endorsement and acknowledges varying priority sets by different consumers.

The basic UE label format consists of three columns, which:

1) Describes all product inputs at the point of consumer purchase, including packaging and distribution.
2) Notes resources added by the consumer during single use and lifetime use.
3) Describes product disposition post-use.

As seen in **Figure 3**, here are four (4) areas or Components that contain scientific information and data that is needed and included in the UE codes. Matter is the first Component. The subsets are human/animal/plant toxicity and adverse effects on the atmosphere/air, water, and land (ecosphere). The second Component is Energy, which includes production, distribution, and recycling of products. The third Component is the Human Component, which contains information about wages, child labor, working hours, forced labor, etc. Packaging is the fourth component, containing information about the matter and energy used in the production of packaging and information on biodegradability, reuse, recycling, and return of the material in the packaging.

Figure 3

4. Matter Component

Theoretically, like food labels, this section could be as simple as a list of contents described by element and the weight or percent of contribution of that constituent to the product. This would be value neutral. However, since the label is meant to help facilitate informed environmental choices by consumers, presentation in a format that allows easiest recognition of beneficial and detrimental environmental materials better meet this purpose.

The toxicity and environmental hazard of some substances in small quantities is greater than others in large quantity. Some materials are quite scarce, while others are abundant. For some substances, toxicity requires a threshold dose and is often determined by the duration of exposure. Part of the label's mission is to promote greater understanding over time. Consequently, a presentation format that simply gives quantities or percentages of certain materials can be falsely communicative. Other presentation options besides this format were explored. After considerable deliberation, a third method differentiates materials based upon the product and the production processes associated with adverse consequences to humans, animals, plants, air, water or ecosystems. This could also be called the "Adverse Impact" method.

As shown in **Figure 4**, the "matter" box is divided into six categories: humans, animals, plants, air, water, and ecosystems. Qualitative methods identify the product as having low, moderate or high adverse impact in the selected category.

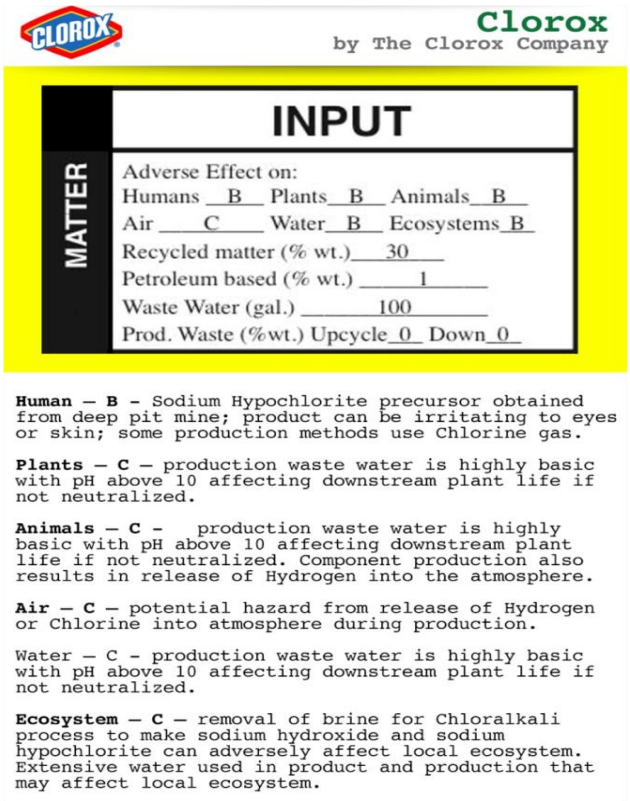

Figure 4

4.1 Matter Subsets

Many products pose adverse impacts in multiple criteria. The authors have created subset categories:

