The Metrics Navigator™
GEMI

About the Global Environmental Management Initiative

The Global Environmental Management Initiative (GEMI) is a non-profit organization of leading companies dedicated to fostering environmental, health and safety excellence and corporate citizenship worldwide. Through the collaborative efforts of its members, GEMI also promotes a worldwide business ethic for environmental, health and safety management and sustainable development through example and leadership.

The guidance included in this document is based on the professional judgment of the individual collaborators listed in the acknowledgements. The ideas in this document are those of the individual collaborators and not necessarily their organizations. Neither GEMI nor its consultants are responsible for any form of damage that may result from the application of the guidance contained in this document.

This document has been produced by the Global Environmental Management Initiative (GEMI) and is solely the property of the organization. This document may not be reproduced nor translated without the express written permission of GEMI, except for use by member companies or for strictly educational purposes.

GEMI Member Companies:

3M
Abbott
Anheuser-Busch, Inc.
Ashland Inc.
Bristol-Myers Squibb Company
BNSF Railway Company
Cadbury Schweppes PLC
Carnival Corporation & PLC
The Coca-Cola Company
ConAgra Foods
Dell Inc.
The Dow Chemical Company
Duke Energy
DuPont
Eastman Kodak Company
Eli Lilly and Company
FedEx
GlaxoSmithKline
HP
Intel Corporation
Johnson & Johnson
Johnson Controls, Inc.
JohnsonDiversey, Inc.
Koch Industries, Inc.
Kraft Foods Inc.
Merck & Company, Inc.
Mirant Corporation
Motorola, Inc.
Novartis Corporation
Occidental Petroleum Corporation
Owens Corning
Pfizer Inc
The Procter & Gamble Company
Roche
Schering-Plough Corporation
The Scotts Company
Smithfield Foods, Inc.
Southern Company
Temple-Inland Inc.
Tyson Foods, Inc.
Wyeth

Table of Contents

Table of Contents

Acknowledgements **2**

Preface **3**

Executive Summary **4**

Introduction **6**

Strategic Metrics Development Process: Overview **8**

Steps 1 - 3: What is Material ..... **11 - 32**

Step 4: What and How to Measure ..... **33 - 46**

Steps 5 - 6: How to Assure Effectiveness ..... **47 - 55**

Glossary **56**

References ..... (inside back cover)

Online Appendix: Additional Online Resources ..... **www.gemi.org/metricsnavigator**

Blank Worksheets

External Advisory Group Perspectives in Full

Resources

Case Examples

Pg 14 **FedEx:** Response to Hurricane Katrina

Pg 16 **3M:** The Role of Sustainability at 3M

Pg 17 **Eastman Kodak Company:** Supporting Business Transition through Responsible Growth

Pg 23 **Bristol-Myers Squibb Company:** External Reporting and Internal Management of Metrics

Pg 23 **The Scotts Company:** Identifying Issues from Consumer Calls

Pg 28 **Abbott:** Managing Emerging Business

Pg 29 **DuPont:** Managing Energy

Pg 30 **The Dow Chemical Company:** Developing Dow's 2015 Sustainability Goals

Pg 38 **The Procter & Gamble Company:** Exploring New Value-Creation Metrics

Pg 38 **Intel Corporation:** Assessing Performance of Education Programs

Pg 39 **DuPont:** Metrics to Drive Sustainable Growth

Pg 41 **3M:** Scorecard to Drive Performance

Pg 44 **DuPont:** Setting 'Achievably Stretched' Targets

Pg 45 **Southern Company:** 'Target Zero' to Change Employees' Mindsets

Pg 48 **Johnson Controls, Inc.:** Managing Energy and Greenhouse Gas Data

Pg 49 **3M:** Moving Toward Sustainability through Six Sigma

Pg 50 **Johnson & Johnson:** Communicating Progress toward Goals

Pg 53 **Occidental Petroleum Corporation:** Periodic Review of Metrics and the Management System

Pg 54 **Pfizer Inc:** Evaluating Company-Wide Goals

Acknowledgements

Acknowledgements

The *GEMI Metrics Navigator*™ was developed through a collaborative process by the GEMI Metrics Work Group and BRIDGES to Sustainability, a Division of Golder Associates Inc. (Golder). Jim Kearney, Bristol-Myers Squibb Company and Leslie Montgomery, Southern Company, co-chaired the project. The Golder team operated under the direction of Beth Beloff, the project management of Marianne Lines and included significant contributions from Dicksen Tanzil, Karen Clark-Whistler, Kimberley Murphy, Abigail Martin and Daniel Mills. GEMI staff contributing to this document included Steve Hellem and Amy Goldman.

Contributing GEMI Metrics Work Group members included:

Brenda Abke, The Scotts Company
Robert Accarino, Abbott
Audrey Bamberger, Anheuser-Busch, Inc.
Gregg Belardo, Wyeth
Maurice Bechard, JohnsonDiversey, Inc.
Paul Bowen, The Coca-Cola Company
Jaime Brown, Eli Lilly and Company
Russell Cerchiaro, Schering-Plough Corporation
Mark Chatelain, Johnson Controls, Inc.
Soma Chengalur, Eastman Kodak Company
Stan Christian, Motorola, Inc.
David Constable, GlaxoSmithKline
Helen Corbitt, Eli Lilly and Company
Francisco Cordero, The Coca-Cola Company
Raquel Cordovi, Carnival Corporation & PLC
Ron DiCola, Pfizer Inc
Robert Drinane Merck & Company, Inc.
Karl Fennessey, The Dow Chemical Company
Doug Finan, GlaxoSmithKline
Don Gebhardt, Ashland Inc.
Elizabeth Girardi Schoen, Pfizer Inc
Angela Grooms, Duke Energy
Debbie Hammond, Abbott
Mark Hause, DuPont
Greg Hill, Novartis Corporation
James Hunn, Carnival Corporation & PLC
Mitch Jackson, FedEx
Bryan Jacob, The Coca-Cola Company
Himanshu Jani, Owens Corning
Leigh Ann Johnston, Tyson Foods, Inc.
Jim Kearney, Bristol-Myers Squibb Company
Kelley Kline, Smithfield Foods, Inc.
Douniel Lamghari, Schering-Plough Corporation
Bill Lechner, The Scotts Company
Nancy Liaboe, Abbott
Keith Miller, 3M
Dean Miracle, Southern Company
Ed Mongan, DuPont
Leslie Montgomery, Southern Company
Karen Murphy, Ashland Inc.
George Ossman, Schering-Plough Corporation
Vivian Pai, Johnson & Johnson
Ted Reichelt, Intel Corporation
Dawn Rittenhouse, DuPont
David Seep, BNSF Railway Company
Jan Sieving, Occidental Petroleum Corporation
Lindell Sneed, Abbott
Lyle Staley, BNSF Railway Company
Alan Stinchfield, Georgia-Pacific Corporation
Jim Thomas, Novartis Corporation
Robin Tollett, The Procter & Gamble Company
George Williams, Carnival Corporation & PLC
Carl Wirdak, Occidental Petroleum Corporation

Special thanks

During the course of the project, members of the GEMI External Advisory Group (EAG) shared their insights into aspects of the metrics process in a series of workshops developed for the GEMI Metrics Work Group.

The following people participated in EAGs and reviewed and commented on the contents of the *Metrics Navigator*™:

David Aeron-Thomas, Forum for the Future
Karen Coyne, CoVeris
Jean "Pogo" Davis, ConocoPhillips (Retired); Duke University and Rice University
Peter DeSimone, Investor Responsibility Research Center, (IRRC)
Patrice Flynn, Flynn Research; Johns Hopkins University
Carl-Johann Francke, SAM Research
Alan Hecht, U.S. EPA
Thomas Krick, AccountAbility
John Laidlow, HSBC
Rob Lake, Henderson Global Fund
Jonathan Low, Predictiv LLC
Mark Milstein, Cornell University, The Johnson School and Center for Sustainable Global Enterprise
Eve Mitleton-Kelly, London School of Economics; Society for Organizational Learning
Tom Murray, Environmental Defense
Mary Altomare Nattrass, Sustainability Partners
Brian Nattrass, Sustainability Partners
Eric Olson, Business for Social Responsibility (BSR)
Amanda Penn, Ethical Investment Research Services (EIRIS), London
James L. Ritchie-Dunham, Institute for Strategic Clarity; Harvard University
Kirvil Skinnarland, Sustainable Seattle; Trilogy LLC
Paul Tebo, DuPont (Retired); The Tebo Group
Jack Whelan, International Business Leaders Forum.
In addition, Jean "Pogo" Davis and Jonathan Low provided input and guidance during the early, formative stages of this project.

For more information about this project, please contact GEMI, at: 202-296-7449 or info@gemi.org.

GEMI gratefully acknowledges Carnival Corporation and PLC's contribution to the design of the cover page.

GEMI

Preface

Preface

In business, numbers drive performance. Companies use a wide variety of metrics to gauge how well they are meeting the needs of their customers, investors, and other stakeholders. Society is becoming more aware of the social and environmental impacts of business activities, and, thus, more interested in the relationship between the performance of a business in these areas and its market value and financial performance. This has generated a deluge of stakeholder information requests of companies. While much has been done to define 'sustainability' and sustainability-related metrics for business, there has been less focus on aligning metrics with business strategy. Doing so can add significant and long-term value to the business.

Progressive companies recognize that their performance is judged on many levels, not just their financial success. Using appropriate metrics to describe programs or back up statements of progress can enhance business' credibility. This tool was designed to look at indicators of performance and put the numbers into a context that goes beyond traditional financial metrics. It provides a roadmap for companies to identify key metrics for those actions that drive long-term sustainability and a rational, thoughtful basis for decision-making.

This tool uses a planning process that can help uncover relevant and material indicators and prioritize among those that are the most effective at driving and communicating performance, both internally and externally. Through its application, companies can demonstrate their basis for selecting metrics and enhance their value for management decisions. For example, are employee retention, greenhouse gas management, community involvement, or water resources important to your business strategy? Why or why not? How are they measured? These are the kinds of questions that the tool can help your organization explore.

The GEMI *Metrics Navigator*™ is the product of a two-year, collaborative journey by GEMI members, withthe support of the BRIDGES to Sustainability team of Golder Associates, and a number of other experts in the fields of sustainability, metrics, and organizational change management. Over the course of three workshops in the US and UK, participants from 25 external organizations and several GEMI companies discussed strategic performance measurement and evaluation; the challenges of sustainability and related metrics that drive business value, innovation and growth; and intangible financial drivers. We are deeply grateful to all who participated in this process for their invaluable contributions.

This tool does not recommend any particular path for a company to take, nor does it advocate a common set of indicators for industry. Organizations may wish to use the tool's six-step process in full, or may simply use it as a reference to fine tune existing efforts. In either case, its use should bring to light opportunities to better set goals and communicate performance around company values and strategy.

We hope this approach and the case for non-financial metrics helps your company to better navigate the landscape of corporate citizenship. Let us know if it does at **info@gemi.org**.

Jim Kearney
Bristol-Myers Squibb Company

Leslie Montgomery
Southern Company

Co-chairs, GEMI Metrics Work Group

March 2007

Executive Summary

Executive Summary

Traditionally, business objectives have been defined and measured in financial terms. Yet, to realize the value of addressing environmental, social and broader economic issues, non-financial metrics can also drive success in the organization by indicating how well it executes on its values and beliefs. These metrics are needed to complement traditional financial measurement systems and help organizations manage long-term business opportunities and future uncertainty and risks.

The challenge is to use the right mix of metrics that provides value to the organization – by providing meaningful information, informing strategy and supporting decision-making.

The Global Environmental Management Initiative's (GEMI) *Metrics Navigator*™ is a tool to help organizations develop and implement metrics that provide insight into complex issues, support business strategy and contribute to business success. The tool presents a thorough, six-step process to select, implement and evaluate a set of 'critical few' metrics that focus on an organization's success. Each step provides guidance in the form of a worksheet, series of questions or checklist.

Any organization can use the tool and apply it at any organizational level. The process is very flexible and does not dictate how to complete the worksheets. In fact, the tool does not require that worksheets be used at all, if an organization already uses proven internal processes for particular steps. The strength of the tool is that it offers a rigorous thought process. The greatest value is in how it helps individuals, groups or entire organizations think through the process - the logical flow of the six steps - and not in the methods included. The summary worksheet (on page 5) provides an overview of the process and captures the critical conclusions from the six steps.

In a very practical way, the GEMI *Metrics Navigator*™ helps the user to:

- determine what is material – ask the right questions, prioritize issues, identify objectives and understand potential consequences at several decision points
- decide what and how to measure – understand the interactions between economic, social and environmental issues and sort through an array of possible metrics
- implement a metrics program

Once the metrics have been chosen, this tool helps the user analyze how effectively the non-financial metrics:

- inform business decisions and leadership
- align environmental, social and economic issues with business strategy
- respond to issues identified by employees and external stakeholders
- help integrate holistic thinking into the organization's culture
- reflect business values and yield business benefits

The principal benefit of using this tool is to advance business performance through the development and use of non-financial measurements.

WORKSHEET: SUMMARY OF KEY POINTS	
What is material	Key business objectives (from Step 1)
	Environmental, social and economic elements support business objectives (current and future) (from Step 1)
	Key employees and external stakeholders in this effort (from Step 2)
	Critical few material issues (from Step 2)
	Key objectives which relate to the material issues (from Step 3)
What and how to measure	Expected uses of the metrics and by whom (from Step 4)
	KPIs and related metrics, what they are and how well they meet the criteria (from Step 4)
How to assure effectiveness	Degree of integration of metrics into management systems (from Step 5)
	Effectiveness of metrics communication to users (from Step 5)
	Expected organizational behavior (from Step 6)
	Expected change in personal behavior (from Step 6)
	Use of metrics to support the business case and refine business strategy (from Step 6)
	Expected business value (from Step 6)

Economic, environmental and social concerns interact in fundamental ways, many of which are not well understood… Businesses exist within societies, and societal values expressed formally (through laws and regulations) and informally (through values and culture) affect all aspects of a company's operations.

— Kirvil Skinnarland

Introduction

Performance measurement is critical in managing complex issues that are core to the business. ***Metrics*** are essential not only for managing the organization, but also for informing business strategies. Without relevant metrics, it is difficult - if not impossible - to understand how and if complex issues advance business success (***see the Glossary on page 56 for the definitions of italicized words, in bold***).

Sustainable development* is a complex issue that emerged as a business concept in the 1990s. Since then it has gained credence as an important driver of business strategy. Yet, to realize the value of addressing environmental, social and broader economic issues, non-financial metrics are needed to complement traditional, financial measurement systems and help organizations manage long-term business opportunities and future uncertainty and risks.

The challenge is to use the right mix of metrics that provides value to the organization – by providing meaningful information, informing strategy and supporting decision-making.

GEMI's *Metrics Navigator*™ is a tool to help organizations develop and implement metrics that provide insight into complex issues, support business strategy and contribute to business success. The tool presents a thorough, six-step process to select, implement and evaluate a set of 'critical few' metrics that address:

- What performance best reflects that which is material to the organization and important to stakeholders?
- How can performance for these issues be measured?
- Which metrics are most effective in decision-making?
- Who will use them?
- How can performance evaluation improve the organization's strategic direction?

