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Accounting and Sustainability: Cost and Benefit

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Abstract

In today's busy, complex, and technically advanced world, it is too easy to get caught up in day to day activities that distract from what needs to be accomplished and conserved. Therefore, there is a needed emphasis on sustainability in all industries, more specifically in the realm of accounting with respect to protecting the environment and citizens. Whether it be material, information, or human capital sustainability, appropriate practices are important and require attention (Sustainability Accounting Standards Board). This thesis will (a) document information regarding the Sustainability Accounting Standards Board, (b) discuss sustainability practices businesses can take to benefit the environment while cutting costs, and (c) explain sustainability assurance. This information will be presented with a primary focus on the environmental factors of sustainability within accounting. Additionally, there will be a discussion based on my personal experience while working at a public accounting firm.

Accounting and Sustainability; Cost and Benefit

What is Sustainability in Accounting?

Sustainable accounting is an analytical process seeking to answer questions such as "What are environmental and social costs? How much money are we costing and saving? How can environment risks be evaluated? What financial information should be disclosed? How can the environmental accounting system be integrated into the financial accounting systems?" (Jasch & Stasiskiene, 2005). In terms of environmental sustainability, questions arise relating to the efficient use of resources and strategies employed to minimize waste production with minimal human and environmental interaction. Analysis discovers whether a company is supporting and practicing environmentally friendly initiatives, along with investigating how the company can be more environmentally conscious. Being sustainable towards clients and people through material and information sustainability requires assurance that appropriate information and data are provided to eliminate excessive and unnecessary knowledge. The required information must be clear and precise to allow for easy understanding. Sustainability can also be viewed by analyzing spending habits and how money is allocated. A sustainable budget promotes growth and profit for the company while assuring that cash is not being spent unnecessarily or in a wasteful way. By analyzing a company and answering appropriate questions, it is easier to examine the performance of a company while discovering sustainability focused areas of improvement.

Identifying environmental aspects and their related costs uncovers common categories that include climate, air, energy, water, waste, soil, noise, and landscape. For each category, costs can be calculated to identify areas to implement cost reduction strategies, efficiency, and environmental practices. The social aspect of sustainability includes categories such as health, safety, risks, training, education, society, responsibilities, and any other costs that the company incurs. Within these categories, the amount of each cost and the value attained by those costs can alert companies to which actions provide the most net benefits both externally and internally for the company. Once identified, the pros and cons are weighed to observe where the money needs to be allocated or spent differently. This gives insight on how the sustainable accounting within the industry will be improved (Jasch & Stasiskiene, 2005). It is not only important to implement sound policies and practices, but also to follow through and continuously work to improve. Engaging with investors, creditors, and other users to ensure their satisfaction with the ideas and practices is a continual and necessary process. Essentially, sustainability in accounting begins with identifying key costs and categories of operation within the company, followed by identifying areas of improvement and following through with implementing the new procedure or policy, with an ultimate goal of keeping investors, creditors, and other users satisfied (Sustainability Accounting Standards Board).

Sustainability Accounting Standards Board (SASB)

All practices and areas of sustainability determined for improvement affect the ultimate sustainability of the business: to keep the business in operation for as long as possible in the most effective and efficient way possible. As this is such an important aspect of businesses, the Sustainability Accounting Standards Board Foundation was founded in 2011 with the mission "to establish industry-specific disclosure standards across environmental, social, and governance topics that facilitate communication between companies and investors about financially material, decision-useful information. Such information should be relevant, reliable and comparable across companies on a global basis." The Sustainability Accounting Standards Board, "an independent standard-setting arm… sets sustainability disclosure standards that are industry-specific and tied to the concept of materiality to investors." SASB Foundation operates similarly to the Financial Accounting Standards Board and the International Accounting Standards Board. There is a Foundation Board and a Standards Board. The standards board creates the SASB standards, and the foundation board is responsible for overseeing the organization as a whole (Sustainability Accounting Standards Board).

After six years in operation, SASB has released 77 industry-specific reporting standards in which companies can specify risks relating to the environment and materiality. Prior to the release of these standards, SASB had released temporary industry-specific standards focused on material risks. According to the chair of SASB, these standards are exclusive in the market because they focus on specific industries and the effects of factors contributing to the financial performance of the company. There are other reporting standards and councils in the world to promote similar ideas, but SASB is complementary to these standards, and all standards and other boards and councils serve a significant purpose; SASB has a primary focus on investors (Ashwell). Even when SASB standards are used in conjunction with other frameworks, they still offer a very meaningful way to communicate to investors. SASB works with other organizations all of which serve the purpose of improving ways to communicate and report on sustainability issues (Sustainability Accounting Standards Board).

Focus of SASB

Businesses survive from the interest and support they receive from their investors and creditors, which is why SASB focuses on topics related to sustainability that impact a company's investors and creditors. Making comparative financial decisions can be difficult, so users must have the ability to determine which companies are following standards and addressing financially material issues. To accomplish this, "SASB identifies financially material issues, which are the issues that are reasonably likely to impact the financial condition or operating performance of a company and therefore are most important to investors," allowing companies to decide what to consider financially material and disclosable information (Sustainability Accounting Standards Board).