4.1.1 Human Toxicity

Substances widely recognized as toxic to humans include volatile organic compounds (VOCs), formaldehyde, mercury, lead and other heavy metals including polyvinyl chloride, which yield toxic dioxin when burned. Other toxins include phthalates, polybrominated diphenyl ethers (PBDE), and Bisphenol A (BPA). Many of these products are petroleum-derived. Unfortunately, of the 30,000+ chemicals used in industrial processes, few have had a thorough analysis. The Environmental Protection Agency (EPA) has only listed five as sufficiently toxic to warrant use avoidance. These five include asbestos, lead, PCB's, DDT and CFC's. The EPA also provides a list of 300 dangerous chemicals that it requires manufacturers to identify. There are other lists from respected scientific organizations that could be selected as well. The goal of the Universal Ecolabel is to make consumers aware of product contents that are potentially hazardous.

4.1.2 Animal Toxicity

The subset for animal impact contains many of the same substances as those listed under human toxicity since the two biological systems are subject to most of the same toxin effects, although often at a lower exposure dose for animals. Additionally, some products not eaten by humans can become part of the animal food chain. In some cases, products that are discarded interact with the environment by photochemical reaction or soil chemical reaction to become toxic to animal species. In other cases, impact may be unknown, requiring specific designation acknowledging areas of scientific ignorance.

4.1.3 Plant Toxicity

Plants present different issues because they are confined to a local environment where local resources can hurt them. Consequently, water availability, sunlight availability, soil leaching, pesticides/fertilizers and faunal alteration can drastically influence plant growth. Acknowledgement of the integral part that plant life plays in the web of all species' survival requires recognition and monitoring of the human industrial impact on the plant world. The honeybee colony collapse and its impact on plants requiring pollination have brought the intricate web between species clearly into sight. Consequently, this category is a required label element.

5. Environment Component

5.1 Atmosphere (Air) Component

Substances that affect air quality are well understood. Similarly, the set of adverse impacts on air has been thoroughly identified. Air has been designated as a unique category because air is everywhere above the land and sea and is necessary for the healthful functioning of all living species. Hence, monitoring impacts on air is critical to any comprehensive environmental effort.

Seven commonly identified air pollutants are CO, NOx, O3, SO2, Pb, particulates less than 10 microns and particulates less than 2.5 microns (Greenberg, 2003, p.625). Consider just a few atmospheric issues. Both carbon monoxide and carbon dioxide are major causes of global warming. NOx and SO2 both contribute to acid rain and have long been recognized as emissions from coal-powered, electricity-generating facilities. Halogenated hydrocarbons have been largely responsible for atmospheric ozone layer depletion, and the full adverse impacts have not been fully elucidated. Lead toxicity, through inhalation, has also been identified and documented in detail.

Exposure to particulate matter affects the respiratory system and can also be an entry point for other biological toxins. Not included in this list is methane (CH4), known to be an even more potent greenhouse gas but less abundant than others. Radioactive materials can also contaminate the air but usually do so as a byproduct of land or water-based activities (particularly mining). In some cases, the material sought is radioactive and air contamination occurs as a byproduct of the recovery process. Release of radioactive materials also occurs as a result of disasters in nuclear power plants.

5.2 Water Subset

Water pollutants have also been identified. Distinguishing fresh water from salt water is critical. Since the planet's fresh water reserves represent only 2.5% of the total planetary water (Gleick and Cooley, 2006), distinguishing between the two types of water is particularly important. Also, fresh water is located in specific aquifers whose depletion or pollution can have dramatic impacts on human habitation of an area. Factors that permanently remove water are equally important.

Elements to monitor in water include fecal bacteria, viruses and other organisms, loss or gain of major nutrients, heavy metals, radioactive materials, salinization of fresh water, dead organic material (causing loss of oxygen), major temperature alteration, petrochemical contamination, excessive sediment added to the water and non-degradable chemicals like DDT, dioxin, pesticides and fertilizers added to the water. Destruction of associated land habitats can lead to excessive runoff that not only pollutes the water but also alters the entire ecosystem. A means for representing these adverse impacts is an important label component.