Sustainability as a Business Issue

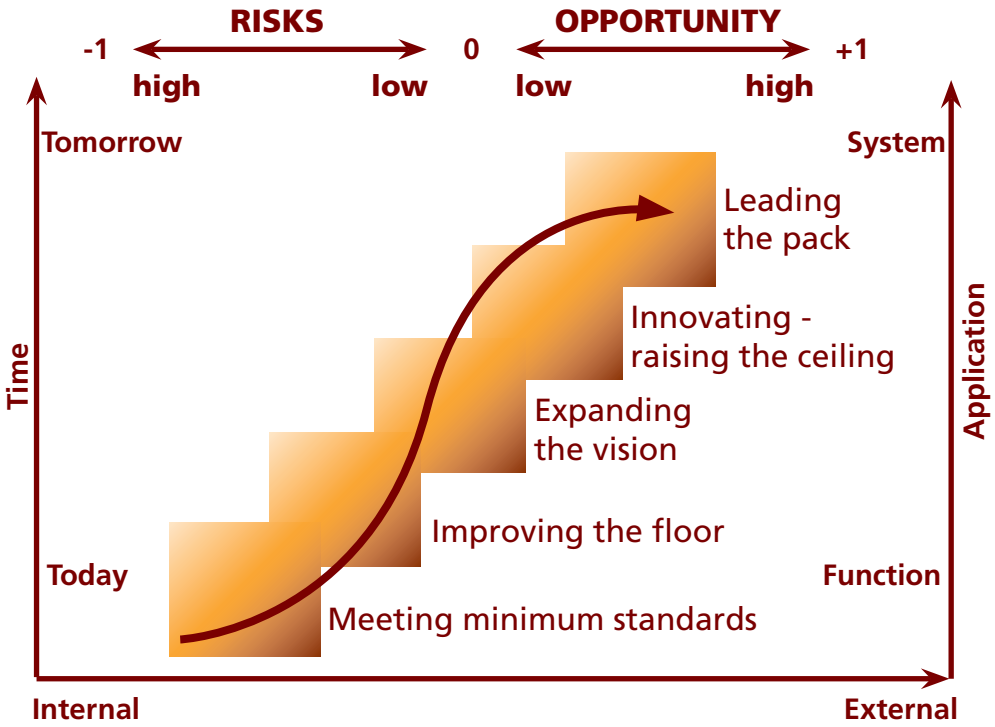
Early corporate applications of sustainability approaches were typically marketing-focused and applied to single issues – such as 'green' products. However, for several years, there has been growing recognition that a holistic approach to managing risks and opportunities creates business value.

Figure 1 (on page 7) illustrates the evolution of integrating sustainability thinking into an organization. First steps typically include initiatives to manage environment, health and safety (EHS) risk by moving beyond compliance through developing internal policies or adhering to voluntary standards.

As organizations have evolved from focusing on EHS strategies to sustainability strategies, goals and objectives have become more complex. At the same time, given the broad spectrum of issues that fall under the sustainability umbrella, potential stakeholders have multiplied and grown more diverse. In this setting, the need for a clear, results-oriented strategy has gained increasing importance for organizations. And, because organizations cannot afford to address every aspect to the same degree and on the same schedule, choices must be made and a strategic direction set.

* For purposes of this tool, GEMI considers the terms and varied definitions 'sustainability', 'triple-bottom-line', 'corporate social responsibility', 'corporate citizenship', 'corporate responsibility' and 'sustainable development' to be interchangeable, and to involve the elements of environmental stewardship, economic development and social progress.

Figure 1. Evolution of Integrating Sustainability Thinking into an Organization



© BRIDGES to Sustainability, Golder Associates Inc. Adapted fromTransforming Sustainability Strategy into Action, Beloff et al, 2005

A New Generation of Metrics

Organizations use metrics to judge progress in implementing strategies and to improve operations. Traditionally, business objectives have been defined and measured in financial terms.

Organizations have relied on ***lagging metrics*** which reflect past outcomes of organizational performance. While lagging metrics help organizations manage impacts, the effective management of non-financial issues requires the use of both leading and lagging indicators of performance.

As the value of addressing environmental and social issues increases, it is important for metrics to gauge an organization's success more holistically. A new generation of metrics is needed to complement traditional measurement systems and help managers deal with long-term business opportunities and future uncertainty and risk.

Leading metrics are valuable because they tend to reflect causation and can be used to predict performance. However, because leading metrics often reflect intangible assets of business, they can be difficult to identify.

The challenge is to find the right mix of leading and lagging metrics, for issues that are critically important, i.e., material. These metrics must accurately depict progress towards goals and be effective in communicating information to different audiences. Further, the metrics should provide value to the organization without creating significant operational burdens. [(1)]

Several tools developed by GEMI highlight the importance of metrics **(see list of Resources in Online Appendix)**. GEMI's *Clear Advantage: Building Shareholder Value* helps to provide businesses approaches on how to measure, manage and communicate EHS value to the financial community. GEMI's *Transparency: A Path to Public Trust* underscores performance reporting to establish integrity, build credibility, earn respect and develop trust with stakeholders. Metrics help 'close the loop' in the sustainability plan one develops using the GEMI's *Exploring Pathways to a Sustainable Enterprise: SD Planner*™. Considerations for the development of metrics have been previously discussed in a 1997 GEMI publication, *Measuring Environmental Performance*.

The GEMI *Metrics Navigator*™ builds on these and other tools, but focuses exclusively on a process companies can use to develop relevant sustainability metrics.

Strategic Metrics Development Process: Overview

What is the GEMI *Metrics Navigator*™?

The tool is in the form of a workbook that guides the user through a series of worksheets to arrive at metrics that support business strategy, enhance decision-making and contribute to managing business success in the following areas:

- *Inform strategy* – by measuring the ability of the organization to meet its goals and ***targets***.
- *Drive improved performance* – by:
  - establishing base-line performance
  - tracking performance over time, including management system performance
  - providing insights into hidden aspects of performance
  - supporting decision-making
  - identifying performance improvement opportunities
- *Measure what is right* – Organizations face stakeholder pressure to account publicly their performance relative to a growing list of sustainability-related principles, standards and indicators. Often it is difficult to meet varying expectations and determine which frameworks to use and what to measure. By developing metrics that are aligned with business strategy this tool ensures that an organization measures what is right for itself and measures things the right way.
- *Provide meaningful information* – Organizations can be overwhelmed by data and information. This tool helps the user decide which information really matters, how to cost-effectively convert it into metrics and how to communicate data and results to the right people.
- *Communicate effectively* – Metrics mean little without the context of how they will be used to improve performance and organizational alignment. This tool highlights how metrics are defined and influenced by the uses and users of metrics. Further, the tool helps the user choose the type and number of metrics given the audience.

What is Unique about the Tool?

While there are many published resources on metrics, this tool incorporates diverse perspectives into a comprehensive framework that links non-financial program metrics to an organization's business strategy in a practical way that helps the user to:

- ask the right questions, prioritize issues, identify objectives and understand potential consequences at several decision points
- better understand the interactions between economic, social and environmental issues
- align environmental and social issues with business strategy
- advance business performance using non-financial measurements

The tool does not recommend specific metrics, but its application will lead an organization through the process of developing company-specific metrics.

Methodology - How the Tool was Developed

This tool was developed through consultation between the GEMI Metrics Work Group and the Golder team, and with input from External Advisory Groups (EAGs) comprised of key thought leaders with expertise ranging from corporate strategy to stakeholder engagement processes to performance measurement. These experts participated in at least one of three workshops which addressed selected issues embedded in the tool. Contributions from several EAG experts are included in the tool as 'EAG Perspectives'. The detailed perspectives in the online appendix can enhance understanding of certain key points or be used to make the business case for taking similar steps.

Case examples, written by GEMI members, illustrate opportunities and challenges in developing and using metrics. While there are many environmental cases, there is widespread recognition of the need for more work in developing social and economic metrics. Often social issues are more readily managed and accounted for at the local level, making it difficult to aggregate or 'roll-up' performance into a single metric. Therein lies a key challenge that this tool attempts to address.

Who Should Use it?

The tool is intended for use by managers and environmental, health and safety, and sustainable development practitioners. The tool can be applied to any type of business and applied at any organizational level. The process is flexible and adaptable so that individuals or teams can tailor it to meet their specific needs.

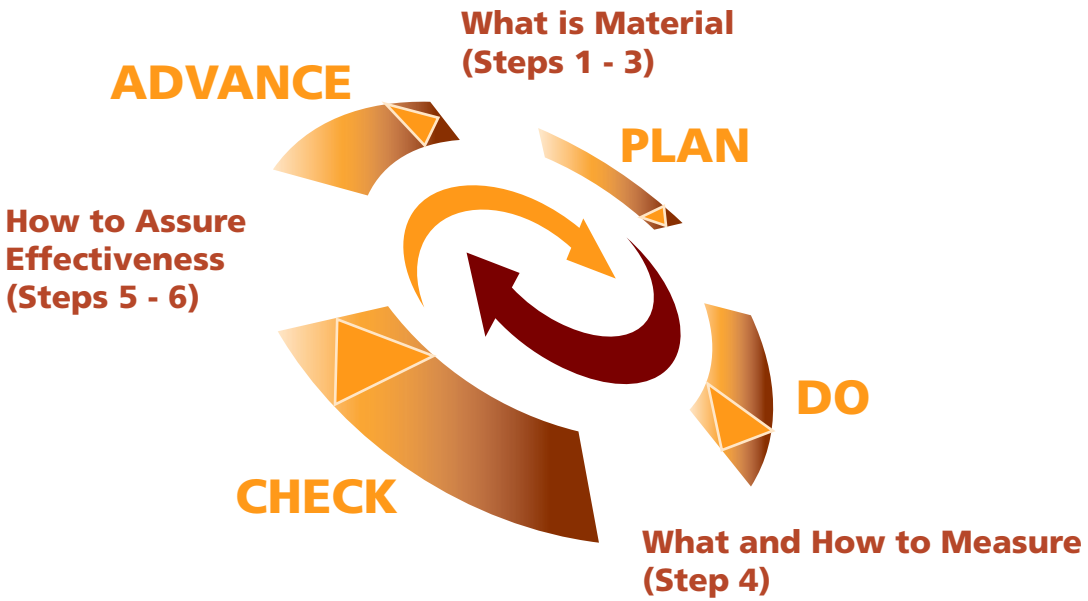
How to Use the Tool

The process described in the tool is sequential and represents the recommended approach to metrics development, but users may enter at any step and move between steps as necessary. Each step of the GEMI *Metrics Navigator*™ provides guidance in the form of a worksheet, series of questions or checklist of evaluation criteria. To illustrate the continuous nature of the metrics development process, the six steps are shown, in Figure 2, in a Plan, Do, Check, Advance cycle.

A hypothetical organization called 'XYZ Nutritional Beverage' is used as an example throughout most of the six-step process. GEMI member companies populated some tables and worksheets based on their own experiences, providing more illustrative examples than could be achieved through any hypothetical model. The tool also includes references and resources that further support the metrics development process.

Due to space limitations in the published version, the electronic PDF version of the tool, which can be found on GEMI's website, **www.gemi.org/metricsnavigator**, includes elaborations on EAG Perspectives, additional resources and blank worksheets in usable format.

Figure 2. Strategic Metrics Development Process



The Six Steps

This section of the tool outlines the six-step metrics development process. To increase the effectiveness and value of the metrics, information is collected and decisions are made to respond to three guiding statements:

- What is material
- What and how to measure
- How to assure effectiveness

Steps 1–3: What is Material?

Steps 1-3 of the process help identify what is material to an organization. ***Materiality*** is defined as the relevance and substantiality of an issue to the organization. This early focus on materiality ensures that the organization is measuring that which is right for them.

A number of organizations have developed criteria for defining materiality for various purposes, including financial reporting [2], sustainability reporting [3], stakeholder engagement [4] and auditing [5]. This process uses the following criteria for assessing an issue's materiality:

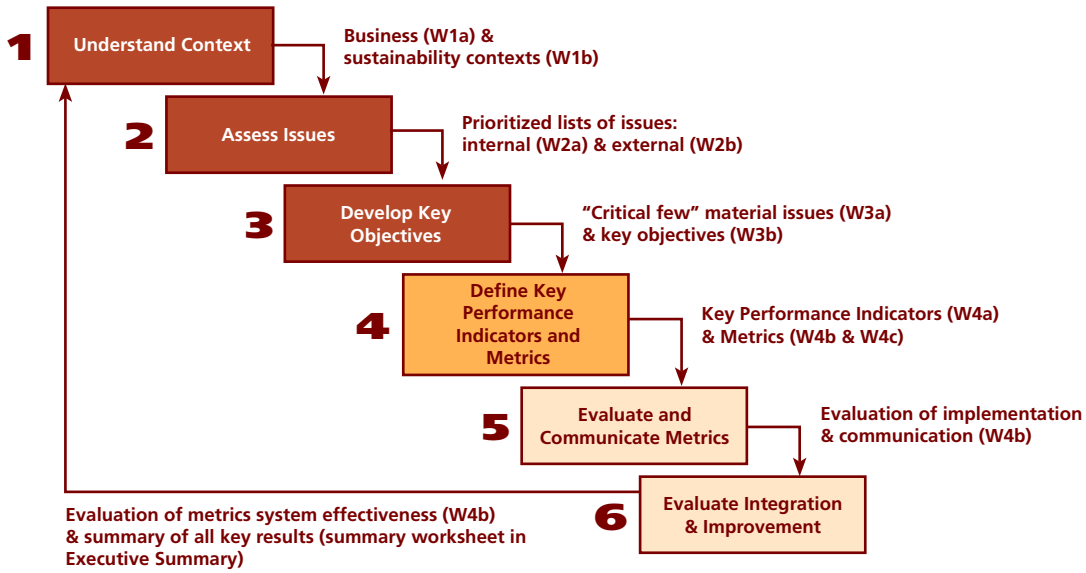
- relevance to the business strategy
- significance of the organization's environmental, social and/or economic impacts
- level of concern to external stakeholders
- ability of the organization to control or influence

Step 4: What and How to Measure

Step 4 defines ***Key Performance Indicators*** (KPIs), i.e., as a general statement of what to measure and develops metrics, i.e., as the specific measurement accompanied by clear descriptions of how it is measured. This step helps sort through the array of possible metrics to select the strategic metrics that focus on business success. This step briefly looks at tactical metrics at the operational level.

Step 4 includes a reality-check to ensure the chosen metrics are effectively fulfilling their intended purpose. Part of this step is to ensure the validity of the metrics in terms of reliability, relevance to the business, accuracy and other criteria.

Figure 3. Strategic Metrics Development Process and Associated Worksheets



Steps 5–6: How to Assure Effectiveness

Step 5 focuses on distilling data into useful and manageable information that is meaningful to the intended users. This implementation step encourages the user to work with existing management and information systems. This section also cautions on the use of metrics that can be misleading or misunderstood.

Step 6 is a critical assessment of the metrics and the effectiveness of the development process itself. This step encourages reflection on the five previous steps and checks if the metrics inform the business strategy. Doing so assures that the metrics have met their goals and result in business value for the organization. Additionally, it fosters the development of a high level summary of results (see summary worksheet on page 5).

Figure 3 shows a schematic of the six steps of the Strategic Metrics Development Process and the associated worksheets.

Step 1
What is Material

STEP 1

Expected Outcomes

- Understanding of the organization's business strategy and existing performance measurement systems
- Understanding of how the organization currently addresses environmental, social and economic aspects

1. Understanding the Context for Metrics Development

The GEMI *Metrics Navigator*™ is designed to help users develop non-traditional metrics that complement the organization's existing performance measurement system. The metrics development process begins with:

- articulating the organization's business strategy, business objectives and performance measurement system
- mapping how the organization currently addresses environmental, economic and social aspects

This ensures that the metrics support what is important to the organization and can advance business performance by leveraging the interactions between economic, social and environmental issues.

Define the Organizational Scope

The tool is applicable to organizations of various scales and levels. An organization is defined as an entity "that has its own function and administration."[6] Examples of an organization for this tool include an entire corporation, a business unit and a single site or operation.

Understand the Business Success Factors

An organization sets direction through strategy and uses measurements to stay on track. Measurements developed outside of the organization's strategic business success factors will not drive the results identified in the strategy. [7]

Describing the organization's business strategy is the essential first step in understanding the business success factors for developing new metrics. Many organizations articulate their strategy through vision and mission statements as well as clearly stated business objectives. Some also develop core values to reflect characteristics that are important to the organization.

Measure Business Performance

Traditional measurement schemes track performance towards financial and operational goals. In addition to financial metrics many organizations use non-financial measurements in emerging areas, such as resource management, workplace and board diversity and corporate governance. Measuring ***intangibles***, e.g., reputation, is increasingly recognized as assessing hidden value that has been created by an organization.

Organizations may use a variety of measurement models to integrate non-financial and financial measurements including: The Balanced Scorecard, Economic Value Add, Intellectual Capital Approaches, Value Explorer® and Value Chain Scoreboard™. [8]

EAG Perspective

What Is the Measurement Challenge?

Businesses have done an excellent job in implementing rigorous financial measurements ('what we understand') and, to some extent, process measurements ('what we think we understand'). The challenge is to move toward a dynamic and multi-dimensional system that incorporates measurements of 'what we do not understand' (see table below). Jim Ritchie-Dunham of the Institute of Strategic Clarity explores this online at **www.gemi.org/metricsnavigator**.

