

A VALUE MODEL FOR ESG

- *Proving that ESG Initiatives can be profitable*

By

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INTRODUCTION

As part of our research to explore if ESG initiatives are indeed profitable for business (research article coming soon), we set out to develop a framework which can be used to measure and track the business value of such initiatives. But let's define what the value framework consists of.

At a minimum, a value model consists of measuring the net present value of benefits vs. costs over a defined time period of evaluation. For ease of organization, we usually tackle the benefits and costs under broad buckets which we will call benefit levers and cost levers. Inside each of the levers are key metrics which are then quantified to derive an internal rate of return (IRR).

In this article, we will discuss how we developed a framework to measure the business value of an ESG initiative. We will show how we arrived at common benefit and cost levers used in the framework. We will present the equations used to calculate the key benefit and cost metrics along the assumptions we made. Finally, we will execute the model against a representative manufacturing company and explore the value proposition.

All of the models, work and equations are able to you through a free template available on [Valufy](#). See instructions on downloading Valufy and the ESG value model template in the appendix of this article.



FRAMEWORK DEVELOPMENT METHODOLOGY

To develop the value framework, we had to decide on the benefit and cost levers that we wanted to use in our framework. Obviously, we wanted these levers to be as generic as possible to be applicable in as many ESG initiatives as possible. We used a combination of design thinking based primary research as well as data based secondary research to arrive at a common set of benefit and cost levers.

What is ESG?

“ESG STANDS FOR ENVIRONMENTAL, SOCIAL, AND GOVERNANCE. FIRST COINED IN 2005, ESG COVERS A WIDE RANGE OF ISSUES THAT MAY HAVE A DIRECT OR INDIRECT IMPACT ON FINANCIAL RELEVANCE. SOME OF THESE ISSUES THAT COME UNDER THE PURVIEW OF ESG REPORTING INCLUDE RESOURCE MANAGEMENT, SUPPLY CHAIN MANAGEMENT, ORGANIZATIONAL HEALTH, SAFETY POLICIES, AND BUILDING TRUST THROUGH TRANSPARENCY.” – ESG.ORG

To develop the initial benefit and cost levers, we conducted design thinking exercises which are described below.

Benefit Levers Identification:

In the design thinking exercise, we used eight different dimensions to begin exploring in a guided fashion:

1. Benefits relating to the employees of the company
2. Benefits relating to operations and processes
3. Benefits relating to circular economy
4. Benefits relating to market and competition
5. Benefits relating to social, community, health and safety
6. Benefits relating to data and reporting
7. Benefits relating to risk and regulatory concerns
8. Benefits relating to innovation in recyclables and renewables.

Please see actual exercise output in the next section.

To validate that the arrived benefits were indeed representative of actual companies, we did a textual word analysis of ESG reports of a sample of corporations across the globe.

Cost Levers Identification:

Similarly the design thinking exercise to identify costs, we used the following five dimensions:

1. Costs relating to people
2. Costs relating to processes
3. Costs relating to technology
4. Costs relating to customer
5. Costs relating to regulatory concerns

VALUE MODEL DEVELOPMENT

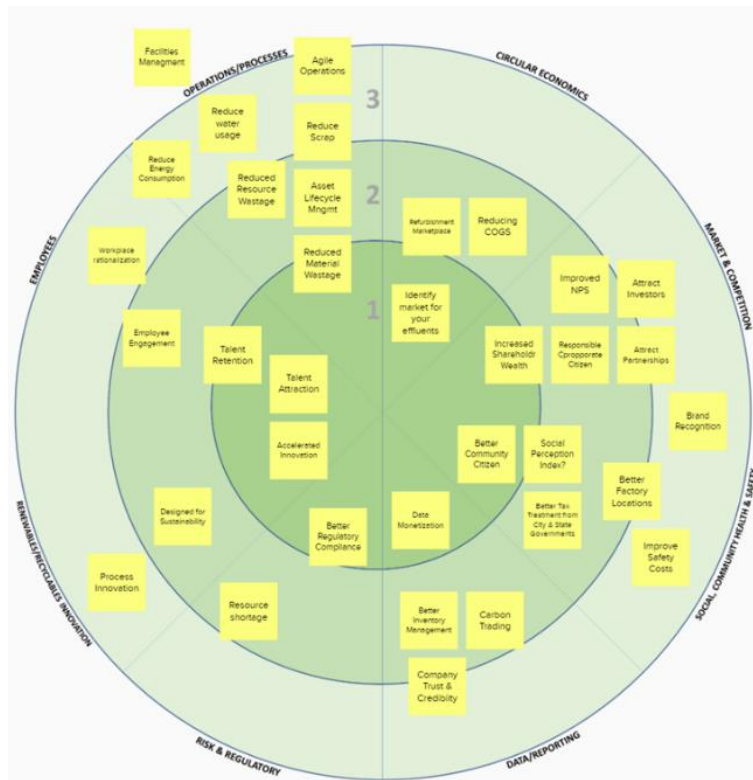
The model essentially consists of identifying benefit levers, associated benefit metrics, cost levers and associated cost metrics.