5.3 Land (Ecosystem) Subset

The last category is land or ecosystem, which was added to express the integrated nature of all species on the planet. When wolves were removed from Yellowstone National Park, deer multiplied. As they did so, their need for increased food resources resulted in an impact on the forest and meadows, which in turn affected floral species. Mine tailings dumped into streambeds alter normal drainage patterns, affecting the numerous species in balance with the prior drainage pattern. Furthermore, clear-cut forestry causes topsoil to erode easily, carrying away the minerals and microorganisms that are a part of an ecosystem. Specific components of the ecosystem subset include locally dumped waste from mining, depletion of fish or shellfish species, killing unwanted "pests," deforestation, over-development of suburban areas, imposing on the territory of wild species, concentrated agriculture, and even monoculture farming, which predisposes pest invasion.

One measure of the quality of an ecosystem is the soil present within the ecosystem. Penn State University has developed a soil-monitoring tool called the Pennsylvania Soil Quality Assessment. This tool not only can measure the soil's quality but also can be used to monitor potential adverse impacts upon the soil ("Pennsylvania Soil Quality Assessment", 2000). A tool such as this is useful for monitoring farmland and may also be used to assess land subject to erosion from one year to the next.

6. Production Cycle Component

The amount of recycled material is important because the recycling process for material acquisition is quite different from virgin collection. This can most easily be identified as the percentage of weight of the product that is made from recycled materials.

Since petroleum, unlike metals, is degraded to carbon dioxide and water, unusable products, and because petroleum contributes greatly to air pollution, global warming and depletion of a finite resource, inclusion of the amount of petroleum in the product is a useful label element. It can be defined in terms of percentage of weight of the product.

Utilization of water during the production cycle represents one element of matter that is particularly important and is often not apparent to consumers. Production systems that use considerable water have learned to reuse the same water over and over in production. Consequently, the format that best represents the true production cost is "effluent" water, or water that is discharged from the production facility into the ground, sewage systems, rivers, lakes or streams. Not only is the water quantity important, but consideration should also be given to the amount and type of contaminants in the water.

A means to account for the extremely large amount of industrial waste from manufacturers is missing from this list. For every ton of product produced, many more tons of wastes are created. In fact, industrial waste is roughly 1 million pounds per person per year (Hakwen and Lovins, 1999, p. 8). Because this is often invisible to the purchaser, but a significant contributor to environmental and resource degradation, the authors felt compelled to find a means to include this issue on the label. In most cases, the waste weighs more than the product and hence a percent expression will be greater than 100%.

7. Energy (Production, Distribution and Recycle) Component

This category consists of the total amount of energy consumed during all phases of production and distribution of a product to the point of purchase. The energy input includes fossil fuels such as coal, oil and natural gas. However, energy from renewable sources, such as wind, solar, tidal, hydroelectric, geothermal energy and nuclear power, require a different set of factors and criteria for data collection and measurements.

A detailed fossil fuel description gives an indication of greenhouse gases emitted into the environment. Nuclear power presents a different problem. It does not produce greenhouse gases, but its waste products are not only characterized by high toxicity, but also remain toxic for thousands of years. Therefore, energy derived from this source must be identified separately.

Production energy must also be described in specific units. Conversion of energy into equivalent electrical kilowatt-hours or gallons of gasoline is most recognizable by consumers. The design presumes that each manufacturer receives a document from all suppliers listing their energy inputs quantitatively and by source and then adds his additional energy contribution. The total amount is represented on the label. By using specific formulas provided to the producer, the total amount of greenhouse gases can be calculated and included on this section of the label.

8. Human Component

The inclusion of a monitoring system for impact of product production on humans is somewhat contrary to most economic theory, which presumes market factors such as supply and demand will assure that basic human need goals are met. Presumably, if a product relies on exploitation of labor, the workers will move to where work practices are better. Companies offering better workplace conditions will attract more and better-qualified workers. This would be true in a fully free and open market.