Strategic Measurement	What We Understand	What We Think We Understand	What We Do Not Understand
What we want *(mission / vision)*	One financial measure	One mission - driven measure	One integrative measure
Who cares *(stakeholders)*	Shareholder value	Supply chain value	Multiple stakeholder value
What is needed *(resources)*	Cost drivers	Value drivers	Resource dynamics
How we each contribute *(functions)*	Profit center contribution	Process contribution	Systemic contribution
How we influence each other *(relationships)*	Profit and loss contributions	Handoffs in process	Relationship dynamics
What happens then *(system)*	Single indicator of financial health	Multiple indicators of process health	Multiple indicators of system health

Link Measurement to Strategy

By developing metrics that are aligned with business strategy this tool ensures that an organization measures what is right for them and measures things the right way. Further, an organization can identify and implement metrics in the context of where the organization is headed, not solely based on where it has been. [9]

Describe the Business Success Factors – Worksheet 1a

Worksheet 1a (on page 13) provides a template for documenting the organization's business strategy and performance measurement system. The completed worksheet will:

- define the organizational scope for which future metrics will be developed
- articulate 'high-level' goals
- outline the business strategy, business objectives and strategic performance measurement system to which new metrics should relate

1. Understanding the Context for Metrics Development

WORKSHEET 1a: UNDERSTAND THE BUSINESS SUCCESS FACTORS *(XYZ Nutritional Beverage Example)*	
Organization: *The organizational unit under consideration for metrics development*	XYZ Nutritional Beverage (a division of XYZ Food Products, Inc.)
Mission: *The mission statement for the organizational unit (or its parent)*	Providing our customers nutritious food and beverage products of the highest quality that are produced in an environmentally-sensitive manner, while consistently exceeding shareholder expectation.
Core values:	• Superior financial performance • Nutritious products of the highest quality • Safe and healthy work environment • Responsible environmental practices • Enriching the communities in which we operate
Vision for product / process:	Superior nutritional beverage brand which consumers embrace for its quality, taste and innovation.
Define the market environment:	Food and Beverage / Natural Foods Industry. Consumers fall into three categories: diet and healthy living, lactose alternative and organic.
Business objectives:	• Increase market share • Increase revenue • Reduce cost
Business risks and opportunities:	Availability and consistency of raw product. Building relationships and partnerships with organic farmers. Focusing on emerging markets by building brand recognition and educating consumers on health benefits of nutritional beverage.
Business performance measurement:	Balanced Scorecard (financial, customers, business operations and learning and growth perspectives). Cascaded from corporate down to each business division and individual manager.

What Sustainability Means to the Organization

In developing the sustainability context, a business should look beyond financial performance to see how environmental, economic and social issues currently are, or will be, addressed within the organization.

The tangible and intangible business values that can result from addressing non-financial issues have been discussed in GEMI's *Clear Advantage* tool (see Resources in Online Appendix). The case example by FedEx Corporation demonstrates how their corporate values reflect the capabilities of its core operations and values of its employees.

Various frameworks and methods exist to help identify issues an organization currently addresses, including:

- the GEMI *SD Planner*™ – can help document the status for environmental, social or economic issues and the gaps between an organization's current and desired position
- the BRIDGES Sustainability Framework [10] – illustrated in Figure 4 (on page 15), this framework offers a model to identify aspects and impacts that need to be considered in developing metrics

Case examples by 3M and Eastman Kodak Company (on pages 16 & 17) illustrate how an organization's commitment to a sustainability vision directly supports the business context.

FedEx

Response to Hurricane Katrina

The values of FedEx Corp. and its employees are reflected in how it uses its capabilities in response to a disaster. Corporate values are crafted on six principles: People, Service, Innovation, Integrity, Responsibility and Loyalty. Their execution underpinned the company's planning and response to Hurricane Katrina's devastation of the Gulf Coast region in 2005.

The nature of the transportation industry can be volatile, making contingency planning crucial to a successful business. Variables such as weather patterns, mechanical difficulties and last-minute customer needs routinely affect the system.

FedEx, as part of its normal operations, maintains a complex logistics network to pinpoint and resolve problems before they impact service. For example, emergency relief kits containing two tons of operational supplies are constantly on standby for any facility with an emergency. Five empty FedEx flights operate nightly, ready to substitute for out-of-service aircraft or help with a surge in airlift demand.

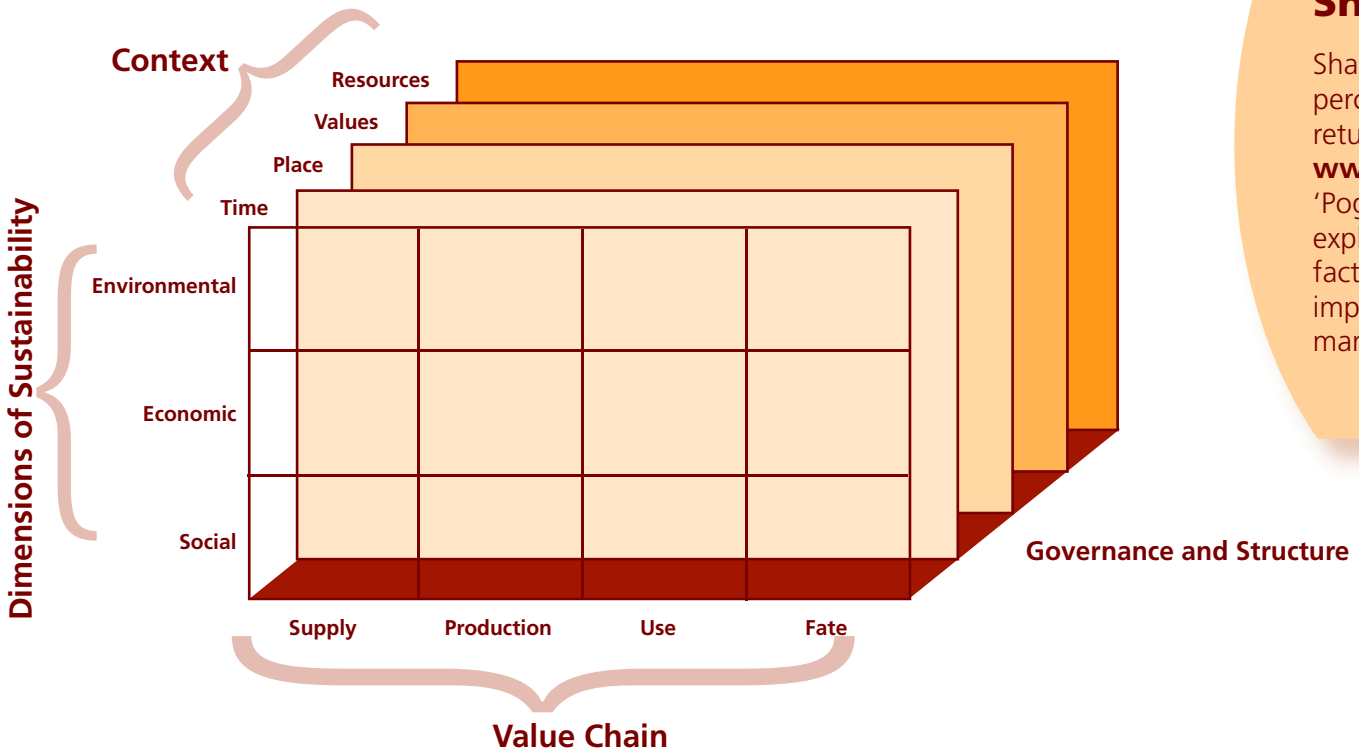
In addition, disaster response drills are incorporated into the business model. As a result, disaster planning and response are core competencies that serve broader humanitarian needs. Hurricane Katrina demonstrated this principle when it devastated the U.S. Gulf Coast region.

In anticipation of Katrina's landfall, FedEx pre-positioned supplies, including 30,000 gallons of water, 85,000 home generators and four 4,000-lb. facility repair kits, near Baton Rouge and Tallahassee so they could quickly be transported to the point of need. The company joined forces with the Red Cross, a longtime disaster relief partner, to deliver medical supplies. And, FedEx Kinko's delivered office supplies to government relief workers working onsite.

The values that underlie these actions extended to individual employees. Mike Mitchell, a senior technical advisor at FedEx Express, took independent action to deliver a generator and technical equipment to relief workers who desperately needed a functioning communications system. His action enabled relief teams to use a FedEx communications installation that had survived the storm.

Although Mitchell's actions were of his own initiative, they were consistent with corporate philosophy. Just as important, his success was rooted in the skills and training which are indispensable to the success of FedEx as a business.

Figure 4. BRIDGES Sustainability Framework



The BRIDGES Sustainability Framework offers a model to identify aspects and impacts that need to be considered in developing metrics. The framework recognizes that this requires looking at the triple-bottom-line, not only within the company's fence line, but also along its value chain. Each frame serves as a set of lenses through which the scope of the issues can be defined and the relevant risks and opportunities associated with environmental, social and economic considerations can be determined. The most common context frames of time, place, values and resources define and refine the scope of each issue.

© BRIDGES to Sustainability, Golder Associates Inc.

EAG Perspective

What Contributes to Shareholder Value?

Shareholder value is derived from the market's perception of a business' ability to generate returns today and in the future. Online at **www.gemi.org/metricsnavigator**, Jean 'Pogo' Davis, formerly of ConocoPhillips, explains how environmental and societal factors can contribute to shareholder value by improving short-term returns and exceeding the market's expectations of future performance.

3M

The Role of Sustainability at 3M

The three legs of sustainability (economic, environmental and social) are interdependent at 3M. This is evident from its corporate business imperatives:

1) Corporate values

2) Sustainable growth

3) Productivity

4) Talent management

The first business imperative, 3M's six fundamental corporate values are reflected in its sustainability policies and practices. The company's commitment to corporate governance and its sustainability vision to "actively contribute to sustainable development through environmental protection, social responsibility and economic progress" are direct reflections of the fundamental corporate values.

Sustainable growth and productivity include two of the company's main sustainability platforms: Life Cycle Management (LCM) and Pollution Prevention Pays (3P). LCM is a required process in the development, manufacturing and distribution for all products to reduce the environmental, health, safety and energy impacts throughout the entire product life cycle. 3P is a 30-year-old program focused at reducing pollution at its source, which is a cornerstone for process improvements to reduce waste and improve productivity.

Lastly, a company is only as good as its employees. 3M's business imperative for talent management supports its social sustainability strategy of meeting employee and community needs as a socially-responsible company. Specific objectives have been developed around attracting and retaining a diverse and talented workforce, supporting continuous learning and knowledge-sharing and providing meaningful employment in a work environment that respects the dignity of individuals.

Current Sustainability Focus – Worksheet 1b

Worksheet 1b (on page 18) provides a template for identifying where the organization currently focuses, or plans to focus, its efforts with respect to environmental, social and economic issues and initiatives. The organization should be able to describe:

- the organization's current focus with respect to issues impacting both the organization's business and society at large
- the programs and initiatives that are in place
- which corporate functions are involved in these programs and initiatives
- where efforts are focused in the value chain

Consider Diverse Perspectives

To collect comprehensive information for Worksheet 1b, representatives from relevant internal functional areas might be consulted. This cross-functional approach will provide diverse perspectives on what issues are being addressed and the initiatives underway in the organization. Worksheet 1b provides examples to illustrate how environmental, social and economic issues can be managed by various business functions.

This exercise may also provide insight into emerging and environmental, social or economic issues that are being overlooked. This information should begin to illustrate how responsible corporate behavior supports the business and contributes to shareholder value.

Eastman Kodak Company

Supporting Business Transition through Responsible Growth

Kodak is transforming its traditional imaging products and services to compete in the digital market. The transition to digital technologies has changed the nature of Kodak's business and presented new challenges and opportunities for responsible growth. Early in this transition, Kodak developed a set of Responsible Growth Principles, which established goals to support business objectives for continued digital expansion and the company's commitment to health, safety, environment and global sustainability.

The digital business is more equipment-intensive compared to traditional imaging, making life-cycle planning and product stewardship critically important. Therefore, Kodak has set, as part of its new Responsible Growth goals, a product stewardship goal of improving the environmental attributes of Kodak products throughout their life cycle. This goal is supported by Kodak's comprehensive Product Stewardship Strategy, which includes a set of standards based on considerations such as pending legislation, risk assessment data, potential environmental conditions, product safety/electromagnetic compatibility, use of restricted materials and end-of-life considerations.

The Kodak Picture Kiosk provides an example of the company's commitment to product stewardship and continuous improvement during the transition from traditional to digital technologies. Since 2000, Kodak's Picture Kiosks have achieved environmental improvements while delivering a larger variety of prints at faster throughputs. As the kiosk evolves, product stewardship standards are applied at each development gate/phase from ideation to final design. The result has been environmental improvements in each successive generation, such as a reduced material and packaging use and U.S. EPA ENERGY STAR® compliance. These environmental improvements in the Picture Kiosk reflect Kodak's heritage of product stewardship, while improved performance capabilities in printing speed solidify its position of growth and innovation in the digital world.

WORKSHEET 1b: IDENTIFY THE FOCUS ON ENVIRONMENTAL, SOCIAL AND ECONOMIC ISSUES AND INITIATIVES

(XYZ Nutritional Beverage Example)

Organization's Sustainability Definition:	Brundtland Commission [11] definition

VALUE CHAIN STAGES:
S = Supply; C = Company Operations; D = Distribution; U = Customer Use of Product / Service; E = End of Life

Value Chain		Environmental	Social	Economic
S	**Resource Extraction, Raw Material Development & Supply**	• Impact on biodiversity	• Compensation and human rights of supplier's employees	• Meet business contract obligations as customer
C	**Research & Development**	• Sourcing from environmentally-sensitive areas • Regulatory compliance • Consider environmental impact of new products	• Clinical study ethics (e.g., Declaration of Helsinki) • Talent retention / attraction	• Patent and intellectual property protection ethics • Responsible environmental practices • Enriching the communities in which we operate
	Manufacturing / Operations	• Regulatory compliance • Meeting sustainability goals	• Fair compensation and benefits; practices on freedom to organize • Relationship to communities surrounding operations	• Meet production and cost goals while conforming to the company code of conduct
	Marketing & Sales	• Regulatory compliance	• Access to products in developing world (F)	• Pricing • Consumer advertising
D	**Distribution**	• Regulatory compliance • GHG impact of shipping / transportation	• Compensation and human rights of supplier's employees or those of third party distribution company • Relationship to communities	• On-time deliveries that meet patient demands
U	**Customer Use of Product / Service**	• Safety data complete • Minimize packaging • Proper disposal guidelines	• Warnings of potential product abuse • Emphasis on healthy lifestyles, not product use (F)	• Over-prescribing
E	**End of Life**	• Proper disposal verified	• Easy disposal options	• Returned product practices

NOTE: annotate future (F) or planned considerations

Step 2
What is Material

2. Assess Issues from Stakeholders' Perspectives

STEP 2

Expected Outcomes

- Identification and prioritization of issues from the perspectives of employees and key external stakeholders

The purpose of Step 2 is to identify and assess the environmental, social and economic issues of importance to stakeholders. It will help determine material issues for the organization and result in prioritized lists of issues based on employees' and external stakeholders' perspectives.

Internal - Identifying and Engaging Employees

Assessing which issues are important or material to an organization begins with identifying and engaging key employees and managers from various functional areas. To determine what is important internally, the organization should bring together or reach out to employees who have the most experience in addressing environmental, social and economic concerns. Many internal initiatives deal with one or several dimensions of corporate responsibility but there may be little coordination or collaboration. This can be an opportunity for the organization to look holistically and draw upon expertise regardless of where in the organization it is found. It can also be a way to find and inspire champions in the organization.

Table 1 (on page 20) demonstrates how employees offer diverse and cross-functional perspectives on issues that present risks and/or opportunities for the organization.

In engaging employees who are not necessarily versed in the concepts of sustainability, it is valuable to identify and understand their context, so as to communicate effectively and gain needed support. It may also be useful to characterize the degree to which they support the concepts of sustainability or ***corporate social responsibility*** **(CSR)**.

EAG Perspective

How Can One Develop 'Sustainability Leaders'?

It is all about people. Many companies lack a plan to develop the understanding and commitment for sustainability thinking in leaders at all levels of the organization. An important first step is to identify the champions, doubters and those in-between (i.e., 'green, red, and yellow dots') within the organization and understand how to involve them. This is discussed by Paul Tebo, formerly of DuPont, online at **www.gemi.org/metricsnavigator** in the context of developing current and future leaders.