What is Financial Materiality?

Materiality is of critical importance in the Generally Accepted Accounting Principles (GAAP). If a piece of data or information is material, it should be disclosed to users since it has a significant effect on the financial statements. That is, it could influence decision makers (Securities & Exchange Commission). If something is immaterial, it is information without impact on a decision maker and therefore would not necessarily need to be reported, keeping the current numbers unchanged. Adding the word *financial* to *materiality* ties everything together through reporting the necessary financials of the company: financial materiality.

How does this relate to sustainability factors that can affect an investor's decision making? Many investors want to determine a company's profitability and how their resources are being allocated; how money is spent to impact the company, the community, the customers, and any challenges faced. This largely relates to companies disclosing information on Environmental, Social, and Governance (ESG) factors. ESG are the three included factors mentioned in the mission of the Sustainability Accounting Standards Board Foundation. Typically, although these are not included in the analysis of financials, they are nonetheless relevant. Areas include climate change, water usage, health and safety policies, management, and innovation (Kell, 2018). Investors and creditors look at these factors and how a company implements policies relating to these factors because "embedding environmental, social and governance factors in capital markets makes good business sense and leads to more sustainable markets and better outcomes for societies" (Kell, 2018). In return, this leads to a release of additional information for decision makers, and a way for investors to decide if they think their interest in the company would be profitable and appropriate in the long run.

In order for companies to effectively respond to the needs and wants of the company as a whole including their investors, it is essential for companies to know what ESG factors could affect their business and how certain economy, environmental, and social impacts will influence present and future decision makers. For companies to assess this, they can create what is called a "materiality map" which identifies sustainability related issues that have a strong effect on the performance of a company. SASB has a materiality map that identifies issues at the sector and industry level. This map can be found here: https://materiality.sasb.org//. Companies can map the different issue's influence on decision makers and their ESG impacts. For example, a company can plot air quality or labor practices on the graph and see where that falls in investors' decision making process and the impact of that factor (SASB). Essentially, how likely is this issue to be influencing investors, thus making it material?

Additionally, companies can take part in what is called socially responsible investing (SRI), or sustainable investing, impact investing… and this list goes on of titles this form of investing can have. This is a process of integrating ESG factors into investments to generate a positive financial return while leaving a positive impact on society. According to the Forum for Sustainable and Responsible Investment, there are several motivators for getting involved in sustainable investing. Some of these motivators include "personal values and goals, institutional mission, and the demands of clients, constituents or plan participants" (The Forum for Sustainable and Responsible Investments). Although investors strive for a high achieving financial performance, they also strongly believe that their investments contribute to growth and benefit within ESG factors and practices. Some examples of investments or portfolios that companies may target include clean technology, community development, quality of management, how companies handle risk, curbing climate change, women advancement, and many more factors that contribute to a company's success and impact on people and the environment. These investments and information are details that can be reported on by companies to inform and educate their investors, while hopefully encouraging other investors as well. As a whole, "sustainable investing strategies work together to encourage responsible business practices and to allocate capital for social and environmental benefit across the economy" (The Forum for Sustainable and Responsible Investments).

Sustainability Framework

To help a company identify what to report on and how to organize different aspects of the company relating to sustainability, SASB has an established Sustainability Framework. Along with the framework are sustainability issues related to each dimension.

1. Environment – This area investigates the effects of production on the environment. For example, consider a car manufacturing company. Is that company using a nonrenewable resource for production that is natural and safe for the environment, or is the company using harmful chemicals that are released into the environment to produce car parts? The use of the harmful chemicals can hurt the company in their operations through negative impacts and impressions, in turn causing fiscal harm. The sustainability issues involved with this dimension include: "GHG emissions, air quality, energy management, water & wastewater management, waste & hazardous materials management, [and] ecological impacts" (Sustainability Accounting Standards Board).

2. Social Capital – This area investigates the way a business will commit to society in exchange for the capability to operate. It will make sure there are strong relationships with the community, the customers, and the government, by focusing on issues such as human rights, promoting economic development, protecting all groups of people, and making sure there is access to quality and affordable products and services. This will verify if the business is appropriately marketing and practicing the strongest business practices while protecting customers. The sustainability issues involved with this dimension are: "Human rights & community relations, customer privacy, data security, access & affordability, product quality & safety, customer welfare, [and] selling practices & product labeling" (Sustainability Accounting Standards Board).
3. Human Capital – This area discusses the staff and contractors that serve to provide a value to the firm. It is essential to ensure that all employees stay safe, healthy, productive, and build strong relationships. The sustainability issues involved with this dimension include: "Labor practices, employee health & safety, [and] employee engagement, diversity, and inclusion" (Sustainability Accounting Standards Board).
4. Business Model and Innovation – When a business is operating, it is important for that business to be incorporating "environmental, human, and social issues" (Sustainability Accounting Standards Board) within the model. With innovation, it is important to have an efficient and evolving production process while being resourceful with the design and other aspects of the product. The sustainability issues involved with this dimension are: "Product design & lifecycle management, business model resilience, supply chain management, materials sourcing & efficiency, [and] physical impacts of climate change" (Sustainability Accounting Standards Board).