Benefit Levers

The figure below illustrates the actual ideas that were generated as part of the benefit lever identification exercise. Using an affinity clustering exercise, we clustered all of the ideas into the following six benefit levers:

1. **Employee Engagement:** Benefits related to improved employee engagement, hiring and retaining top talent, etc.

2. Recycling Economy: Benefits accruing from using and developing circular centers.
3. Facility and Resource Management: Benefits related to develop carbon neutral facilities and resources.
4. Safety and Operating Conditions: As a result of ESG initiatives, safety and operating conditions improvements will be a benefit.
5. Shareholder Value: Improvement in share price and bottom-line valuation of the company from ESG initiatives.
6. Innovation: Innovative activities related to zero waste operations, carbon tracking, etc. that will result in additional business value.



To ensure that these benefit buckets are indeed representative of actual company priorities, we conducted a textual analysis of about 25 different companies with established ESG track records. The figure below shows a high correlation between the textual analysis (shown as a word cloud) vs. the levers discovered in the design thinking exercise.

		refurbishments, cheaper materials
Shareholder Value	Customer Loyalty	lifetime value of customer * expected increase in lifetime value * # of customers
	New Customers	lifetime value of customer * # of customers * expected increase in new customers
Innovation	Accelerated Innovation resulting in leading edge ideas	time to market * # of ideas * revenue/idea * % acceleration * margin
	Innovative products	# of ideas * new revenue/idea * % net new ideas due to sustainability initiatives * margin
Facilities	Reduced cost because of reduced carbon footprint due to less usage	facility cost/year * % reduced maintenance due to improved materials
	Downgrade facilities and encourage hybrid work models	Facility usage cost/person/year * reduction in office usage

Cost Levers

As mentioned earlier, we used five cost dimensions to reflect all potential costs typical in an ESG initiative.

Cost Lever	Representative Cost Metrics
Technology	Information Technology Development & Maintenance
	Operational Technology Development & Maintenance
	Upstream and downstream partnership integration
Process	Development of new Governance Models
	Re-engineering current processes
	Development of new processes
People	Adoption and Change Management for Employees and Partners
	Training
	Talent Management
Customer	Attrition of some customers

	Acquisition of new customers
	Adoption and Change Management for Customers
Regulatory	Reporting Dashboards
	Additional Auditing Costs
Other	Organizational Culture Development
	ESG Marketing & Brand Management
	Company specific costs
	Industry specific costs



Illustrative Value Model

For the purposes of describing the value model, we developed a hypothetical case for a large manufacturing company with the following characteristics:

Number of Employees:	70000
Annual Revenue (in US Dollars):	\$75B
Evaluation Period:	5 years
Corporate Tax Rate:	15%
Net Profit:	22%
Discount Rate:	3.5%
Adoption Rate of Solution (% per year)	5/15/30/60/100

As described above, each of the benefit levers were calculated with the following assumptions:

Assumption	Source
Annual Average Fully Burdened Salary of Employee (per year): US\$ 60000	Manufacturing Data USA: Average Manufacturing Salary in US: \$65449
Average % additional revenue due to innovative ideas (%age): 5	Tough Venturing: ~27% additional revenue from new product innovation
Average annual facility cost per employee (per employee): 1000	MIT: \$2000/year
Average cost of employee fire (Annual): \$5000	LinkedIn: Hiring + Firing Cost ~30-50% of annual salary
Average cost of employee hire (Annual): \$10000	LinkedIn: Hiring + Firing Cost ~30-50% of annual salary
Average percentage reduction in facility usage (%age): 20	McKinsey: ~35% of workforce are able to work from home post COVID
Average rate of employee turnover in the company (%age): 12	APQC Employee turnover rate: Top=8.08; Median=14.78; Bottom=17.91. SHRM Report: 12%
Cost of goods sold as a percentage of revenue (%age): 70	APQC Direct materials and services value as a percentage of cost of goods sold: Top=17.4; Median=30.5; Bottom=48.5
Energy Cost as a percent of revenue (%age): 10	CDP Energy usage (MWh / \$M in revenue): Top=95.58; Median=171.34; Bottom=367.36
Expected percent acceleration in innovation (%age): 10	Representative Model of a Large Manufacturing Company
Expected percent decrease in COGS (%age): 0.02	Forbes: up to 45%
Expected Percent Decrease in Energy Consumption (%age): 10	Constellation: Up to 30%
Expected percent improvement in operations efficiencies (%age): 5	Forbes: up to 23%
Expected percent increase in annual revenue due to improved market perception (%age): 1	APQC Percentage of revenue from completely new products/services launched in the past year: Top=16.3; Median=13; Bottom=9
Expected percent reduction in material waste (%age): 10	APQC Scrap and rework costs as a percentage of cost of goods sold: Top=3; Median=5; Bottom=8
Expected percent savings in facility operations (%age): 30	Authors' assumption for a representative Model of a Large Manufacturing Company
Expected percentage increase in overall employee productivity (%): 1	Authors' assumption for a representative Model of a Large Manufacturing Company
Expected reduction in employee turnover (%age): 20	Authors' assumption for a representative Model of a Large Manufacturing Company

Facility Maintenance Cost as a Percent of Revenue (%age): 0.5	APICS Total cost of repair and maintenance as a percentage of gross value of fixed assets: Top=0.74; Median=1.32; Bottom=3.5
Operating costs as a percentage of annual revenue (%age): 70	Authors' assumption for a representative Model of a Large Manufacturing Company
Percentage of COGS attributable to materials (%age): 40	Financestrategists.com: 50 to 70% of total product cost.