Internal - Identifying Current and Emerging Issues

Once key employees are selected, the organization can then identify and evaluate their issues of concern. There are many ways to collect information from employees ranging from desktop research to interviewing or conducting informal surveys, to bringing a team together to brainstorm. Various internal sources are available to help identify issues, including: internal risk analysis; company annual and financial reports; employee surveys; environmental management system control plan; stakeholder engagement plan and shareholder resolutions.

TABLE 1. EXAMPLES OF POTENTIAL ENVIRONMENTAL, SOCIAL AND ECONOMIC INTERNAL PERSPECTIVES				
Value Chain	**Business Function**	**Environmental**	**Social**	**Economic**
S	**Logistics / Supply Chain Management (Procurement)**	Purchase from environmentally-responsible suppliers	Purchase from suppliers who observe fair labor laws and guidelines	Help stimulate local economic development through purchasing
	Executive Management	Develop vision and policies	Develop vision and policies	Develop vision and policies
	Finance & Investor Relations	Link environmental practices to lower financial risk	Relate socially-responsible practices to lower financial risk	Include company in Socially Responsible Investing (SRI) funds
	Business Management	Develop goals	Develop goals	Develop goals
	Legal	Compliance Defend against litigation regarding environmental practices	Compliance Defend against litigation regarding labor or other social actions	Compliance
	Research & Development	Develop environmentally-friendly product / service	Develop product / services that meet society's needs equitably	Stimulate innovation and new market ideas
C	**Manufacturing / Operations**	Eco-efficiency: reducing environmental impacts per unit of output	Address concerns of local community	Provide jobs
	Environmental, Health & Safety	Mitigate environmental risk Manage / reduce EHS footprint	Manage health and safety risk, engage colleagues to adopt change	Demonstrate savings through pollution prevention initiatives and accident reduction programs
	Human Resources	Promote programs to help employees save energy at work	Enhance employee health and well-being	Create jobs in the community Minimize outsourcing of labor
	Marketing & Sales	Market environmental benefits of products and services	Understand related customer needs	Market socially-responsible management and environmentally-friendly product and services
	Communications (PR)	Feature environmentally-responsible behavior	Engage local stakeholder community	Link socially-responsible behavior to company value
D	**Logistics/ SCM (Distribution)**	Require shippers to meet environmental laws	Increase spending with women and minority-owned suppliers	Optimize supply and demand over time
U	**Communications (Customer Service, PR)**	Communicate environmental benefits and risks	Use focus groups on customer service	Evaluate return on investment of communication efforts
E	**Product Stewardship**	Introduce recyclable packaging Minimize product's lifecycle impacts	Use local waste service companies	Expand product development / packaging take-back policy

Note: VALUE CHAIN STAGES: S = Supply; C = Company Operations; D = Distribution; U = Customer Use of Product / Service; E = End of Life

2. Assess Issues from Stakeholders' Perspectives

Among the best ways to identify both current and future issues of concern is through effective employee engagement. Employees are the organization's 'ears-to-the-ground' and form a very perceptive early-warning system. When issues are identified, they may not be material today but may need to be considered in the future.

Worksheet 2a – Prioritizing Employees' Issues

Worksheet 2a provides a template to rate and prioritize issues identified by an internal team. This allows users to rate the issues identified at each value chain stage based on two criteria used to assess relevance to business, including:

- importance to business success factors (y-axis) – Is the issue important to the organization, business strategy, objectives and values?
- significance of organization's impacts (x-axis) – Does the organization have current or potential impacts to the outside world with respect to the environmental, social and/or economic issue?

Worksheet 2a plots ratings for each issue based on the combination of the two criteria. Color coding demonstrates how the issues rate in terms of overall relevance to business. For example, an issue that rates highly on both criteria is determined to have high relevance to business. Also this consolidates issues identified at all value chain stages. Notice that issues may receive different ratings at different stages of the value chain, e.g., energy use at the distribution stage receives a higher rating than energy use at the supply and corporate operation stages.

WORKSHEET 2a: INTERNAL – PRIORITIZE EMPLOYEES' ISSUES OF RELEVANCE TO THE BUSINESS

(XYZ Nutritional Beverage Example)

INSTRUCTIONS: Plot the potential and current issues identified by employees. Rate each issue as High (H), Medium (M), or Low (L) according to the following considerations:

Organization's Impacts
- Do the organization's activities currently or have the potential to impact the issue?
- Are the current / potential impacts significant in comparison to other industries or peers in the same sector?

Importance to Business Success Factors
- Are there short- or long-term business risks or opportunities associated with the issue?
- Would addressing the risks / opportunities support the organization's business strategy and objectives?

VALUE CHAIN STAGES:
S = Supply; C = Company Operations; D = Distribution; U = Customer Use of Product / Service; E = End of Life

Importance to Business Success Factors	L	M	H
H		• Energy use (S, C) • Employee Health and Safety (C) • Impact on local communities (S, C) • Talent retention (C)	• Water use (S, C) • Organic products (S, U) • Nutrition content (U) • Energy use (D)
M	• Immigration policy (C)	• Use of alternative energy (S, C, D) • Community outreach (C) • Education (U, E) • Local homeless population (D	• Local economic development (S, C) • Farming run-offs (S)
L	• Transportation infrastructure (D)	• Taxes paid (C)	• Air emissions (D)

Organization's Impacts

Issues (examples):	Reasoning behind Rating:
Energy use (D)	High impacts, distribution is major contributor to energy use and associated costs
Energy use (S, C)	Medium energy intensity in supply and company operations
Use of alternative energy sources (S, C, D)	Medium potential impacts and opportunity for industry leadership
Farming run-offs (S)	Significant current impacts, medium business risk
Employee Health and Safety (C)	Medium current impacts, but important as part of core value
Local economic development (C)	Opportunity to integrate into local fabric, with high impact but medium importance to business
Taxes paid (C)	Standard business procedure
Transportation infrastructure (D)	Relevant but not important to business, with limited organization's impacts

External - Identifying Stakeholders

Concerns of key external stakeholders have been a historic driver for the internal management of emerging social and environmental issues, as illustrated by the case example of Bristol-Myers Squibb (on page 23).

In addition to the stakeholder engagement processes already practiced in an organization, there are several methods to identify which external groups could play a key role in identifying and rating issues. GEMI's *Transparency: A Path to Public Trust* provides guidance in:

- identifying significant stakeholders that interact with the organization
- gathering key information regarding stakeholders' expectations and motivations, as well as the current state of the organization's relationship with them
- deciding which stakeholders are 'significant' or key to the organization

The tool further classifies stakeholders as 'significant' when they: [12]

- supply resources that are critical to the success of the organization
- have something at risk; their welfare is directly affected by the performance of the organization
- have sufficient power to affect the performance of the organization, either favorably or unfavorably

External - Engaging Stakeholders

How the organization chooses to engage stakeholders should begin with understanding the existing relationship. An organization may choose to establish different 'rules of engagement' for a hostile stakeholder versus a supportive and committed one. The GEMI *Transparency* tool outlines a method for assessing stakeholder relationships and how that relationship may affect engagement. The case example by The Scotts Company (on page 23) shows how issues can be identified from customer calls.

Incorporating External Stakeholders' Perspectives

Incorporating external stakeholder perspectives can include a survey of a cross-section of employees knowledgeable of external stakeholder concerns. As the GEMI *Transparency* tool points out, various stakeholder concerns are often known by employees. Nevertheless, direct engagement of the significant stakeholders may be necessary to further identify, assess or confirm their concerns. This ensures that the material issues identified through this process incorporate the expectations and needs of all stakeholders.

Bristol-Myers Squibb Company

External Reporting and Internal Management of Metrics

Bristol-Myers Squibb is an early leader in reporting environmental, health and safety (EHS) metrics. With respect to government and media reports of environmental data, and to communities' inquiries regarding local operations, the company began to report environmental performance data in the 1990s. In addition, the company participated in developing the first draft of the Global Reporting Initiative (GRI) and was among the first to apply the GRI reporting standards.

While reporting EHS metrics began as part of Bristol-Myers Squibb's effort to meet external stakeholder expectations, it has driven the development of an organizational capacity for tracking and managing non-regulatory metrics. An extensive infrastructure, including procedures and databases, were developed for EHS data collection, verification and reporting. In spite of the external reporting focus, the metrics resulted in a range of internal management benefits, including:

- ability to assess the company's potential environmental impacts
- identification of cost-saving opportunities
- cross-functional involvement and company-wide awareness of sustainability issues

In short, the system enabled Bristol-Myers Squibb to assess its potential impacts, to determine appropriate performance targets and to measure progress towards such targets. It provided much of the capacity for the development and tracking of the company's 2010 sustainability goals.

Today, Bristol-Myers Squibb tracks 60 environmental parameters in about 50 facilities worldwide and has produced sustainability reports since 2001. Maintaining and further developing metrics and reporting systems, however, do come with challenges. First, data collection and verification can be costly, especially in terms of human resources, and need to be effectively managed. Further, in external reporting, it is critical to understand that information may be used by the public in ways which were not intended.

In summary, though initially driven by external requests, Bristol-Myers Squibb's EHS metrics and reporting system has brought tangible, internal business benefits.

The Scotts Company

Identifying Issues from Consumer Calls

One effective way for identifying issues of importance to customers is the consumer calls made to the company. Scotts has established a process for identifying business issues raised through consumer calls, communicating the information to the various business functions and translating it into actions.

Scotts' Consumer Call Center receives roughly one million calls annually from consumers for all of its product lines. Every incoming call is logged into a database, along with key information such as consumer concerns, products affected and the geographic location of the call. The database is routinely analyzed and compared to previous periods to identify trends and anomalies. The analysis is then reported to various departments where it can be further examined to identify issues that require the company's attention.

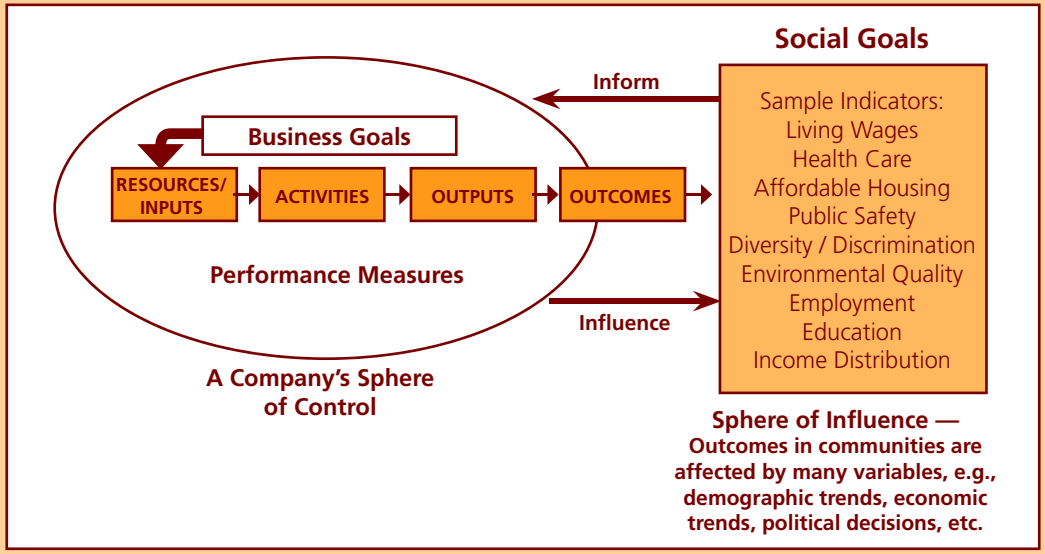
The database is designed to facilitate collaboration between various internal departments, such as quality assurance, marketing, research & development and environmental stewardship, to develop strategies to improve Scotts' products. The consumer call data have been effective in identifying risks. Even one call related to a serious safety issue, for example, has led to a product being pulled out of the market and/or re-engineered for improved safety performance. That change resulted in a Consumer Safety Award from the Home Safety Council for product innovation.

Opportunities for products that address environmental concerns have also been identified through consumer calls. The desire for phosphorous-free fertilizer as an option for use around sensitive waterways and Canadian market demand for natural products are among consumer issues that have led to new products.

EAG Perspective

Are Social Goals Relevant to Business?

Community indicator programs can provide insights into what is important to the local community. While social / community goals are typically outside a company's sphere of control, they are influenced by local business policies and practices (see figure below). Online at **www.gemi.org/metricsnavigator**, Kirvil Skinnarland of Sustainable Seattle and Trilogy, LLC, explores how community indicators can help inform a company in determining what is material and in shaping its business goals.



Worksheets 2b – Prioritizing External Issues

Worksheet 2b (on page 25) provides a template to rate and prioritize issues of concern to external stakeholders. This allows users to rate the issues identified at for each value chain stage based on two criteria:

- level of concern to stakeholders (x-axis) – Is the issue is of high current or potential concern to key external stakeholders?
- organization's ability to control or influence (y-axis) – Are there actions the organization can take to control or influence the issue?

Concerns of employees and external stakeholders should reflect both current and emerging issues even if they are not of high concern or within the company's ability to control today. They may represent future issues to be considered today or at least 'parked' for consideration in the future. Together, these two criteria determine the significance of the external concerns.

Worksheet 2b plots issues' ratings based on the combination of the two criteria and the color coding demonstrates how the issues rate in terms of overall significance. An issue rated highly on both criteria is considered to be of high significance of external concern.

Some of the issues listed in are identical to those identified earlier from the perspective of employees (Worksheet 2a). Other issues, however, may be identified only through the perspective of external stakeholders.

Completing Step 2 will result in prioritized lists of issues from the perspectives of employees and external stakeholders. The next step will outline how to consolidate these to produce a short list of material issues.

2. Assess Issues from Stakeholders' Perspectives

WORKSHEET 2b: EXTERNAL – PRIORITIZE ISSUES OF CONCERN TO EXTERNAL STAKEHOLDERS

(XYZ Nutritional Beverage Example)

INSTRUCTIONS: Plot the potential and current issues identified by external stakeholders. Rate each issue as High (H), Medium (M) or Low (L) according to the following considerations:

Level of Concern to Stakeholders
- How strongly does each key stakeholder group care about the issue?

Organization's Ability to Control or Influence
- Does the organization have control or influence over the value-chain stages affecting the issue?
- Are there actions the organization can take to affect the issue directly or indirectly?

VALUE CHAIN STAGES:
S = Supply; C = Company Operations; D = Distribution; U = Customer Use of Product / Service; E = End of Life

Organization's Ability to Control or Influence	L	M	H
H	• Energy use (S, C) • Water use (C)	• Education (U, E) • Community outreach (C) • Immigration policy (C)	• Nutrition content (U) • Organic products (S, U) • Impact on local communities (S, C)
M	• Taxes paid (C)	• Use of alternative energy (S, C, D) • Employee Health & Safety (C) • Energy use (D) • Animal rights (S)	• Water use (S) • Farming run-offs (S) • Local economic development (S, C) • Air emissions (D)
L	• Local homeless population (D) • Talent retention (C)	• Transportation infrastructure (D)	• Global security (S, C, D)

Level of Concern to Stakeholders

Issues (examples):
Nutrition content (U)
Organic products (S, U)
Use of alternative energy (S, C, D)
Global security (S, C, D)

Reasoning behind Rating:
High level of stakeholder concern, well within organization's ability to control
Important to customers, organization can expand portfolio and modify sourcing
Concern to some stakeholders, organization can influence supply chain
High level of stakeholder concern, but limited organization's ability to control or influence

Note: the issues of global security and animal rights were added by external stakeholders, not included by employees in Worksheet 2a

Step 3
What is Material

3. Develop Key Objectives

STEP 3

Expected Outcomes

- Material issues for consideration in developing metrics
- Critical few key objectives

The purpose of Step 3 is to:

- consolidate the internal and external issues to produce a short list of issues most material to the organization
- identify potential objectives, i.e., what the organization may want to achieve in addressing the material issues
- select the critical few key objectives based on the business and societal value of addressing the material issues

This is a critical synthesis of material issues and their evaluation against the business success factors outlined in Step 1. Step 3 worksheets list material issues and selected key objectives for which KPIs and metrics will be developed.