5. Leadership and Governance – This area involves making sure the business model, values, and practices are in line with the interests of stakeholders and identifying which issues could create liabilities or threats. For example, if a company is not following legal standards, their licenses could be revoked. Compliance, risk assessments, and observations of interests, behaviors, and actions should be regular behaviors. The sustainability issues involved with this dimension are: "Business ethics, competitive behavior, management of the legal & regulatory environment, critical incident risk management, [and] systematic risk management" (Sustainability Accounting Standards Board).

Although this is a general list of areas that help to define the SASB standards, each industry is different, containing its own set of dimensions relating to the unique aspects of the industry. The industries that SASB contains individual dimensions for, include "consumer goods, extractives & minerals processing, financials, food & beverage, health care, infrastructure, renewable resources & alternative energy, resource transformation, services, technology & communications, [and] transportation" (Sustainability Accounting Standards Board). There are currently 175 companies that are reporting using these standards. Companies who report, using these standards and include in their reports the measurement standards, have the ability to use the SASB logo, but this does not mean that SASB has approved the report. It simply means that SASB was used "as a basis for some or all of its disclosure" (Sustainability Accounting Standards Board). Essentially the standards serve as a guide for reporting for companies and are a way companies can examine their current situations and values.

Changes in Standards

Although the standards were published in 2018, there are continuous, changing, and rising sustainability issues that SASB researches and engages with in order to keep the standards current. To reflect necessary changes to the standards, SASB uses a project-based model. The first part of the project-based model is called “project screening” where an issue is brought to the table. The second part of the model is “research program” where after analysis and investigation, the next step is proposed on the effects to a standard that is already in place, or for research of an additional standard. The third step is the “standard-setting agenda” where the standards are compared to the research that was conducted and the resulting findings. A recommendation about an update to the standards is then proposed. The fourth step is the “comment period.” In this step, the public is allowed to comment on the potential changes. The fifth step, “standards update,” is where the public feedback is taken into consideration, and either an update to the standards is put in place or the decision for more review is made. The final step is the “post-implementation review” where the updates to the standards are monitored (Sustainability Accounting Standards Board). With those steps, the necessary adjustments have been made to existing standards. This is a continuous process to improve and maintain standards consistent with the ever-evolving world and values of stakeholders.

Questions Relating to Sustainability in Accounting

1. What are environmental and social costs?

Environmental costs are the costs associated with the activities that could be harmful to the environment and its natural resources. This area of observation falls into the first part of the SASB Sustainability Framework: Environment. When reporting on these aspects of the company, it is important for the company to report its environmental policy and the director of the policies, so their stakeholders are aware of the practices in place. Additionally, it is key for the company to report the environmental objectives they have in place so they can measure their performance against the objectives they set. Goals and performance are to be measured as a quantity and/or financial data. The company should provide detail of what activities are undertaken and what expenses were incurred while striving to reach the objective. This way, the company can more clearly identify the impacts they had on the environment and how well they did in protecting the environment. Penultimately, compliance towards any guidelines within the industry and regulations should be outlined with the extent at which they were followed. Finally, any risks that are not presently classified as environmental liabilities are to be disclosed along with any information from an external audit that is relevant to the environmental practices of the company (Macve, 1997, p. 186). Through disclosure of this information, investors are able to analyze the environmental aspects of the company and make informed decisions on the environmental affects that were established. The company itself is also able to reflect on the objectives they had for the year, the policies they used, and any positive or negative impacts on the environment.

Social costs are costs imposed on society from the effects of the environmental impacts of an activity. This includes all opportunity costs from the resources used for the activity plus any costs that society now faces (Deloitte, 2016). This area of observation falls into the second part of the SASB Sustainability Framework: Social Capital. When reporting on the costs that may affect society, it is important for the company to make sure they are respecting their customers and investors by treating them well, along with the environment they reside in. When a company produces a product or performs a service, they should look at the outcomes and observe the costs and benefits. It is during this time when a social issue may be identified and need further investigation. This is also where the company identifies if they have met their own mission and goals. When the social issue has been identified, it is necessary to outline and define the social issue in order to properly classify that specific issue's related costs and impacts. When defining the issues, factors to look at include "who it affects, how common it is, what change would look like, and what contextual factors are at play" (Deloitte, 2016). More specifically, when defining the issue, it is necessary to put the problem into words, establish the group or individuals who are involved or affected by the issue, classify to what extent the problem is or how many people are affected by the issue (prevalence = people facing an issue within a time period / total people at risk within the same period of time, or incidence = number of new people affected within a time period / total people at risk within the same period of time), determining what the outcomes for the future should look like based on the people affected and providing a timeframe, and considering external factors that could alter or delay the desired outcome.