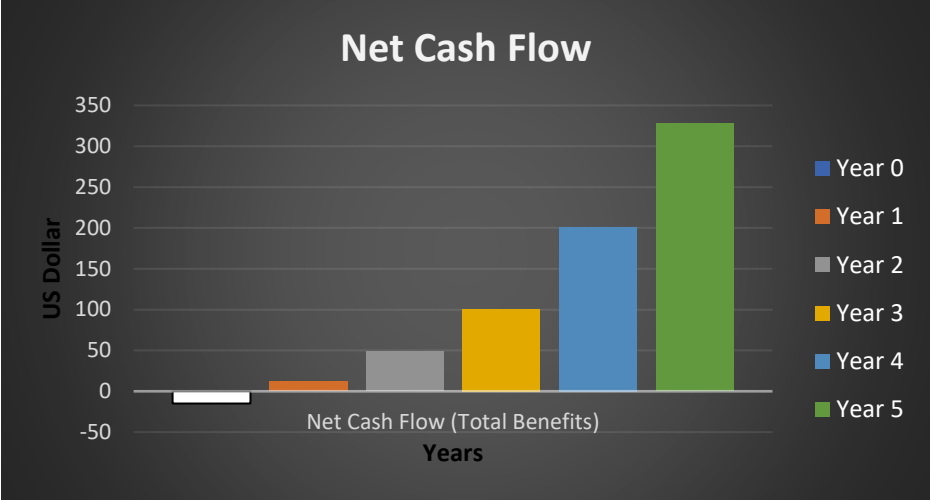
Since costs are so subjective and specific to individual customer situations, we assumed that the organization will likely spend .01% of their revenue in ESG initiatives annually and about 0.02% of initial outlay to setup the ESG initiatives. This is a conservative estimate based on a survey of average spending outlined in published corporate ESG reports.

Based on the above benefit and cost levers, we worked out a tentative benefit and NPV schedule as follows:

Benefit	Initial	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Employee Engagement		45M	44M	42M	41M	39M	211M
Enhanced Safety & Operating Conditions		219M	211M	204M	197M	190M	1B
Recycling Economy		57M	55M	53M	51M	49M	265M
Optimized facilities and resources management		43M	42M	40M	39M	37M	201M
Increased Shareholder Value		14M	13M	13M	12M	12M	64M
Accelerated Innovation		8M	8M	7M	7M	7M	37M
Benefit Realization Rate		5.00%	15.00%	30.00%	60.00%	100.00%	
Realized Benefits		19M	56M	108M	208M	334M	725M
Costs	15M	7M	7M	7M	7M	6M	49M
Net Cash Flow	-15M	12M	49M	101M	201M	328M	

Based on the above, the IRR works out to about 227% when calculated for a discount rate of 3.5%.

The net cash flow looks as shown in the figure below.



The full details of this value model are available by downloading the template from the [Valufy](http://Valufy.com) website. Please see section at the end of this article.



CONCLUSION

We ran the value model for three different industry verticals: manufacturing, retail and oil & gas. For each of the verticals, we created value models for three company profiles: large, medium and small. The table below summarizes our results.

Manufacturing	Energy	Retail
Large: \$75B Employees: 70K	Large: \$386B Employees: 75K	Large: \$500B Employees: 500K
IRR: 220-240% Payback ~1.5Y	IRR: 220-260% Payback ~1.5Y	IRR: 190-230% Payback ~1.5Y
Medium: \$35B Employees: 20K	Medium: \$175B Employees: 20K	Medium: \$100B Employees: 150K
IRR: 135-165% Payback ~1.5Y	IRR: 185-225% Payback ~2Y	IRR: 170-200% Payback ~1.5Y
Small: \$10B Employees: 10K	Small: \$75B Employees: 10K	Small: \$20B Employees: 75K
IRR: 140-160% Payback ~1.5Y	IRR: 110-140% Payback ~2.5Y	IRR: 200-225% Payback ~1.5Y

Key Takeaways

- There is usually a positive IRR for ESG initiatives.
- IRR ranges from 140-250% over five years
- Payback is usually between 1.5 and 2.5 years.

DOWNLOAD & REUSE VALUE MODEL TEMPLATE

Here are the steps to use this customizable ESG value model template for your own organizational needs:

1. Go to <https://valufy.com> and click on “Get Valufy from Windows Store” from the top menu. It is free for individual usage.
2. After you download and register to use the tool, click on “Download Templates”.
3. In the ensuing drop down dialog, select “Valuso ESG Template”.
4. You can use it as is or customize it to your needs by adding your new metrics, benefit and cost levers.

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