Selecting Material Issues – Worksheet 3a

Materiality is examined in this tool through the four criteria discussed in the Overview. Two of these criteria were applied in Worksheet 2a (on page 21) to prioritize issues for their relevance to business:

- importance to the business success factors
- significance of environmental, social and/or economic impacts from the organization

The remaining two criteria were applied in Worksheet 2b (on page 25) to prioritize issues for significance of external concerns:

- level of concern to external stakeholders
- the organization's ability to control or influence

Worksheet 3a (on page 27) serves as a mechanism for selecting and summarizing material issues from both internal and external stakeholder perspectives. The issues will be plotted according to relevance to business (Worksheet 2a) and significance of concern (Worksheet 2b). For the example of XYZ Nutritional Beverage, community outreach is of high concern to external stakeholders but of medium relevance to the business, resulting in a medium materiality in Worksheet 3a.

This follows the same format and color-coding as previous worksheets. Issues that fall into the high materiality rating in Worksheet 3a are important internally and externally and can be the basis for key objectives.

Issues that fall into the medium materiality rating also warrant consideration for key objectives. This includes issues of high priority from the internal perspectives that the external stakeholders have not yet recognized, or vice versa. In fact, issues of high priority to external stakeholders that have not been recognized internally may constitute emerging issues for the organization.

Issues that receive low ratings are not material issues and may not require immediate attention. For XYZ Nutritional Beverage, these include border control, transportation infrastructure and animal rights.

Similar materiality ratings are used by some companies. Abbott, as illustrated in its case example (on page 28), rates issues by high, medium, and low priority.

WORKSHEET 3a: SELECT MATERIAL ISSUES

(XYZ Nutritional Beverage Example)

INSTRUCTIONS: Plot the issues according to ratings received in Worksheet 2a (Relevance to Business) and Worksheet 2b (Significance of Concern).
H/H =H; H/M=H; H/L = L or M; M/M=M; M/L = L; L/L = L

For example, Energy Use (S, C) was plotted in the dark-shaded area in Worksheet 2a and receives a high rating on the Relevance to the Business axis in Worksheet 3a. Energy Use (S, C) was plotted in the medium-shaded area in Worksheet 2b and receives a medium rating on the Significance of Concern axis in Worksheet 3a. The overall rating is high (dark shaded) in this combined worksheet.

VALUE CHAIN STAGES:
S = Supply; C = Company Operations; D = Distribution; U = Customer Use of Product / Service; E = End of Life

Significance of Concern (Worksheet 2b)

	L	M	H
H	• Immigration policy (C)	• Community outreach (C) • Education (U, E) • Air emissions (D)	• Nutrition content (U) • Organic products (S, U) • Water use (S) • Impact on local communities (S, C) • Local economic development (S, C) • Farming run-offs (S)
M	• Global security (S,C,D) • Animal rights (S)	• Use of alternative energy (S, C, D)	• Energy use (S, C, D) • Water use (C) • Employee Health & Safety (C)
L	• Taxes paid (C) • Transportation infrastructure (D)	• Local homeless population (D)	• Talent retention (C)

Relevance to the Business (Worksheet 2a)

Abbott

Managing Emerging Business Issues

Abbott's strategy for managing emerging business issues relies on a three-phase process of assessment, prioritization and implementation.

The assessment phase yields an inventory of environmental, economic and social issues. The issues are identified through interviews of internal parties and external stakeholder engagement and research. Approximately 50 business and functional leaders are involved in this phase.

The issues are then prioritized by a team of 25 corporate Vice Presidents and Directors. Each issue is scored for its impact on Abbott and the opportunity for action and mapped. 'High Priority' issues identified have a proactive strategy and dedicated resources and people support implementation. Issues that are 'Medium Priority' require Abbott not only to monitor with appropriate managers kept informed, but also to have positions developed and know where third-party support exists. 'Low Priority' issues require only monitoring and managers be kept informed. Other issues that are not necessarily managed are placed in a 'Parking Lot' for future consideration.

The implementation phase involves aligning existing teams with the policy committee and determining action plans and responsibilities. Tools to support Abbott's emerging issues' strategy, including partnerships and communication avenues, are also identified.

This three-phase process is designed to provide value at several management levels. The assessment phase provides an opportunity for business leaders to be informed about key issues and meet to discuss issues and channel information through a coordinated process. The prioritization phase leads to better planning and helps create a common purpose around what is important and what Abbott can address first. The implementation phase encourages cross-functional action, improves discussion of accountability, and orients people towards the results and how the emerging issues can affect the corporation.

Developing Key Objectives

Once a material issue has been selected, the next task is to determine:

- what does the organization want to do about, and achieve with, the material issue, i.e., what are the potential objectives
- is there sufficient value in addressing the material issue to be the basis for a key objective

To be developed as a key objective the material issue must provide value and support the business strategy identified in Step1. There are three considerations that influence the selection of a key objective and form the basis of Worksheet 3b:

- relevant components - factors that influence the material issue or related issues that can be clustered and addressed collectively with the material issue
- potential objectives - the desired outcomes defined in terms of the organization's objectives
- value proposition - the expected business and societal value generated in meeting the potential objectives

Relevant Components

The relevant components include factors that influence the material issue as well as affect the organization's impacts on the issue. For example, if the material issue is greenhouse gas (GHG) emissions, a factor affecting the material issue would be energy use and the organization's impact on the issue could be its use of alternative energy.

Multiple material issues can share some of the same relevant components. For example, if GHG emissions and the use of alternative energy are both material issues they could both be affected by rising energy prices. A material issue can also be a relevant component for other material issues. For example, the public's concern over GHG emissions is a relevant component that could influence the material issue of the use of alternative energy (the example in Worksheet 3b demonstrates how relevant components may influence a material issue).

The DuPont case example illustrates how the material issue of energy can be managed through two of its relevant components: annual consumption and use of renewable sources.

Potential Objective

The potential objective is the outcome or goal that the organization wants to achieve in addressing the material issue. There can be more than one potential objective for each material issue.

DuPont

Managing Energy

Energy is a material issue for DuPont. At a consumption rate of 233 trillion BTUs per year, DuPont is a large energy user. Energy contributes significantly to the cost of manufacturing as well as to the company's environmental footprint, including greenhouse gas emissions. Therefore, managing energy consumption is important not only to reduce costs but also to address impacts of concern to external stakeholders.

Two strategic metrics are used by DuPont to manage energy use: the total annual consumption and percent energy from renewable sources. For total annual consumption, DuPont set a target of keeping energy use flat at the 1990 baseline in the face of the company's growth. DuPont has achieved this target over the past ten years, and in fact, reduced total energy use by about six percent, while increasing production by 41 percent over the same period. This resulted in more than $3 billion of energy cost avoidance.

Using renewable energy, on the other hand, poses an opportunity for industry leadership. The lack of both cost-effective technologies and sufficient market demand has long hindered the advance of renewable energy usage in the marketplace. By setting a target of achieving ten percent of its energy use from renewable sources by 2010, DuPont is taking a leadership role in changing the market landscape by increasing the demand for renewable sources, demonstrating the use of renewable sources as a practical alternative in managing energy consumption and reducing their associated environmental impacts.

The Dow Chemical Company

Developing Dow's 2015 Sustainability Goals

Dow set its corporate vision to be "the largest, most profitable and most respected chemical company in the world". That means, it aspires to have the scale and scope to do things others cannot; to offer great shareholder value; and to earn the reputation of an industry leader in meeting and staying ahead of stakeholders' expectations. Dow's 2015 Sustainability Goals, announced in 2006, are intended to help the company achieve this vision.

Completion of Dow's 2005 Environmental, Health and Safety (EHS) Goals has demonstrated its ability to use real, measurable and long-term goals to motivate employees, drive innovations and achieve performance improvements. To continue to meet and exceed stakeholders' expectations, Dow recognized the need to expand the parameters of its new 10-year goals beyond EHS to include other aspects of its relationship with the world.

A stakeholder engagement process, started in 2003 involving executives, employees, its Corporate Environmental Advisory Council and external stakeholder representatives, identified three areas for its new set of goals:

- improving local corporate citizenship
- increasing commitment to product stewardship
- reducing global footprint

'Critical few' goals with significance and impacts on all its stakeholders were identified for each of the three areas through discussions at a level of detail appropriate to each stakeholder group.

Dow's 2015 Sustainability goals extend beyond minimizing the risks in its current operations towards proactive contribution to the global community. Specifically, it includes the goal of achieving by 2015 at least three breakthroughs that will significantly improve the world's ability to solve the challenges such as identified in the United Nations Millennium Development Goals.

The 2015 Sustainability Goals also balance the needs for constancy and flexibility. It includes specific numerical targets, such as reducing energy intensity by 25 percent, as well as qualitative targets, such as commitments to participate in certain voluntary programs and to establish local community goals.

Value Proposition

Evaluating the value proposition determines which of the potential objectives could be addressed as strategic key objectives for the organization.

Both business and societal values should be articulated for each potential objective(s) developed for each material issue. In assessing the business value, one should consider whether a potential objective supports the business strategy. Less tangible effects, such as brand image and improved reputation, should also be considered. The case example by Dow Chemical Company illustrates how goals and metrics are developed to support a company's business mission.

Societal values are understood broadly as benefits the organization can bring to society, the environment and the larger economic system through meeting the potential objectives.

Value proposition is the most important consideration in determining whether a potential objective should be selected as a key objective. These potential values can be regarded as the final screen of materiality that consolidates the four criteria discussed earlier in the step.

Selecting the Key Objectives – Worksheet 3b

Worksheet 3b (on page 32) provides a template for documenting the considerations that go into the selection of a key objective. Beginning with the material issues identified in Worksheet 3a, a stepwise analysis of the relevant components, potential objectives and value propositions is performed and documented in Worksheet 3b.

To be selected as a key objective, a potential objective must present a clear value proposition. The key objectives should be few in number, representing the critical few areas where the organization will focus its attention and efforts. Interrelated issues can often be addressed through one key objective.

A potential objective may not be selected as a key objective for a variety of reasons, including:

- lack of clear business or societal value
- less immediate value compared to other potential objectives, and thus postponed for future considerations
- achievable as part of addressing another material issue that has been selected as a key objective and can be included as a lower-level (more tactical) objective
- inability of the business to influence it

Completing Step 3 results in the prioritization of material issues and selection of key objectives for which KPIs, metrics and targets are to be developed.

EAG Perspective

How Can One Align Environmental, Social and Business Values?

The community, environment and private sector all benefit when business and sustainability interests are the same. Paul Tebo, formerly of DuPont, explores how to unleash the power of sustainability thinking in business by aligning business objectives and environmental and social values. The approach, outlined online at **www.gemi.org/metricsnavigator**, will integrate sustainability into all aspects of business.

WORKSHEET 3b: SELECT KEY OBJECTIVES *(XYZ Nutritional Beverage Example)*

INSTRUCTIONS: Document considerations that lead to the selection of key objectives (**in bold**), including the listing of:

- Material Issue: 'high' and 'medium' material issues from Worksheet 3a
- Relevant Components: factors that influence the material issue or the organization's impact on the material issue
- Potential Objective: objective(s) or goal(s) to be achieved in addressing each material issue
- Value Proposition: business and societal value of the potential objectives

VALUE CHAIN STAGES:
S = Supply; C = Company Operations; D = Distribution; U = Customer Use of Product / Service; E = End of Life

Material Issue	Relevant Components	Potential Objective	Value Proposition		Select as Key Objective?
			Business Value	Societal Value	
Educational outreach (U, E)	• Lack of awareness of healthy diet, especially among school children • Lack of awareness of recycling, how & why	Increase involvement in educational outreach programs for school children	• Access to key market demographic • Brand value	• Promote healthy diet • Promote reduction of packaging & recycling	No; while important, it is part of the objective of becoming a provider of choice for school breakfast beverage
GHG emissions (S, C, D)	• Energy use • Use of alternative energy • Best-practice technologies • Energy cost • Public concern on GHG emissions	**Reduce GHG emissions along value chain**	• Reduce energy cost in value chain • Marketing benefits	• Contributing to energy security • Societal benefits associated with GHG reduction; reduction in global climate change	Yes; significant benefits & addresses multiple issues
Use of alternative energy (S, C, D)	• Energy use • GHG emissions • Energy cost • Public concern on GHG emissions	**Increase use of alternative energy sources**	• Cost, may decrease or increase • Marketing benefits	• Contributing to energy security • Societal benefits associated with GHG reduction; reduction in global climate change	No; it is a supporting objective under the key objective, GHG reduction
Organic products (S, U)	• Farming runoffs • Local economic development (rural communities) • Market for organic products	Increase organic product portfolio and sales	• Capture a fast growing food & beverage market • Marketing benefits	• Reduce environmental impacts from farming • Increase jobs in rural America	Yes; significant benefits & addresses multiple material issues
Nutrition content (U)	• Market for balanced nutrition products • Concern over children's nutrition, especially in public school	Develop soy-based dietary supplement beverages	• Capture a potentially developing market	• A dietary supplement choice for lactose intolerant persons	No; significance of benefits unclear
		Become provider of choice of balanced nutritional breakfast products for children	• Growth in key market demographic • Brand value	• Address lack of healthy choice for children, especially schoolchildren	Yes; significant benefits to business and society

Step 4
What and How to Measure

STEP 4

Expected Outcomes

- Established set of Key Performance Indicator (KPIs)
- Understanding of uses and users of metrics
- Measurements that define and support KPIs
- Clear targets for the metrics

4. Define Key Performance Indicators and Metrics

Step 4 builds upon the critical few key objectives selected in Step 3 and creates the Key Performance Indicators (KPIs) and related strategic metrics.

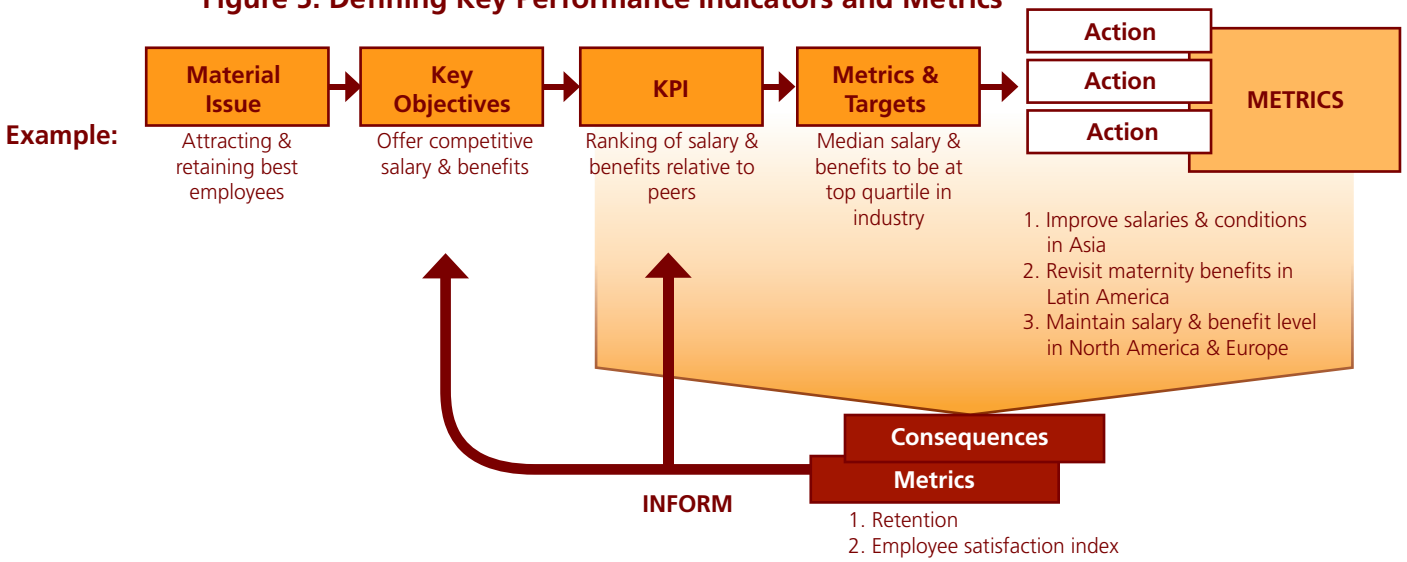
For purposes of this tool, GEMI defines a KPI as a general statement of what to measure; and a metric as the specific measurement accompanied by clear descriptions of how it is measured.

KPIs and metrics are closely related, but they represent two distinct levels. A KPI can be defined to represent what the organization should measure to reflect performance against a key objective. A metric is a quantitative measure, i.e., a number which is given meaning in the context of the KPI. A KPI can be applied consistently throughout the organization, but as a metric can be expressed differently depending on uses and users.