However, Adam Smith realized that this did not exist in 18th Century England when corporations were just beginning to form.

He noted how early corporations controlled the apprenticeship process to insure a competitive edge of larger businesses over smaller ones or individuals (Smith, 1982, p. 86). Even the father of modern free enterprise economics recognized that humans could do ill to one another through economic exploitation.

In a Cartesian manner, there can be a division of the physical world into matter and energy. Indeed, the label does recognize specific criteria that govern the behavior of both. However, humans are made of matter and energy; so how are humans distinct and why should they warrant a separate monitoring section? The answer is that humans embody another set of factors that is not represented in the physical world but is equally important to human success.

The unique set of factors is a subset of a metaphysical system. As defined by the authors, a metaphysical system is a term used to distinguish the universe that cannot be felt, measured, weighed and operates based on universal principles of physics and chemistry. All of these equally important aspects of human life encompass emotions, love, hate, wants, desires, thoughts, dreams and behaviors, both within each person and on a familial, communal, societal or planetary basis.

Specifically, the label seeks to identify the metaphysical relationships that impact a person as related to his employment. Others have sought to elaborate principles of optimal interaction between men at more comprehensive metaphysical levels such as the UN Declaration of Human Rights, which posits behaviors for relationships between government and people as well as between persons independent of an employment relationship.

Researchers and companies addressing this domain have chosen other terms besides "human". The term most frequently used is "social". Walmart's "15 Questions to Suppliers" refers to the human component as "People and Community" (Walmart Corporate, 2009). John Elkington, the founder of a British consultancy called SustainAbility, coined the term "triple bottom line" or 3 "P's," which refers to the responsibility of sustainable corporations to not only account for profits, but also to account for the impact of business practices on the planet and people (Elkington, 1997).

9. Scoring Method

The recognition of various environmental effects is a progressive and changing process that often contains contradictory information. Some information has more merit than others and needs to be distinguished in a consistent format that is familiar to the reader.

Among all fields of scientific endeavor, medicine has experienced some of the most rapid growth over the last 50 years and is continually updated to appease the confusion of the lay public. Never knowing all and always willing to consider other possibilities reflects the state of learning. This information serves to introduce the ranking methodology used to assess data in each of six categories.

In medical science, research of the highest order relies on randomized, double blinded controlled trials or studies (RCT), wherein neither the patient nor researcher knows what intervention is given to whom until after final data collection is complete and analysis has begun ("American Journal of Roentgenology", 2004). Multiple confirmatory studies form the "Gold Standard" of medical research. It reflects man's most objective, unbiased scientific methodology currently in practice and has contributed to rapid medical advances. It readily acknowledges areas of ignorance and limitations of knowledge in a consistent, open and transparent manner. Since one primary purpose of the UE is transparency and unbiased public education, presentation of information in a similar format seems appropriate. Why shouldn't the public be exposed to the limitations of scientific knowledge and its certainties when proven? Presentation in this method will gradually educate all concerned citizens on how to properly assess truth by presenting data in a consistent, unbiased and uniform format.

9.1 Category Methodology

In medicine, data gathered on a specific issue is given a letter grade to identify the scientific certainty. Evidence is graded as an "A" if it is based upon strong and consistent studies. Grade "B" is provided when there are good, fairly consistent studies. Grade "C" is based upon a possible correlation to an adverse effect. Grade "D" is given to reflect low probability of an adverse effect. The authors have chosen to use this grading scale for the label, but have added 2 more grades. Grade "E" reflects the knowledge that there is evidence that adverse impacts have been proven to not exist. Grade "F" reflects that an insufficient study in this area has been performed.

Using this methodology, the six identified subsets of adverse matter impacts are provided with an "A-F" grade. The grade reflects the presence of at least one adverse material component of the product or its production. In other words, the category receives a grade commensurate with the most adverse component of its product or production. This could place certain producers in a difficult position since their product contains a hazardous substance. Even if they have removed all others and tried to minimize the contribution of this substance, this effort would not be reflected in the label. This could be noted elsewhere in package labeling.