After defining the social issue, the company must then identify costs. Costs related to social issues include fiscal costs, economic costs, and personal costs. Fiscal costs are "when a government payer makes a financial payment or experiences forgone revenue" (Deloitte, 2016). Economic costs are the opportunity costs: the gains and losses. Personal costs are any costs that an individual may face which could relate to the quality of life a person leads. Costs can be identified based on their impact; what would not happen if there was not this social issue? Those impacts can then be put into categories to be measured, and then each cost type can be assigned a payer(s) to clarify the persons affected by the cost.

After identifying the costs, the company should look at the sources of their data to identify the costs and do a deeper dive into that data. This will be beneficial in detailing how each specific cost is related to the social issue and to make sure that the cost figures are reliable. It is important to ensure that the numbers are credible, there is ample information, and those bearing the costs can be properly identified (Deloitte, 2016). It is essential to gather all the necessary information to provide clients, customers, and stakeholders the full details, allowing them to make informed decisions and see where the company can lead in the future.

After reviewing the data, the final goal is to come up with an estimate of a cost relating to the social issue within a given time frame and an identified payer of the cost. Once a clear estimate is made after organizing and outlining the data to easily come up with a cost value, a sensitivity analysis can be performed. A sensitivity analysis can be performed in the form of using software or looking at high and low estimates surrounding a particular value. This analysis will better define the effects of a particular cost figure on the total cost estimate. After the sensitivity analysis, a simple, "does this seem accurate?" test should be conducted. This can be done by comparing calculated values to a budget, a prior year, or published reports (Deloitte, 2016). By defining a social issue and its related costs, a business can identify areas of improvement and set related goals to be able to better serve the people and communities. In turn, the company can then establish new objectives in which to inform their stakeholders, providing them with the desired and necessary information.

2. How much money are we costing and saving?

This is something that differs for every single company, business, and organization. Contrary, there are some common areas that all companies and businesses can implement to improve their impacts on the environment and on their budgets. Additionally, there is a stereotype that comes with going green, stating that going green is an expensive way of living, but in fact, going green can have quite the opposite effect!

A very common place businesses can begin to reduce costs is with reducing energy consumption. A plentiful amount of energy can flow into the heating, cooling, and lighting of buildings. Additionally, production companies can have equipment that consume much energy in a short period of time. It is important for companies to recognize these factors that significantly contribute to their energy bills in order for them to find ways they could reduce the uses. Or they could consult the energy supplier for ways they could reduce their energy bill. An energy audit could also be requested from the supplier. Not only does this reduce costs for the company, but it will benefit the environment. It is also important to educate employees on the consequences of their actions relating to energy use. For example, using energy efficient light bulbs such as CFL and LED bulbs can cut energy use up to 75%. Other common energy saving tips come with using motion sensor lighting, only heating and cooling used rooms, putting the computer to sleep when walking away, and using laptops instead of desktops (Leblanc, 2019).

Another common way businesses can reduce their costs is to reduce their waste. Paper costs can be reduced by using more online communication and note taking methods, and making sure staff are using both sides of paper to reduce waste. For offices with a kitchen or common gathering area, glasses and mugs should replace single use paper or plastic cups and plates, and silverware that can be reused could replace plastic, single use utensils. Not only does this reduce the cost of continuously purchasing these supplies, but it significantly reduces waste produced. Finally, companies can reduce the amount of trash bins within the office to promote producing less waste (Leblanc, 2019).

To reduce water usage for a company, low-flow technology can be installed to reduce the amount of water that comes out of a faucet. Motion-sensor faucets are beneficial as they reduce the amount of wasted water when the sink is accidentally left on or not completely shut off. Finally, toilets that have different flush settings or water hippos can significantly reduce the amount of water used when a toilet has been flushed and running. Again, reducing water usage, which is extremely beneficial for the natural environment, also reduces the water bill (Leblanc, 2019).

Other ways to reduce costs but increase environmental protection includes allowing employees to work from home. As long as they are productive, there is no need for the company to provide them with heating/cooling or lighting in their unused office at the office building. This also reduces emissions from vehicles as traveling to and from the office is unnecessary. Video chatting or conferencing reduces travel, which in turn reduces fuel emitted into the air from the use of motorized vehicles or planes. This is also a more efficient way of being productive. Last but not least, it is essential for businesses to reuse and recycle. Recycling bins should be available, a recycling plan for all to follow should be in place, and staff should be educated and aware so they follow through and do their part in reducing the costs for the business and saving the environment from harm that can be avoided. Although not easily done, by having the drive and dedication to continue to improve ways of being more efficient, costs will be reduced, and the company will leave a positive impact on the world, customers, and investors (Leblanc, 2019).