The process for defining KPIs and metrics is depicted in Figure 5, with an example. At the strategic level, material issues and key objectives determine the KPIs and metrics along with their associated targets. These strategic-level metrics are used to drive actions throughout the organization and will result in business and societal consequences, including longer-term effects. More tactical metrics can be developed to track the immediate actions. The consequences of applying the metrics and/or meeting the targets can also be measured, potentially becoming new metrics, to inform the refinement and development of the next generation of key objectives and KPIs.

This tool is focused primarily on KPIs and metrics at the strategic level, reflecting the critical few key objectives most material to the organization. Nevertheless, the approach presented here can be applied at various levels of uses, from strategic to tactical.

Figure 5. Defining Key Performance Indicators and Metrics



Framework for Measurement Considerations

Considering drivers and consequences as part of the KPIs and metrics helps develop leading measurements as well as measurements of achieving the key objectives. Drivers include processes, actions and other factors that lead to the intended outcome. For example, using renewable energy sources can reduce GHG emissions, and thus, can be regarded as one of the drivers that affect that intended outcome.

Consequences include immediate, medium-term and long-term effects of achieving the intended outcome. Energy cost avoidance, for example, is an immediate consequence of reducing energy use. Longer-term consequences include potential innovations in technology development and business models, along with the associated benefits to the society such as reduction in GHGs. Some of the consequences derived from the business and societal values are identified in Worksheet 3b (on page 32).

A KPI typically measures the outcome or result intended by the key objective. It is sometimes useful to establish measurements for either the drivers or consequences of the outcomes as part of the organization's system of KPIs and metrics.

Defining the Key Performance Indicators – Worksheet 4a

Worksheet 4a provides the template for examining drivers and consequences in order to define the KPIs and identify other measurement considerations that later are developed into metrics.

While a KPI is usually an outcome measure derived from the key objective, that is not always the case. If necessary, more than one KPI can be defined for a key objective.

WORKSHEET 4a: DEFINE THE KEY PERFORMANCE INDICATORS *(XYZ Nutritional Beverage Example)*

INSTRUCTIONS: Identify the drivers that affect the key objective and potential consequences (for the business and for society) in meeting the key objective. This information informs the decision as to what to track as KPIs. Indicate other measurement considerations related to the KPI that can be developed into metrics in later stages. Key Objectives were identified earlier in Worksheet 3b.

Material Issue	Key Objective	Drivers	Consequences	Key Performance Indicator (KPI)	Other Measurement Considerations
GHG emissions (S, C, D)	Reduce GHG emissions along value chain	• Energy efficiency • Use of renewable energy • Implementation of best practice technology and processes	• Energy cost reduction • Innovations: technology & business model	• Energy cost reduction • Innovations: technology & business model	• Percent energy from renewable resources • Best practice implementation • Energy cost-saving
Organic products (S, U)	Increase organic product portfolio and sales	• New organic product development • Marketing of organic products • Relationship with organic farmers	• Increased sales • Brand image • Driving more sustainable agriculture	• Percent revenue from organic products	• Implementation of organic farmers program • Customer perception • Avoidance in pesticide run-offs
Nutrition content (U)	Become provider of choice of balanced-nutritional breakfast products for children	• Children nutrition awareness campaign at schools • Nutrition content in products	• Increased sales • Brand image • Contributing to children's health	• School children reached in nutrition awareness campaign	• Nutrition content

4. Define Key Performance Indicators and Metrics

The examples included in Worksheet 4a continue from the key objectives identified in Worksheet 3b for the hypothetical 'XYZ Nutritional Beverage' business. For the GHG reduction objectives, two KPIs were determined to be equally important: net GHG emissions (an outcome measure) and energy use (a driver for GHG emissions). For the objective of becoming the provider of choice for balanced-nutritional breakfast for children, the KPI is chosen to reflect one of the causal factors, i.e., the number of schoolchildren reached in nutrition awareness campaign. In this case, the driver was considered the critical part of meeting the key objective as well as more suitable to measure.

KPIs and other measurement considerations identified in Worksheet 4a inform the development of metrics for various uses and users in the organization.

Uses and Users of Metrics

The uses and users of metrics influence how they are defined. Metrics by themselves mean little outside of the context of how they will be used to improve performance and organizational integration.

Table 2 lists the various uses of metrics which generally are grouped into four categories [13]:

- learning – produce understanding and insights into opportunities for improvement through the identification and assessment of aspects, impacts and issues
- decision-making – generate insights to support decision-making
- accountability – provide information to judge individuals' or units' performance
- demonstration – convince or reassure stakeholders about organization's performance and trends, including demonstrating the connection between environmental, social and financial performance

Metrics can be used by several functional areas in the organization as shown in Table 2. In Step 2, examples demonstrated how decisions are made in numerous functional areas using environmental, social and economic information. In determining who will use the metrics consider:

- where within the organization decisions involving KPIs are made
- which people are responsible for meeting the key objective
- what information will be needed to inform those decisions

Table 2. EXAMPLES OF USES AND USERS OF METRICS

Uses of Metrics	Management	Operations	Financial	Environment Health Safety	Research and Development	Human Resources	Public Relations	Investor Relations
Learning • Benchmark Internally	✓			✓				
• Evaluate Alternatives		✓		✓	✓			
Decision-Making • Identify Improvement Options		✓		✓	✓	✓		
Accountability • Report to Stakeholders	✓		✓				✓	✓
• Track Performance		✓		✓		✓		
Demonstration • Build the Business Case	✓		✓	✓	✓			✓
• Promote SD	✓			✓			✓	

How a metric is defined and presented, however, can differ among uses and users. Metrics used for management progress tracking, external communication and Research & Development decision-making, for example, may involve different definitions in terms of boundaries, data sources and level of ***specificity***.

Types of Metrics

The framework described earlier provides a way to categorize the types of metrics. Descriptions of these categories follow and examples are shown in Table 3 (on page 37).

Outcome Metrics

Outcome metrics are measurements of results. Many of the existing metrics standards, such as the Global Reporting Initiative (GRI), have largely focused on outcome metrics. Outcome metrics typically include:

- *One-dimensional metrics* - often expressed as the absolute magnitude of the organization's impacts per time period
- *Cross-cutting metrics (Integrated Performance Metrics)* - express two or more dimensions of performance, usually as ratios. Eco-efficiency and socio-efficiency metrics are examples of cross-cutting indicators

Both one-dimensional and cross-cutting metrics can be effective measurements of outcomes. The choice is based largely on what it is to be measured. A KPI usually points to an outcome metric, measuring the outcome intended by the key objective.

Process Metrics

Process metrics measure the actions or processes that drive the intended outcomes i.e.,the causes, and are usually tied to the action plans to achieve targets. They include metrics that measure the performance of management processes as well as technical and operational processes put in place to produce the intended outcomes.

Process metrics can be used as effective leading metrics. For example, if the performance objective for an organization is to reduce the number of non-compliance complaints, the outcome metric is the number of non-compliance complaints. However, a cause-effect analysis might reveal that lack of appropriate training is the driver of non-compliance. In this case, an appropriate process metric might include the number of employees that have received compliance training or the number of employees who have changed their behavior as a result of training. This process metric, in addition to the outcome metric, will provide the organization with greater insight into the material issue and the actions to achieve objectives.

Process metrics can be quantitative or qualitative. For example, in measuring the process of stakeholder engagement, one can use quantitative measurements, such as the number of stakeholders engaged, or qualitative measurements, such as stakeholder satisfaction and perceived effectiveness.

Consequence Metrics

Consequence metrics reflect the consequences or effects on the broader system of the intended outcomes. These types of metrics may include:

- *Business consequence metrics* measure the business and financial consequences of the intended outcomes. These can capture benefits to the organization, both tangible and intangible. For example, an ethical reputation index can inform an organization how its business is perceived.
- *Societal consequence metrics* connect actions and activities to the broader economic, environmental and social systems within which they operate. An example of a societal value metric might be the number of acres of habitat an organization created in proportion to the number of acres of habitat created in the region.

Examples of the different types of metrics are shown in Table 3.

All types of metrics have the potential to be relevant to most uses and users, so they should all be considered in building the metrics. However, certain types are more applicable to certain uses. For example, Research & Development decision-making typically relies on outcome and, to a lesser extent, consequence metrics. Process metrics, on the other hand, are useful to manage and track progress towards goals, i.e., accountability, along with outcome metrics.

Consequence metrics are particularly useful in demonstrating the value of an organization's efforts. Case examples by The Procter & Gamble Company and Intel Corporation (on page 38) provide examples of metrics that may be used to manage, track and communicate a company's impacts on the society.

4. Define Key Performance Indicators and Metrics

TABLE 3. EXAMPLES OF ENVIRONMENTAL, SOCIAL AND ECONOMIC METRICS

Metric Types	Environmental	Social	Economic
Outcome			
One-dimensional	• Energy consumption per year • Percent raw materials recycled from customers	• Lost-time incident frequency • Community perception index	• Dollars in salaries and tax benefits flowing to the local community
Cross-cutting	• Energy consumption per unit of value add • Total raw materials per unit of value add	• Number of community complaints per unit of value add to the company	• Economic benefits to the community per unit of value add to the company
Process			
Management & Operations	• Number of energy review activities conducted • Percent facilities participating in resource-efficiency training • Incorporation of energy-efficient technologies in facilities	• Percent of business units that have human rights policy and procedures regarding child labor • Number or percent of contractors and suppliers audited for use of child labor	• Number of executive review meetings on socioeconomic risks and challenges
Consequence			
Business	• Cost reduction from energy savings program	• Employee retention index • Reputation index	• Potential cost of legal liability related to community actions
Societal	• Land area of ecosystem saved due to reduction in raw material use	• Number of quality-adjusted life years saved by product use	• Company's contribution to local economic development

The Procter & Gamble Company (P&G)

Exploring New Value-Creation Metrics

The Procter & Gamble Company's (P&G's) vision of sustainable development incorporates not only reducing costs and impacts but also creating value and business growth through sales, new markets, new consumers and new businesses. This can be achieved when societal challenges, such as those identified in the United Nations' Millennium Development Goals, intersect P&G's ability to innovate.

P&G has identified a number of areas for its contribution to sustainable development. These include safe water, improved hygiene and quality of life of children and women. To measure the performance of these new initiatives, traditional business and environmental metrics no longer suffice. Instead, they need to be measured by new 'value-creation' metrics, such as disease avoided, lives saved, the number of children who reach their full development potential and ways in which women's lives are improved as a result of P&G product and/or service innovations.

P&G's water purifiers, for example, present significant opportunities to improve and even save lives in developing countries. With this safe water technology, P&G can accurately track the consumption and repeat use of the product and the estimated volume of water treated. Measuring and reporting on disease avoided and lives saved by an innovation at the company level, however, is relatively new. Nevertheless, researchers and non-governmental organizations (NGOs) have measured the water purifiers' effects in terms of percent diarrhea reduction and the number of diarrhea episodes averted in certain regions. These metrics are important for P&G to evaluate and communicate the effectiveness of the product.

In developing value-creation metrics that are credible and transparent to stakeholders, the metrics need to be aligned with those used by NGOs, governments, research and health organizations who are long-standing members of the public health communities. Partnerships with these groups allow P&G to gain experience in its approach to health and development and in the use of value-creation metrics. Ultimately, this can lead to the development of specific goals to guide the company's sustainability actions.

Intel Corporation

Assessing Performance of Education Programs

Intel strives to be a trusted partner to educators and governments worldwide. Integral to the company's mission is a focus on "success for all," providing programs and resources that improve teaching and learning to everyone including women, under-represented minorities and those with little or no access to technology.

Several distinct programs work in concert to achieve Intel's education mission in both developed and developing countries. Annual goals are set for these programs, allowing Intel to continually assess its performance. For 2006, the goals include, for example:

- Extend its teachers' professional development program to reach an additional 900,000 teachers and five new countries
- Grow its after-school programs in government-funded community technology centers with the goal of reaching an additional 150,000 learners and adding three new countries

In China, Intel recently announced in 2006 a new plan to train one million elementary and middle school teachers over the next five years, helping them use information technologies in teaching. More than 10,000 personal computers will be provided to China's rural schools by 2008.

The effects of Intel's effort are evident in Minas Gerais, a Brazilian state previously identified as having the lowest computer literacy rate in the country. Intel provided over 2,400 schools in the state a complete technology infrastructure with computers in school labs, libraries and administrative offices. The program also involves training teachers with the necessary skills to fully realize the potential of the technology. Ultimately, this will help teachers integrate technology into the regular curriculum and enhance student's learning capacity in the classroom. By the end of 2006, approximately 170,000 teachers and 2.5 million students in Minas Gerais will benefit from this project.

4. Define Key Performance Indicators and Metrics

Metrics Criteria – Worksheet 4b

To drive improvement and organizational integration, a metric should meet many of the following criteria:

- relevant to business - aligned with business objectives and reflect issues that are material to the organization
- transformative - will lead to positive consequences
- accurate - reflect what it is intended to measure
- reliable - reproducible and comparable across reporting periods and organizational units
- meaningful and useful - can be related to actions and effective for its intended use and users
- understandable - communicated within context that generates insights for decision-making
- cost-effective - can be developed and implemented with reasonable costs

DuPont illustrates in its case example how some of the above criteria apply in developing metrics.

In addition, there are criteria that apply to the suite of metrics:

- few in number - concentrate on the critical few to focus organizational effort and implement a cost-effective metrics program
- balanced - include the right mix of leading and lagging metrics, different types of metrics and the social, environmental and economic dimensions to drive improvement and organizational integration
- valuable - the suite of metrics results in tangible and intangible value for the organization

3M case example (on page 41) discusses the process and considerations in developing an effective suite of key metrics (its 'EHS scorecard').

Worksheet 4b (on page 40) provides a checklist of criteria in defining the KPIs and metrics (in the first column). The criteria are applied again in the implementation of the metrics (in the second column for Step 5) and in assessing their effectiveness (in the third column for Step 6).

DuPont

Metrics to Drive Sustainable Growth

Sustainable growth is the strategic mission of DuPont. To measure sustainable growth, DuPont previously developed 'shareholder value add (SVA) per pound of production' as a single metric that combines multiple environmental and economic considerations in one number. As mass of product is generally correlated with environmental impacts, the SVA/lb metric was designed to drive environmental footprint reduction as well as to move the company toward more knowledge-intensive, higher-value products and services. This metric has proven useful for planning and strategic discussions. Nevertheless, DuPont found the metric to be overly sensitive to factors that had little effect on the state of the environment, including market price fluctuations and business acquisitions and divestitures.

Therefore, DuPont has focused on another set of marketplace and footprint reduction metrics to drive sustainable growth in its operations. One example is the 'revenue from non-depletable resources'. This metric is calculated from the revenue generated from DuPont's businesses that rely primarily on renewable resources (such as seed, soy and bio-based polymer businesses) or the company's human resources and knowledge base (such as safety consulting services and technology licensing). DuPont has set the goal of nearly doubling its revenues from non-depletable resources to at least $8 billion by 2015.

Like SVA/lb, the metric is intended to drive the company toward a lower environmental footprint and more knowledge-intensive services. The metric was selected as a focus for DuPont as it makes sense to all three legs of the triple-bottom-line. Economically, it reduces exposure to market volatility associated with petroleum and other depletable resources. At the same time, it addresses stakeholders' concerns regarding the depletion of natural resources and related environmental impacts.