It is important to recognize that adverse materials need not be present in the product purchased but are acknowledged in this ranking if they are released into the air, water, soil or environment to affect plants, animals and ecosystems. Knowing that a producer is purchasing materials from a "downstream" producer who is less environmentally conscious will provide an incentive for the "upstream" producer to look for more sustainable vendors for production materials and will also encourage more sustainable behavior by downstream producers. Thus, the "Adverse Impact" score for each category not only reflects the final producer's contribution, but also that of all his predecessors.

Having identified the categories of information that are of concern to the consumer and having provided a method of quantifying adverse impact, producers will need to know what criteria compose the label rating process. Additionally, if they are to comply with data provision, collection methodology must be identified. While appearing to be a daunting task for the tens of thousands of products present in the marketplace, much of the work has been done by others who have assessed more narrow fields of research.

9.2 Scientific Certification

Scientific Certification Systems (SCS) has developed a data collection set for agricultural producers seeking certification as organic. The Forestry Stewardship Counsel (FSC) has developed its set of criteria for wood harvesting, and fisheries have developed similar tools. Standards set by third party certifiers, rather than by industries or specific companies seeking a "green" certification, are best. Initial adoption of many of these criteria and reporting procedures should facilitate fairly consistent and redundant implementation by producers without adoption of multiple strata of criteria. The goal is for producers to receive an instruction manual describing the detailed process to be used to calculate any requested variable.

10. Business Applications and Services

10.1 Nonprofit and Corporate

Both not-for-profit organizations and corporate consortiums have climbed on the sustainability bandwagon. The alignment of major recognized polluters, such as BP and Exxon, has raised eyebrows and suspicion. However, their stated missions, goals and purposes are highly consistent with the rhetoric of the most respected corporations in the field of sustainability. For example, Ceres leads a national coalition of investors, environmental organizations and other public interest groups working with companies to address sustainability challenges such as global climate change and water scarcity. The Ceres Coalition is composed of more than 130 institutional and socially responsible investors, environmental and social advocacy groups and other public interest organizations. An 88 page document, *21st Century Corporation: The Ceres Roadmap to Sustainability (Moffat, 2010*), includes responsibility issues including basic human rights, as well as the perspective of stakeholders including the government, investors, labor unions, civil society, business partners and suppliers, consumers and employees. Organization participants are urged and supported in efforts to meet sustainability goals encompassing the triple bottom line of people, profits and the planet. Corporate responsibility can be represented in many different ways that may be more or less effective. Consequently, any attempt to prioritize them in a ubiquitous label format requires a degree of selection best left to the consumer and not to be assumed by the label maker. The label-collected data envisions identification by the producer of participating programs from a set provided at the time of label submission.

Services also consume resources, and a comprehensive tool should include methodology for measuring the environmental impact of services. To date, little effort has been paid to the service sector in this country, but some work has been done in Europe. Indeed, several chapters in *The Future of Eco-Labelling* (Rubik, 2005) address work in several European nations that caters to tourists. The authors envision something similar in the Universal Ecolabel that is adaptable to the service sector.

11. Conclusions

11.1 Implementation

This paper elaborates on the Universal Ecolabel, a tool for measuring and accounting of goods and services.

Current work is devoted to developing a producer instruction manual that outlines the processes necessary to obtain information requested on the label. This is divided into specific questions and then an explanation of methodology, including website-available tools for calculating the desired data. This task is approximately one-third completed, with some sets fully elaborated and others only just beginning. While not complete, the authors' investigation has demonstrated that all information is attainable from readily available sources. Furthermore, sufficient development has established the unique nature of the Universal Ecolabel and its intellectual property eligibility.