At Western Michigan University (WMU), the incorporation of sustainability into campus operations is shown through their “Quasi-Revolving Fund” which began in 1980. This fund “recaptures money from cost-savings, similar to a typical green revolving fund, but it also sources capital from the broader utilities, maintenance, and other budgets as necessary in a fluid manner” (Billingsley, 2011). Because there is not a standard fund size, modifications to the general maintenance and utilities budgets are tracked by the Quasi-Revolving Fund, and “this process allows for the institution to continuously invest in sustainability initiatives that promise a high rate of return without being limited by a lack of capital in the fund itself” (Billingsley, 2011). One of the projects this fund supported was a heat recovery system that was installed in

2000. This system took excess, wasted heat from the ice rink chillers in Lawson Ice Arena and transferred that heat to the Natatorium swimming pool. Another project was the renovation of Rood hall. The building needed to be renovated in 2006 to comply with code, so when the ceilings of the building needed to be removed, WMU took the opportunity to make some energy improvements including T-8 lighting with occupancy sensors (Billingsley, 2011). It is essential for Western Michigan University and all other businesses and companies to find ways to improve their sustainability initiatives.

As outlined above, there are different ways in which a company can save costs and promote environmental health. The final section of question 2 will discuss life cycle costing – cradle to grave. This will make more clear different ways to analyze the cost effects of projects and initiatives companies want to take to save on unnecessary costs while appropriately disposing of materials. A tool to examine this is the life-cycle cost analysis which "evaluates the environmental costs associated with a product, process, structure, or activity by identifying energy and materials used and wastes released to the environment" (Snodgrass, 2015). According to Snodgrass (2015), from cradle to grave, there is resource extraction, manufacturing, construction, occupancy/maintenance, demolition, and finally, disposal. Any material that has an original purpose but in the end is destroyed and not used again for another purpose is an example of a product that would go through the cradle to grave life cycle. There is also cradle to cradle. In this situation, according to Snodgrass, the process goes: manufacturing, construction, occupancy/maintenance, deconstruction/renovation, recycling/reuse, and back to manufacturing. An example of this is a piece of paper. This is an example of cradle to cradle because recycled paper can be used to make another product. This cuts costs of having to produce new materials and reduces pollution into the environment. Unfortunately, not all paper is recycled causing some paper to go cradle to grave (Snodgrass, 2015).

When companies use this analysis to examine the materials, time, and costs that are put into the production of a good, they must understand that this activity is not a one and done type of deal and that many numbers are estimates. This process will be ongoing as the production is underway to account for any changes to materials or such that need to be made, and to account for any errors in original measurements, after going through a plan of what the life cycle costing analysis should look like. Plus, when conducting the analysis, one may not have the necessary pieces of data for the analysis, therefore resulting in assumptions being made as inputs for the analysis. The basis for these assumptions should be documented for reference. A main goal of the life cycle cost analysis is to look at other options including "evaluation of future expenditure, comparison between alternative solutions, management of existing budgets, options for procurement and evaluation of cost reduction opportunities" (Methods and Models, 2007, p. 39). Decision makers can make well informed decisions to find the option that will suit their desires for spending money and saving the environment. To begin the approach, it is necessary to identify what is to be estimated and how those estimates will be used or compared; define the system and the elements that will have a cost. From there, establish a time frame in which the good would be placed in service and the useful life of the product. Finally, acknowledge the steps in the cycle from development to disposal. In order "to ensure completeness, a full list of all possible cost elements should be first drawn up which covers all places in the project life cycle" (Methods and Models, 2007, p. 42). Once the necessary costs and data have been established, it is time to perform a sensitivity analysis, a what-if analysis, a quantitative cost risk analysis, or a combination of the above. Common accounting practices of establishing outcomes along with the mentioned analyses will provide additional cost-risk information contributing to the presentation of meaningful financial information. Once the resulting data is collected, it can be organized and presented in a way that is helpful for decision makers (Methods and Models, 2017, p. 49).

The process of life-cycle costing can allow companies to see the resources, time, equipment, and money needed to produce a product. This allows them to look at ways to reduce costs, be more efficient, and save on resources while protecting the environment. Companies can discover ways they can be more resourceful, ultimately saving time, money, and the environment. They can also look at alternatives and ways to implement different materials or equipment, which can also save on costs, and the new materials or equipment can be better for the environment. This process can be continually used and tweaked in order to constantly strive for betterment.

3. How can environmental risks be evaluated?

An aspect for companies to look at regarding their impact on the environment consists of evaluating the risks the company faces through leaving a negative impact on the planet and therefore their investors. Companies can monitor their impacts on the environment by using an environment risk assessment (ERA). An ERA describes and looks at the "interactions of agents or hazards, humans, and ecological resources" (Krishna & Manickam, 2017). From there, the ERA can analyze the agents and potential for exposure and disadvantageous effects. Uncertainties are described along with how to handle some of the risks and the effects on the human population and ecosystems of the world. Essentially, there is a plentiful amount of information released regarding the findings of the ERA which is helpful in identifying and solving issues that could be harming the environment and resulting in costs to the company (Krishna & Manickam, 2017).

According to the Environmental Protection Agency, there are two components to the ERA. The first is the human health component and the second is the ecological component. There are three stages of performing an ERA: “hazard identification and product formulation, analysis, and risk characterization” and finally, there are two outputs resulting from the assessment: risk management and communication plans” (Krishna & Manickam, 2017).