WORKSHEET 4b: EVALUATE METRICS EFFECTIVENESS CHECKLIST *(to be used in Steps 4-6)*

Criteria		Considerations		
		Step 4 Define KPIs and Metrics	**Step 5 Implement Metrics**	**Step 6 Evaluate Improvement & Integration**
For individual metrics	**Relevant to Business**	• Reflect key objectives	• Integrated into existing management system	• Support business objectives • Relevant to assessing future performance • Align staff and management on strategy
	Transformative	• Will lead to positive consequences • Potential for unintended negative consequences is considered and addressed as necessary • Require actions or behavior changes beyond business as usual • Targets are inspirational	• Lead to the intended and other positive behavior changes	• Drive performance improvement • Stretch organization to innovate in reaching goals • Broaden internal involvement and engagement • Change the mindsets / attitudes of employees toward the importance of addressing the issues
	Accurate	• Measure what was intended to measure • Include key risks and opportunities within the metric's boundaries	• Accuracy of the metric and underlying data are verifiable • Calculated based on credible data	N/A
	Reliable	• Reproducible and comparable across organization and reporting periods • Supported by standardized definition and procedures for data collection and calculation	• Definition and procedures are clearly understood and can be followed by users • Comparable data are collected across organizational units	N/A
	Meaningful & Useful	• Relevant to the intended users and uses • Can be related to action plan and accountable targets • Can be scaled as desired across value chain and organizational levels • Provide sufficient precision and granularity to be useful	• Effective in use and in supporting decision-making process • Link operational metrics to strategic metrics • Timely in terms of the periodic collection of data relative to key decisions	• Provide relevant, timely and reliable information to decision-makers • Meet the intended uses for the intended users
	Understandable	• Expressed in terms that is understandable to the intended audience	• Communicated in context that support use and insights • Can be visually presented to intuitively demonstrate trends and directions (e.g., using a 'dashboard')	N/A
For the suite of metrics	**Cost-Effective**	• Can be developed from available data, whenever possible • Reasonable and cost-effective levels of granularity and precision	• Data are calculated cost-effectively, in a usable manner, without extensive manual intervention	N/A
	Few in Number	• Based on the 'critical few' key objectives • Combine multiple metrics, as appropriate	N/A	N/A
	Balanced	• Include leading and lagging indicators, as appropriate	N/A	• Complement traditional financial measurements • Set of metrics reflect social, environmental and economic considerations, whenever applicable
	Valuable	N/A	N/A	• Metrics link to business value, both tangible and intangible

4. Define Key Performance Indicators and Metrics

Building the Metrics

The uses and users, types of metrics and criteria discussed earlier are important considerations for defining a metric. A number of steps are involved in defining a metric:

- setting the boundary
- defining the form the metric takes
- assessing potential data sources
- determining the necessary level of precision and specificity

Each of these steps is necessary for coming up with a rigorous definition and formula or guidelines for how they will be calculated.

Setting the Boundary

Metrics may encompass one or more stages in the organization's value chain. In defining a metric, one needs to set the boundary for what the metric is to include. This is important to ensure its accuracy - everything that should be measured as part of the metric is to be included within the metric's boundary.

Consider the example in Worksheet 3b (on page 32) where one of the key objectives is to reduce energy cost and the organization's exposure to the climate change issue. Related to a GHG emission KPI identified for this key objective, the metric should include estimated emissions from heat and power generation, regardless of whether they are within the organization's fence-line. Focusing solely on GHG emissions from within the fence-line can be misleading. For example, outsourcing power generation, especially to a less efficient entity, can improve a metric limited to the organization's direct operations (from within the fence-line) while actually leading to increased indirect emissions from purchased electricity. Emissions have simply been shifted or transferred outside the fence-line, and total GHG emissions to the environment may have actually increased.

Step 2's assessment of issues should provide the basis for determining the relevant value chain stages to be included in the metric. Boundaries may vary from one metric to another.

3M

Scorecard to Drive Performance

3M's Environmental, Health and Safety (EHS) Scorecard is an important tool for driving the company's EHS performance. Each scorecard is produced quarterly for all facilities, divisions (i.e., business units) and countries where 3M operates. The scorecard contains a set of metrics with a pre-determined goal that is measured each year and uses a green, yellow, and red color scheme to track performance toward the goal. The intent is to ensure key metrics are defined and tracked and that performance relative to the targets is reported.

Scorecard metrics are reviewed and selected annually by a team of corporate and business EHS professionals. Each metric is evaluated for a variety of parameters to determine its applicability on the next calendar year scorecard. Some of these parameters include: desired EHS outcome, leading / lagging status, reporting frequency and length of implementation. Scorecard metrics generally require global applicability and are balanced between leading and lagging indicators. Leading indicators, such as EHS plans, Pollution Prevention Pays (3P) program implementation and EHS self-assessment performance, are measures of opportunities that will result in improved EHS outcomes. These metrics are critical to providing flexibility for facilities to address their individual needs and opportunities, without using a 'one size fits all' approach. Lagging indicators, such as incident rate and air emissions, are measures of how effectively opportunities were addressed during the year.

The overall outcome of the 3M EHS Scorecard is increased performance and accountability. 3M expects all of its facilities to have high levels of EHS performance. The 3M EHS Scorecard provides visibility at all levels of the organization to ensure that everyone is working to meet these expectations and that they have the resources and management support to do so.

A metric needs to be sufficiently precise and specific to be meaningful and usable.

Defining the Form of the Metric

There are many forms a metric can take. Some can be expressed in absolute form, i.e., in the form it is collected, such as total occurrences of a specific type of incident per year. Metrics, however, are often expressed in ratios, indices and other forms that provide context and enable more effective comparison over time and across the organization. The form of a metric contributes to how meaningful and useful the metric is for its intended uses and users.

In forming a metric, one should consider the following:

- Inclusion of quantitative and qualitative measurements - While metrics are generally regarded as quantitative, some measure qualitative parameters. Examples commonly are found in the social area and include indices of employee morale and customer satisfaction, calculated from qualitative (or subjective) survey results. While qualitative measurements can capture more subjective attributes such as satisfaction, attitude, sense of well-being, importance of issue, etc., they can be interpreted numerically by applying ranking or scoring methods
- Normalization - Normalization can produce ratios that provide better context and more effective scale for comparison. Some denominators for normalization include:
  - o production throughput - Suitable for a manufacturing organization that makes products of similar characteristics and economic value, e.g., a single product facility, this denominator is seldom effective for more diverse or service-oriented organizations
  - o financial measurements of value - Financial measurements, such as revenue, shareholder value add (SVA) and economic value add (EVA), are applied to normalize the organization's impacts. Examples are eco-efficiency and socio-efficiency metrics, such as job creation per dollar SVA. Value-add measurements are often more appropriate in representing the financial value directly related to the impacts

In addition to conventional measurements of value-add, a sustainable value-add can be defined. Figure 6 (on page 43) illustrates a sustainable value-add calculated as the difference between revenue and the costs of natural capital. This includes not only economic profit but also the company's contribution to the development of human / social capital.

- Indexes and composite indices - A metric may also take the form of a composite index - a combined measure encompassing various other metrics. Examples include:
  - o Total cost - sum of internal and external monetary costs of environmental and social impacts
  - o Ecological footprint - a combined estimate of environmental impacts expressed in terms of equivalent land area impacted and other ecological indices
  - o Disability-Adjusted Life Years (DALY), Quality-Adjusted Life Years (QALY) and other health-based indices for weighting impacts in terms of human health
  - o Semi-quantitative composite score weighted by importance to stakeholders, such as outlined in the ISO-14040 series of standards for life-cycle assessment

- Locally normalized metrics could include wages as a ratio to prevailing local wages or water use as a ratio to annual volume locally allocated for industry use
- Composite indices developed by investment analysis and research organizations

Representatives from Ethical Investment Research Services (EIRIS), Sustainable Asset Management (SAM) and Investor Responsibility Research Center (IRRC) participated in the GEMI EAG sessions. Both EIRIS and SAM have developed and applied composite indices to assess corporate sustainability practices based on company questionnaires and analysis of public information. IRRC pointed out the value-chain perspective that analysts increasingly apply, considering risks beyond the company's immediate sphere of control (see the EAG perspective, Are Social Goals Relevant to Business? on page 24).

Difficulty in combining various metrics into composite indices varies. Total cost, for example, yields valuable results but often requires the laborious and uncertain process of monetizing aspects having uncertain financial value. The use of semi-quantitative scores, on the other hand, can proceed once a consensus is reached on how each metric is normalized and a weight assigned to each metric.

In determining the form and what is included within the metric, the organization also needs to determine whether the metric can be meaningful and useful at the different organizational levels.

Potential Data Sources and Levels of Precision / Specificity

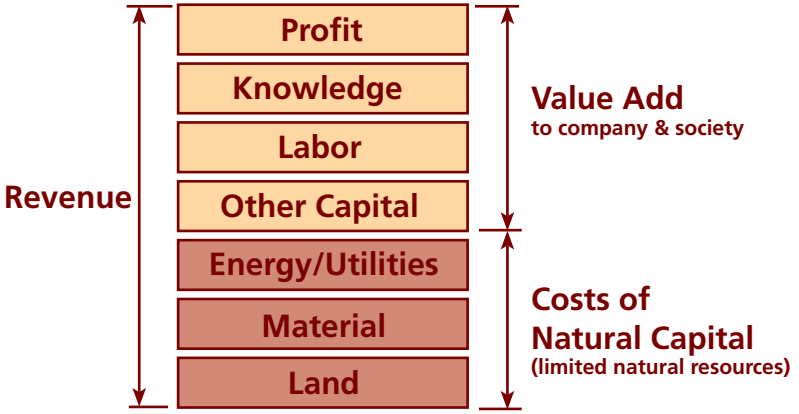
The availability of data sources is an important consideration in determining whether the metric can be developed in a cost-effective manner. The metric can be obtained through various means, including:

- directly calculated from available data
- estimated or modeled from available data
- calculated, estimated, or modeled from data not currently collected by the organization

To minimize cost, consider using available data or data that can be collected using the existing data collection system. When data are not available to directly calculate the metric, consider whether estimation from available data is sufficient. For example, a GHG metric is commonly estimated from available energy-use data.

Data sources and availability are tightly linked with the level of precision and specificity needed for the metric. Specificity refers to the lowest level of the organization to which the metric is reported. Wastewater data, for example, may be readily available for an entire large manufacturing facility, but not for the individual process units within the facility. A metric needs to be sufficiently precise and specific to be meaningful and usable. However, greater precision and specificity than are necessary may make data collection and calculation cost-prohibitive.

Figure 6. 'Sustainable Value-Add' to Company and Society



Sustainable Value-Add = Revenue – Costs of Natural Capital
Costs of energy and utilities, materials, and land (if significant) are used as proxies for the costs of natural capital. The Value Add represents contributions to the development of financial / built capital and human / social capital.

© BRIDGES to Sustainability, Golder Associates Inc.

Setting Targets

Targets are performance goals that are relevant to the organization's key objectives. An organization can set environmental and social targets in much the same way that it sets financial targets. To contribute to performance improvement, a target should be:

- **S**pecific - focused on a specific objective and the outcome that is expected
- **M**easurable - through measurements defined in the metrics
- **A**chievable - knowledge, tools and resources should be available to achieve targets
- **R**ealistic - with actions the organization can take to achieve targets
- **T**ime-specific - with timeline attached to a target

Targets meeting the above criteria are commonly known as the 'SMART' targets, reflecting the initial letters of the criteria. Targets can be incremental or stretch.

Incremental targets are set to achieve gradual change and usually to meet a threshold essential to remaining operational. ***Stretch targets*** are more revolutionary targets. A stretch target is set with less understanding of how it will be met. Stretch targets are meant to spark organizational change by stimulating innovation, encouraging employees to push traditional boundaries and challenging the current ways of doing business. Thus, they are usually set for a longer term, allowing time for changes and innovation. Nevertheless, setting stretch targets is a challenging task. Decisions must be made as to how far to stretch a target, while keeping it credible.

DuPont's case example summarizes its considerations and process for developing stretch targets. Southern Company's zero injury target, (on page 45) is an example of a stretch target designed to change an organization's mindset.

DuPont

Setting 'Achievably Stretched' Targets

Corporate environmental and sustainability goals at DuPont are set on a nine-to-ten-year timeframe. This longer period allows the corporation to set more challenging (i.e., 'stretched') goals and sufficient time to innovate and find creative solutions that are better for the business as well as the environment.

After issues are identified and prioritized, the following generic process is used to set the corporate goals:

- develop a baseline on where the company currently stands on the issues
- determine what the company intends to do about the issues
- estimate the levels of improvement that can be reasonably expected based on existing technologies, current Research & Development efforts and anticipated changes in the marketplace
- decide on specific targets that can sufficiently challenge the company

Ultimately, setting targets is a process that requires not only quantitative and qualitative analysis, but also a strong leadership role. In addition to determining targets that will adequately challenge the company, leadership must ensure that the targets set are feasible, lest the company's credibility may be harmed. Furthermore, leadership must ensure that the targets will benefit the environment and society while also making economic sense for the company.

Internal metrics, or 'milestones', are developed to benchmark the company's progress toward the goals. To assure continuous improvement, more immediate two-to-three-year targets are set and managed at DuPont's individual business units.

To "nearly double revenues from non-depletable resources to at least $8 billion by 2015" is an example of a longer-term goal set at DuPont. Such goals are valuable in stimulating new ideas, especially in Research & Development and ways to market products and services. They challenge employees to create a more sustainable company that will provide measurable societal value.

4. Define Key Performance Indicators and Metrics

Southern Company

'Target Zero' to Change Employees' Mindsets

Southern Company is an overall leader in the United States power industry. Yet, collective 2002-2004 results for all utilities in the company's region placed its safety performance in the third quartile. This was attributable to a culture that believed incidents were unavoidable and acceptable. To achieve world class safety performance that the company desires, this mindset had to change.

Southern Company historically has been effective in accomplishing corporate goals that it sets for itself. Nevertheless, past safety goals have not brought the excellence expected of a leadership company. Thus, effective in 2005, Southern Company set a new safety goal – 'Target Zero' – to achieve zero injuries every day on every job.

One may question whether a zero goal is realistic. The key, however, is to embed into the organization the beliefs, expectations and performance standards inherent in 'Target Zero.' A set of principles recently adopted by the company's Central Safety Committee clarifies three values critical for the company's success in achieving the goal:

- 'Believe it!' – employees must firmly believe that all injuries and occupational illnesses are preventable and every task can be planned and completed safely
- 'Expect it!' – employees must understand that working safely is a condition for employment; and managers, supervisors and individuals are held accountable for unsafe behaviors and conditions
- 'Live it!' – employees must commit to health and safety rules and to continuous improvement; and leaders must recognize and reward successes

A culture will change only with time. Management is first responsible for demonstrating the change and creating the environment for safety excellence. There are currently organizations within Southern Company that are becoming world class performers. That should become the new norm for safety. The results so far are encouraging. In the first year of implementation, Southern Company reduced recordable injuries by 25 percent and lost work time injuries by 40 percent.

Build Metrics and Set Targets – Worksheet 4c

Worksheet 4c (on page 46) provides a template to summarize the set of metrics that support the KPIs and includes: the formula for each metric, the protocol, i.e., procedure for measuring and calculating the metric and any assumptions that go into the calculation.

The Need for Complementary Metrics

In addition to the strategic metrics that directly reflect the KPIs, additional metrics can be developed to address specific needs. These metrics are complementary to the critical few measurements and can include metrics that:

- emphasize certain components of the strategic metrics, e.g., mass of toxic raw materials emphasizes an element of an overall material consumption metric
- include components not accounted for in the strategic metrics, e.g., transportation energy metric complements an energy metric for the company's operations
- provide additional insights to the strategic metrics, e.g., toxicity rating complements the total mass of toxics released
- support the strategic metrics' implementation and evaluation, e.g., number of people who received metrics and best-practice trainings

WORKSHEET 4c: BUILD METRICS AND SET TARGETS *(XYZ Nutritional Beverage Example)*		
Material Issue(s) Material issue(s) addressed by key objective	GHG emissions, energy use and use of alternative energy	
Key Objective A selected key objective	Reduce GHG emissions along value chain	
KPIs Description of the measure(s) of performance toward a key objective(s)	GHG emissions	Energy reduction relative to growth
Use & Users	Diverse users	Diverse users
Metric Definitions Measurements that further define and support the KPI – The 'how-to' of KPI	GHG emissions from relevant value chain stages, expressed per sales revenue	Energy use per sales revenue
Metric Boundary	Farming, transportation, heat & power generation, company's operations	Company's operations and transportation
Reporting Level	Business Unit	Business Unit
Formula	Sum of GHG emissions from each value chain stages (CO_2- equiv/yr) per US$ sales	Annual energy use (MJ/year) per US$ sales
Protocols & Assumptions	• GHG from farming (upstream): Estimate using US average for conventional and organic soy bean farming • GHG from incoming transportation and from distribution: Estimate from logistics data using WBCSD guidelines for calculating GHG from transportation • GHG from heat and power generation: Calculate from electricity and steam use at facilities and GHG emission factors from suppliers • Non-CO_2 GHG emissions converted into CO_2 equivalents following IPCC 20-year horizon • Sales revenue: follow financial accounting calculation	• Energy use calculated as fuel equivalence (in MJ) • For purchased electricity and steam, report as the equivalence of fuel required to generate and deliver the energy • Sales revenue: follow financial accounting calculation
Data Sources	See calculation protocols & assumptions above	Utility data; transportation records GHG emissions along value chain
Frequency	Annual	Quarterly
Target	Reduce 30 percent in 5 years	Reduce 10 percent in 5 years

5. Evaluate and Communicate Metrics

Step 5
How to Assure Effectiveness

STEP 5

Expected Outcomes

- Regular communication and feedback based on performance against targets

Step 5 outlines how to implement the metrics and integrate them into existing information and management systems. This step will confirm that the organization has a systematic approach to measuring key financial and non-financial performance and ensure that the information generated is reliable, complete, comparable and relevant.