11.2 Tools

Next, the tools and technology behind the Universal Ecolabel needs to be comprehensive and useful in all possible situations. This requires extensive testing, first for products currently seeking to be eco-friendly and then to all classes of goods and services. Several manufacturers, such as IKEA, have adopted very rigorous analysis of the environmental impact of their products. These companies need a tool to down cycle to their producers so that they can receive information in a consistent format. The Universal Ecolabel represents a tool that could easily be adopted for this purpose.

Technology for implementing a barcode format must be explored further. The authors have conducted research documenting the barcode history and current companies responsible for this technology. It remains to be determined if the complete set of information on the Universal Ecolabel can be rendered into a barcode format, although there is limited information capacity on most existing barcode formats. Newer forms of coding may overcome this. Another solution resides in use of a cell phone "app" at the store that links the consumer to an in-store inventory or "cloud" website that maintains the detailed product information.

Likewise, software tools for cell phone and home computer spreadsheet presentation must be investigated. Both of these elements are essential for long-term personal monitoring of one's environmental footprint. Additionally, scanning devices capable of presenting detailed information not contained on the label but from an in-store tool should be evaluated.

11.3 Strategies

This paper demonstrates that a comprehensive set of production, use and post-use environmental and social impacts can be identified. Full life-cycle analysis, including externalities, has proved to be the golden standard for sustainability in a world where the human population is well over 7 billion and resource utilization is finite.

A central implementation question is how to incentivize industry to gather and offer public information that does not always cast a favorable light on the company or product. In some nations, governmental efforts are underway to compel manufacturers to identify their production methods. In the US, however, political gridlock makes this highly unlikely short term. However, public and private enterprise have the power to implement sustainability practices on a large scale without government intervention. Several "big box stores," or major retailers, provide products to a significant percentage of consumers. Because of this, the retailer could provide its suppliers with the needed tools, offer implementation instruction and then require producers to provide label information by a specific date or have their product excluded from the retailer's shelves.

The Sustainability Consortium, largely funded by Walmart, has this capability but has not used it thus far. They are having difficulty gathering supply-chain footprint information. Initiation with "green" manufacturers willing to identify their weaknesses, and consumers demonstrating appreciation through product purchase, could lead more mainstream manufacturers to begin data collection and label publication. Adoption of a tool that facilitates more informed consumer choices should have merit with customers, potentially increasing market share even more.

The next issue is verification of supplied data. One can envision a rather large, expensive and complex regulatory and testing center to independently verify footprint information. Many ecolabel organizations are currently doing this, but only within selected parameters.

It is worth exploring a "Wikipedia-like" process that would allow private citizens, competing manufacturers, government agencies and non-governmental groups to participate in a unique information "collaborative" where each participant is rewarded based on a predetermined formula for providing useful and verifiable product information. This is one potential revenue stream. There are several others available, including customer redirection to more sustainable products meeting the same needs. There is no doubt that the greatest commercial asset of Earth Accounting will be the potential use of the large volume of data gathered. As a California Benefit Corporation, Earth Accounting needs to consider stockholder share value in corporate decision-making, consistent with the overall strategy of accounting for people, the planet and profit. Innovative strategies involving a cooperative that would reward participating companies with shares in Earth Accounting is currently being explored.

From a personal proprietary rights standpoint, a trademark search has determined that "Universal Ecolabel" is not a commercially used term and application for a trademark has been completed. A name, however, is only useful if the product is abundantly used and well recognized as a valuable public service. Greatest proprietary protection is achieved through a patent. To be patent eligible as an intellectual property, the product or idea must be new, novel and not obvious. Research has demonstrated that the label format is sufficiently unique to be patentable and a provisional patent application has been submitted. Investigation has now begun to find business partners or a big box retailer. If successful relationships are developed, full patent protection will be obtained.

The social and environmental impact of products during their life cycles can be and should be made available at the point of purchase. By empowering consumers, the Universal Ecolabel allows consumers to take action with their wallets when purchasing products, goods and services. If you have any other questions or comments, please contact Earth Accounting through the information provided in the title page.

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