To pull the entire process together, consider a production company releasing a chemical into the environment through one of their production plants. The first step of the environmental risk assessment would be the planning stage where the purpose of the risk assessment is established. In this case, we would be observing the effects of releasing this chemical into the environment on both the human population and the ecological systems. Following this stage comes the measurements of the ways and how much chemical pollution actually enters the natural environment, and how these chemicals could react in the future. Is the chemical in the air, in the ground water or even in food being grown? Can humans be exposed and react to the chemical through inhalation, contact with the skin, or another method? Then, the risk assessor will examine how frequently and at what levels humans and the ecological systems are exposed to those chemicals. The risk assessor will not only look at the current “frequency and magnitude of human and ecological exposures,” (About Risk Assessment) but they will examine the consequences that could arise in the future as well. From this point, the examiner will take the information gathered regarding the frequencies of exposure to what is known about the chemical and what will happen when there is exposure. This will give insight on the health effects that could occur and allow the assessors to make risk calculations. Health effects for humans include anything from cancer to nerve disease. Effects for ecosystems could be anything from changes in the reproductive rates to mortality. All needed information is not always available, and therefore the assessors must make their best judgement when performing calculations. This results in estimates, but if there is communication on the reliability of the resulting risk assessment, that is the best procedure that can be done. Once these calculations and estimates have been made, risk managers will then come up with ways to protect the human population and environment from harmful substances such as chemicals. According to the Environmental Protection Agency, risk managers are "federal or state officials whose job it is to protect the environment, business leaders who work at companies that can impact the environment, or private citizens who are making decisions regarding risk" (About Risk Assessment). Finally, conducting and ERA is not a one-time process. This is something that may need to be repeated when a new company process or procedure is in place, or just over time, in order to gather more information to continuously make improvements (About Risk Assessment). Clearly, if a company is causing environmental damage, this is extremely detrimental to the reputation of the company and they could be causing health problems for their customer and employees. This will cost the company if they lose employees and customers. Plus, the recommendations that are given to the company by the risk management could be recommendations for using products that are less harmful to the environment and cost less, or they could come up with a new method of doing their job at the company that could also, in some way, save the company money; such as using a harmless resource versus a harmful chemical. Or, a company could purchase more advanced eco-friendly production equipment that could require fewer human hands, reducing labor costs. There are continuous improvements that every company can make with the goal of reducing their costs and improving the conditions of the environment, and with the help of an ERA, improvements can be made.

4. What financial information should be disclosed?

The Sustainability Accounting Standards Board gives the basis and ideas for what should be disclosed by a company based on their practices that are promoting sustainability in the company. Much of the environmental and sustainable practices that a company discloses are not finance related but can also have a large impact on the financials, such as costs to the company that can be reduced by being more sustainable. Opposite of this and unrelated to environmental impacts of sustainability comes the question of what financial information should be disclosed. There is a point where too much information can be overwhelming to investors and there is also a point where more information is needed to make well informed decisions.

PwC, one of the big four accounting firms, did a study on what financial information investors are looking for and how that information should be presented. Similar to the sustainability information a company should report, the study found that investors like to see policies listed out along with respective notes. These policies should be directly relating to the company and if there are any policy changes, those should be detailed (Eastman & Tabone, 2017). Other findings included the following:

- The financial results should be tied to the business model and identify "risks and the company's strategy" (Eastman & Tabone, 2017). The business model should clearly state the company's overall procedures while highlighting the way cash and value is generated through the company.
- The balance sheet, income statement, and statement of cash flows should be explained as it is occasionally hard for investors to understand how this information ties together.
- To allow people to better understand how companies performed during the year, it is important to have comments within the financial statements or have links to where additional information can be found and detailed. According to the study, "87% say that

clear links between a company's strategic goals, risks, KPIs and financial statements is helpful for their analysis" (Eastman & Tabone, 2017).

- The level of quality that comes with reporting matters because that reflects how willing and confident the company is when they report the risks and opportunities the company is facing.
- Adjusted performance measures (APM) are indicators that are occasionally reported in addition to results using the Generally Accepted Accounting Principles. It is important for investors to know what adjustments were made and why these adjustments needed to be made. Additionally, when there are adjustments made to the GAAP numbers, if the numbers seem odd or extremely different than what was originally stated, investors tend to find the company riskier. But, if companies establish and disclose guiding rules that apply to their APM calculations and reporting, investors are then more comfortable with the results knowing that standards were followed to come up with the numbers (Eastman & Tabone, 2017).

Overall, a company should be able to report their balance sheet (assets, liabilities, and shareholder's equity), income statement (revenues and expenses), and cash flow statements (operating, investing, and financing activities) in a clear and concise manner so that the numbers are easily identifiable and make sense for the company. As stated above, the company needs to use footnotes and links to other informational resources for investors to obtain more information on the numbers they are looking at. These footnotes are also important as they will disclose the "significant accounting policies and practices, income taxes, pension plans and other retirement programs, and stock options" (Securities & Exchange Commission). If information affecting the financial position of the company and the ways of running the business are disclosed, investors are able to make sound decisions on how they feel the company is performing to their standards. Along with investor beliefs on the performance of the company come the beliefs of management of the company. In a section titled, “Management’s Discussion and Analysis (MD&A) of Financial Condition and Results of Operations,” management can take the opportunity to discuss how they feel the company is performing both financially and conditionally. This is also an opportunity for investors to explain a bit of why the numbers are showing what they are showing and how they could be impacted in the future. In fact, the U.S. Securities and Exchange Commission requires that the MD&A disclose “trends, events or uncertainties known to management that would have a material impact on reported financial information” (Securities & Exchange Commission). All of this information ties the financial statements and disclosures together, resulting in useful information for investors.

5. How can the environmental accounting system be integrated into the financial accounting systems?

Companies can collect the data on their environmental procedures and understand that their investors are interested in knowing what the company does to eliminate negative impacts on the environment, but how should all of that information be disclosed? Activities that are performed and the procedures the company faces should be disclosed through annual reports outlining the actions. When it comes to determining costs and liabilities in relation to the environment from the company, there is more thought that goes into the process of correctly recognizing those transactions and reporting them. Most environmental costs are expensed, such as the cost of electricity and utilities. These costs can be reduced, as discussed above, to limit the expenses faced by the company. Other costs, for example, the cost of cleaning up an area of soil that was contaminated with waste from the company, should be thoroughly investigated. If the toxic waste is removed, that removal is addressing a current issue the environment is bearing. That waste will not be harming the future environment because it already caused the damage, but if that is a place where dumping of waste frequently occurs, that removal will only remove the current waste, and therefore the action is an expense to the company. If this cleanup was done to prepare for selling the land, a future endeavor, this cleanup could be capitalized. Many situations are different, and it is necessary to examine each action taken to outline the objectives and results to decide if it is a cost that should be an expense and deducted on the tax return, or if the cost should be capitalized (Howell et al., 2019). According to the authors of *Principles of Taxation 2020* (2020), there are several outlines to follow to help a business decide if the expenditure is a deduction or if it should be capitalized when reporting on their tax return. They go as follows:

1. According to the Supreme Court, "'an income tax deduction is a matter of legislative grace' and 'the burden of clearly showing the right to the acclaimed deduction is on the taxpayer.'"
2. The internal revenue codes allow all "'ordinary and necessary expenses paid or incurred during the taxable year in carrying on any trade or business"' to be deducted.
3. … "Payments for 'permanent improvements or betterments made to increase the value of any property'" are not allowed to be deducted.
4. An expenditure is required to be capitalized "if the expenditure creates or enhances a distinct asset with a useful life substantially beyond the current year."
5. If there is not a distinct asset that the expenditure "create[s] or enhance[s]… the expenditure must be capitalized if it results in a significant long-term benefit to the firm."
6. As a general rule, "if the tax treatment of an expenditure is uncertain, capitalization is the norm while deductibility is the exception."

7. Although there have been many trials, “the federal courts have consistently ruled that expenses related to raising capital or reorganizing a firm’s capital structure benefit the firm for the duration of its existence and are not deductible.”
8. Every company that has “tangible operating assets” will have to have repairs and maintenance done at some point, so “repair and maintenance costs that are regular and recurring in nature and do not materially add to either the value or the useful life of an asset are deductible,” but “expenditures that substantially increase the value or useful life of an asset are nondeductible capital improvements.”
9. Any expenses that come with “adapting an existing asset to a new or different use must be capitalized to the cost of the asset.”
10. A preferential rule of the tax law states that “firms may deduct the first $15,000 of the annual cost of the removal of architectural and transportation barriers from buildings or transportation equipment to make such facilities more accessible to handicapped or elderly people.”
11. Another preferential rule allows for a “deduction for research and experimental expenditures… even if the research leads to the development of an identifiable asset with an extended useful life to the firm.”
12. There are industry specific preferential exceptions, one of which relates to farmers that says “farmers are allowed to deduct soil and water conservation expenditures,” and they can deduct “the cost of fertilizers or other materials used to enrich farmland… Oil and gas producers can deduct intangible drilling and development costs.”

13. Many companies advertise to promote their products or services, and those "costs are deductible, even though a firm's successful advertising campaign can increase its market share and improve its competitive position for years to come."

Therefore, costs can be recognized within the financial statements, depending on where, if they are expensed or capitalized. Other important information that should be known should be disclosed in reports and footnotes.

6. Along with environmental factors, what human factors should be reported on?

As discussed in the Sustainability Framework, factors outside of environmental effects need to be considered in a company and reported on in order to retain a business and operations with stakeholders. In order for companies to retain and attract stakeholders, they must entertain a workplace that is welcoming and supporting of all. Programs and policies centered around antiracism need to be in place and at the forefront of leadership. Additionally, these practices need to be an ongoing effort within the company. Companies need to also expand their network to attract people from different areas and backgrounds who can bring in their own unique talents. This allows the company to be more diverse. Along with having policies and practices and expanding the network, companies need to ensure they house a safe place for employees, customers, and stakeholders. No one should feel that they will be mistreated or hurt. It is essential to recognize individual needs, stick up for people when they are not being heard, and address and fix issues that come up. As a whole, everyone needs to be held accountable. Employees need to hold their managers and leadership accountable, and consumers need to hold brands and businesses accountable. Goals and targets need to be set and met relating to diversity and inclusion, and this is information that needs to be reported and available to stakeholders (Robert, 2020).

Sustainability Assurance

According to the Journal of Accountancy, the demand for sustainability assurance has been growing and continues to grow. In a survey conducted by The Conference Board at the end of 2019, 70% of the respondents predicted an increase in the need for sustainability assurance over the next five years. Some companies may just be beginning, others may be considering the idea, and some who are already receiving the assurance may increase the scope of information to be assured. Data collected in the survey showed that "the most common items that companies obtain assurance on are greenhouse gas emissions…; energy and water data; and health, safety, and diversity information" (Tysiac, 2019). Most companies from the survey received limited assurance while others received reasonable assurance, and some received a combination of both on different pieces of information. This assurance can be obtained from CPA firms in addition to environmental consulting firms. As with all forms of assurance, the reason and benefits from the assurance is the creation of trust and credibility between stakeholders and companies (Tysiac, 2019).

Personal Experience

During a recent busy season, I was an intern at a public accounting firm. As someone who is very environmentally conscious, I honestly looked for things that I felt contributed to the company's environmentally friendly initiatives. One of the most obvious things I noticed was the timed lighting. As I am someone who likes to begin working earlier than most people in the mornings, I would always walk in and the lights would be off except for one or two on in the hallways for security purposes. This is a clear energy savings technique. I could turn my light on in my office, but the hallways would remain with the lights off, and the lights would only be on in the hallway during the normal work hours. Secondly, another major energy savings was the use of laptops instead of desktop computers. As stated above, laptops consume less energy than the typical desktop computer. An additional bonus to the use of laptops is that they allow the staff to work remotely giving people the opportunity to save on gas costs and emissions into the air from traveling if they feel they should work from home for the day. Third, the bathrooms had automatic water in the sinks, reducing the amount of water waste because there wasn't the opportunity to forget to turn the water off or just let it run for an unreasonably long time. Fourth, another cost savings and environmentally friendly effort was the use of regular utensils, cups, and dishes that could go in the dishwasher and not need to be thrown away. There was plenty of silverware and plates, mugs, etc. for use, so there was no need for creating waste. However, if there was packaging from food that needed to be recycled from people who brought their lunch, there were recycling bins available in the kitchen. Frequently, people would recycle their pop cans, cans from soup, cardboard from a box with snacks, and of course, paper was thrown in those recycling boxes if it did not have confidential information written on it. Paper that contained confidential and client information was shredded, and those shreds were taken away by a company to be recycled.

Away from obvious, material things, the firm had strong goals with budgets. One of those specifically was the use of carpooling. They reimburse mileage for work related travel, but strongly encourage carpooling which is a huge effort in saving them money while being green. From driving only 15 minutes away to driving an hour away, I had opportunities to and was extremely encouraged to carpool.

In public accounting, there are different levels of members of the team ranging from interns to partners. Each level has a different pay rate, and depending on their pay rate, must be very conscious of the time spent on each engagement. For a partner to spend 3 hours at a charge rate of several hundreds of dollars per hour on work that an intern should be doing with a pay rate of less than one hundred dollars per hour is wrong. For engagements, budgets are lined out and should be followed, or for the completion of a tax return, there is a general time frame of how long the return should take to complete. This way, work can be allocated to the correct team member for the work to be most cost efficient for the client, and the firm is using their resources as wisely as possible to get tasks completed in an efficient but effective time. Overall, there are initiatives that companies can take to make sure they are doing their part to eliminate costs for both the firm and its customers, and to protect the environment.

When I return to the public accounting firm for a full-time position, I would really like to push for more sustainability efforts in the company as a whole, but especially the office I will work in. As a whole, on the firm's social media site where all staff can share information and hear the news of their coworkers, I would like to post regularly on ways staff can be more environmentally friendly in their homes and at the office. Not only will this promote environmental sustainability for the firm, but the hope is that practices would be done at home as well, and then promoted to families. In the office, I see opportunities for challenges between teams for generating the most recyclables, using the least amount of plastic water bottles, or bringing the most ecofriendly packed lunch. I also would like to work with the team that hosts events and generates funds for donations and have one of the events be donating money to efforts promoting sustainability in the community. Additionally, as appropriate, I will take on the role of analyzing client's expenses as reported on tax returns and see if I notice something that could be done to reduce their costs while promoting sustainability. I am hoping to continually educate myself on sustainability practices and apply what I learn into all aspects of my life to better myself and others, in turn, bettering the world in which we live.

Conclusion

Incorporating sustainability into accounting practices and tying the two large topics together can seem strange and confusing. In reality, these topics can go hand in hand. Reducing resource use, harmful emissions, and unnecessary information can ultimately reduce costs for a company while making it easier for decision makers to make well informed and educated decisions. Profitability and success can and should be connected with a concern for the environment.

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