The systematic integration of metrics into management and information systems can link strategy and operations to produce insights for decision-makers and translate important information to key stakeholders. Implementation is not only about the mechanics of systems, but also about the effectiveness of communication. The metrics need to be meaningful and understandable to the intended audience.

Integration into Existing Systems

In interviewing U.S. senior executives and major governments, KPMG LLP identified organizational benefits by developing and implementing a measurement system that is aligned with an organization's strategy. This alignment ensures that, whatever metrics an organization uses, they are measuring what is right for them, as well as measuring things the right way. The alignment further translates metrics into specific action steps that generally benefit the organization. The research also found that for measurement to provide a competitive advantage, it needs to be considered as a core organizational process [(14)].

To embed the metrics into existing practices and systems, one needs to:

- identify those accountable for the metrics process
- develop a formal implementation approach
- establish an implementation team
- develop a written procedure or guidance document based on the metrics definition
- integrate into the existing data collection and information management system, whenever possible
- integrate into planning, budgeting or other relevant business processes
- incorporate the use of metrics into job performance evaluation criteria
- establish a process for reviewing, refining and retiring metrics

Data Management

The data needed to calculate the chosen metrics are identified in Step 4, along with consideration of whether the metrics can be calculated or estimated from available data. In integrating the newly developed metrics into existing information system, one needs to ask:

- Where do (or will) the necessary data reside?
- Who is (or will be) responsible for the data?
- How often are the data (or will be) collected?
- How are (or can) the data be verified for accuracy?
- Are the data (or will the data be) comparable across facilities or organizational units for the purpose of the metric?

Obtaining comparable data can be challenging across a large organization. Environmental, health and safety data, in particular, are typically collected to satisfy local regulatory requirements that vary across the different jurisdictions that an organization operates.

Clarity in definitions and boundaries can improve the comparability of metrics. For example, instead of measuring emissions from a uniform set of substances, the metric can be re-defined in terms of substances of concern to the local context.

Use of an automated information management system can effectively reduce the cost and human resources required to support data collection and verification and reporting in a timely manner. One such tool is the ***GEMI HSE Web Depot***, an EHS management information systems tool that can be found at **www.gemi.org/hsewebdepot.org**.

Johnson Controls Inc. provides a case example of a web-based information management system to manage energy and greenhouse gas data.

Integration into Business Processes

Metrics can have multiple uses and users. In implementing the metrics, one needs to ask whether:

- guidelines and instructions associated with the metrics are effectively communicated and are understandable to the users
- users recognize the value of the metrics

Various communication venues, such as an internal company's website and short courses, may be used to disseminate information relating to the metrics and examples of issues and successes in the metrics' implementation.

One should also consider whether the metrics program can be integrated into existing processes, such as Six Sigma as demonstrated in the 3M case example (on page 49).

Communicating Results

Metrics should be communicated in ways that provide meaningful insights and are understandable to decision-makers and other audiences that can benefit from them. To achieve that, consider the:

- level of roll-up and details required for different audiences
- context in which the metrics are presented
- visual depiction of the metric

In addition to composite indices that combine multiple measurements, metrics can be rolled-up or aggregated organizationally and geographically, such as from a business unit to the regional company and then worldwide. Judicious use of such metrics can be effective in communicating the bigger picture, especially to managers looking for a general trend in the organization. However, one must exercise caution in making decisions on such bird's-eye-view metrics. Details need to be available to support the use of composite indices and rolled-up metrics and considered in producing insights from such metrics.

Not all metrics are suitable for roll-up. Local community issues, while important at the corporate level, need to have metrics managed at

Johnson Controls, Inc.

Managing Energy and Greenhouse Gas Data

Energy use management is an important part of reducing greenhouse gases (GHGs) and a core business of Johnson Controls, Inc. To assist businesses in managing energy and GHG data inventory, tracking, and reporting, Johnson Controls, Inc. developed a Utility Bill Payment & Management Reporting System.

The system features accurate, consistent, cost-effective, time saving, credible, flexible and understandable approach for managing the data. These features include:

- Accurate Baseline Development – a modular and scalable system that simplifies calculations at facility and corporate levels and accounts for changing boundaries due to mergers, acquisitions and disposals
- Simplified Emissions Reporting – provides GHG and other emission factors that meet various public reporting requirements for direct and indirect emissions
- Expert Emissions Information Management – manages data in a secure and verifiable Web application that facilitates data entry, automatic calculation of derived data, and analysis of trends, efficiency and cost reduction opportunities

Users, including Johnson Controls, Inc. and its customers, can easily collect emissions data from multiple facilities worldwide and use the system to support sound decision-making.

the local level or they can lose some of their value if rolled- up [15] , e.g., water use in a water-stressed region on the world.

Metrics also need to be communicated in context, relative to:

- historical performance to demonstrate trends
- targets to demonstrate progress
- industry benchmarks to assess competitive standing
- similar organizational units (e.g., similar facilities in a corporation) to identify best practices
- other entities in the value chain to identify where to focus efforts

From the standpoint of visually depicting metrics so that they readily convey information, the use of charts and graphics can effectively reinforce the context and facilitate insights from the metrics. The case example by Johnson & Johnson (on page 50) demonstrates the use of a dashboard to drive actions and communicate progress towards EHS goals.

3M

Moving Toward Sustainability through Six Sigma

Six Sigma not only drives businesses process improvement, but helps move 3M further toward its vision of sustainability. In 2001, 3M embraced Six Sigma to help the company analyze and improve its critical business processes and, over the last few years, Six Sigma has become ingrained in all of 3M's business practices. In particular, it has become an important tool in helping 3M achieve its sustainability goals.

3M has a long-standing commitment to sustainable development through environmental protection, social responsibility and economic progress. More then 30 years ago, 3M's former Vice President of Environmental Engineering and Pollution Control, Dr. Joe Ling, created 3M's Pollution Prevention Pays or 3P program because he believed that, "pollution is waste, and waste today leads to shortages tomorrow." Dr. Ling knew then, what many companies are just beginning to embrace, that pollution prevention is more environmentally effective, technically sound and economical than conventional pollution control equipment.

Six Sigma is, essentially, a continuation of Dr. Ling's philosophy about reducing waste and inefficiency. At 3M, Six Sigma has proved that fundamental process change leads to higher quality output, increased productivity and energized employees. When coupled, pollution prevention and Six Sigma add up to big numbers in cost savings and environmental performance. Both programs strengthen 3M's core business processes and can promote the production of more products and services that use fewer resources and have less environmental impact.

In addition, Six Sigma is helping the company improve its social programs. In 2005, 3M implemented a Six Sigma project to analyze and improve its mechanisms for stakeholder engagement at its U.S. facilities. Six Sigma's tools to drive continuous improvement and better understand the customer, or in this case the stakeholder, were instrumental in allowing 3M to better a process for facilities to anticipate and respond to stakeholder concerns and establish a consistent, documented and proactive system to drive implementation.

Evaluation of Implementation & Communication-Worksheet 4b

The second column of Worksheet 4b (on page 40) provides a checklist of criteria to evaluate the metrics' effectiveness in implementation. In addition, one can revisit Table 2 (on page 35) and assess the effectiveness of metrics implementation and communication for each of the uses and users. Do the metrics support the intended use, and if they are meaningful and understandable to the user, given their perspectives and level of commitment.

If any of the criteria shown in Worksheet 4b cannot be confirmed in the implementation stage, refine the metrics procedure and guidelines or return to the metrics development process in Step 4 to redefine the metrics.

Misuses of Metrics

Metrics and targets can sometimes be used for purposes for which they are not intended. One common misuse is to hold people accountable for metrics not designed for accountability. For example, there is a potential to under report safety statistics if an organization focuses strictly on a reportable number. Metrics developed for internal learning, for instance, are often not appropriate for accountability. Similarly, stretch targets intended to drive innovation should not be associated with penalties for not meeting the targets.

Johnson & Johnson

Communicating Progress toward Goals

Johnson & Johnson recently marked the endpoint of its 2000-2005 Next Generation Goals – a set of management and environmental performance goals implemented across the company's diverse operations in 57 countries.

The Environmental Performance Dashboard (see Figure) was an important tool in communicating the performance goals to employees and managers. It is designed to provide insights on performance and can be used at multiple organizational levels: from a facility, business unit, region, to the worldwide corporation. Progress toward each goal category is displayed as green ('On-Target'), yellow ('Caution'), or red ('Needs Attention') (shown in the accompanying Figure as light, medium, and dark shades, respectively).

Performance is rated using both process metrics (e.g., best practice implementation) and outcome metrics (e.g., percent avoidance in packaging use). Composite indices were also used to combine multiple performance metrics and criteria into single scores. Thresholds were set for the different color-coded ratings. To allow effective roll-up, the criteria may vary from one organizational level to the next. For instance, for the Compliance/Risk Management category, a green On-Target rating for a facility requires ISO 14001 certification, along with a few other process requirements. At the business unit level, however, the same rating requires that a certain percentage of its facilities meet facility-level green rating.

The Environmental Performance Dashboards were posted prominently in all facilities and reviewed semi-annually by Johnson & Johnson's Worldwide Environmental Steering Committee chaired by one of its Vice Chairmen. Similar Dashboards will also be used to track and communicate progress toward the company's new Healthy Planet 2010 Goals.

Johnson & Johnson Environmental Performance Dashboard (Example)

Next Generation Goal	Progress	Reasons / Comments
Compliance / Risk Management		3 Noncompliance events
Mgt Systems / ISO 14001		ISO certified, MAARS rating = 2, MAP not reviewed and signed, 100% of MAP items on time, CCO plan ongoing & on schedule
New Product/Process Review		100% of New Products/Processes/Packaging reviewed using the DfE tool or equivalent.
External Manufacturing		76% EM with EHS contract language, 40% EM audits on schedule, 100% EM audited before use, 0 unacceptable EM, 0 Marginal EM
Energy Use		93% Enhanced Best Practices implemented
Water Use		81% Best practices implemented. Cumulative PBA = 7.15, Water Usage = 502,386 m^3, Avoided = 35,897 m^3
Raw Material Use		Total avoidance: 1,589,456 Total usage: 53,165,445 (PBA: 3.0)
Packaging Use		Packaging avoidance = 726,489 Packaging Use = 13,592,000 (5.4 PBA)
Waste Reduction (NPO)	1 2 3 4	1. Non-haz NPO avoided = 1,275,194 Total Non-haz NPO = 81,095,432 (1.57 PBA) 2. Haz NPO avoided = 14,146,302 Total Haz NPO = 109,443,578 (12.9 PBA) 3. Toxic NPO avoided = 1, 914,000 Total Toxic NPO = 32,403,396 (5.9 PBA) 4. Use of Preferred Waste Mgmt Method = 16% decrease from 2000

Metrics can also be effective for one use but not others. For example, some metrics that rely on forecasted data are effective for planning or engineering decision-making using forecasted data. However, to use them for day-to-day progress tracking may prove ineffective due to poor data quality and reliability. Also, exercise caution with metrics developed for external stakeholders. While transparency typically brings value to the organization, consider potential misuse or misinterpretation by third-parties, which can affect the company's competitiveness or security of its operations.

Retiring Metrics

A metric should be considered for retirement when it no longer serves its purpose. A metric may no longer satisfy the evaluation criteria used in Worksheet 4 due to various factors, including:

- successes - it is no longer meaningful in driving actions as the targets have been achieved; it is no longer transformative as the new behavior becomes the norm
- shortcomings - it results in unintended adverse actions and consequences; it requires greater resources and is less cost-effective than anticipated
- changes in the organization and/or external business environment - it is no longer relevant as the business objectives have changed

If any of these prove true, return to the beginning of the Strategic Metrics Development Process and define a new metric.

Achieving the target and other objectives associated with a metric, however, should not automatically lead to a metric's retirement. To assure continuous improvement and organizational integration, one should consider alternatives such as:

- updating the target
- continuing to monitor the metric
- refining the metric

For example, a metric on the total number of safety incidents may lose its effectiveness in driving improvements as an organization approaches the target of zero incidents. In fact, it may drive the wrong behavior, e.g., moving away from collaborating on solutions to simply blaming the unit where the incident occurred. This signals the need for new metrics. Retiring a metric, however, typically requires management and key stakeholder input, as well as replacement metrics and a transition plan. Metrics on the total number of incidents may be replaced by process metrics reflecting the causes behind the incidents, and thus provide more in-depth analysis. They serve as the new set of metrics on which the organization focuses.

Step 6
How to Assure Effectiveness

6. Evaluate Improvement and Integration

STEP 6
Expected Outcomes

- Assessment of how metrics are driving improvement and organizational alignment and creating business benefits

A focus group of employees from across functional areas is most likely to understand the direct and indirect, tangible and intangible values that are being, and can be, derived.

Step 6 is a critical assessment of the metrics, reflecting on the five previous steps of the tool. While there are vital connections between each of the earlier steps, nowhere will the linkages and the importance of cycling back between previous steps be more evident than in this final step. Here the focus is on how effectively the non-financial metrics:

- inform business decisions, promote learning and leadership and demonstrate the business case
- support the business strategy
- engage employees and external stakeholders
- respond to issues identified by stakeholders
- change the behavior and attitude change of individuals within the organization
- help integrate sustainability thinking into the organization's culture
- reflect business values and yield business benefits

Ultimately this analysis will determine the business value that has been achieved through the metrics development process.

Criteria for Measuring Success

The benefits provided by this tool can be evaluated by a few system metrics that address the following questions.

- Are the aspects, issues and metrics relevant to the business? Are they reflected in business objectives and strategies? Are they incorporated into the programs designed to address them? Is that relevance accepted by key employees? Do you have their buy-in?
- Are the metrics meaningful and useful? Do they support management decision-making? Do they meet the intended uses for the intended users? Do they produce meaningful results for the business?
- Are they transformative? Have they been integrated into the culture of the company? Have they changed mindsets, attitudes and behavior?
- Are they balanced in terms of interrelating environmental, social and economic issues and results? Do they link across functions and from strategy to operations?
- Are they valuable to the organization? Do the metrics drive the right performance and do they result in better business performance? Does this lead to greater business value, tangible and/or intangible?
- Have the metrics been misused or manipulated in unintended ways? Are the metrics accessible to those who intend to use them against the organization?

Determining the degree to which the metrics system meets the criteria (the third column of Worksheet 4b on page 40) should provide insights into where the system will need to be revised. It is the feedback loop to earlier steps and provides an opportunity to reflect on the process and rate the effectiveness of the process and its results.

Case examples by the Occidental Petroleum Corporation (on page 53) and Pfizer Inc. (on page 54) illustrate the evaluation of metric systems to assure their effectiveness and in developing the next generation of metrics.

Occidental Petroleum Corporation

Periodic Review of Metrics and the Management System

The environment, health and safety (EHS) management system of Occidental Petroleum relies upon the use of metrics to pursue continuous performance improvement. Along with ongoing quarterly and annual business unit (BU) reviews of performance, Occidental includes an assessment of metrics in its periodic management systems review, which is conducted at the direction of Occidental's EHS Committee of the Board of Directors.

Known as the Program Review, the evaluation provides an overall opinion about the ability of the BU's management team and system to achieve the performance goals specified in the corporation's EHS policy and procedures. It confirms that BU leaders are integrating EHS considerations into business planning and decision-making processes. Focusing on five key management dimensions – Leadership, Business Integration, Planning, Management Systems and Resources – the Program Review checks for conformance with EHS policy, assesses the impact of personnel changes and reorganizations, determines the status of prior Program Review issues and opportunities for improvement and identifies new opportunities for system enhancement.

The basic tenet of EHS leadership is that executive and line managers are the primary owners of the EHS program and are accountable for EHS compliance and continuous improvement. Year-over-year EHS performance relative to the metrics (lagging and leading) established by the BU provides a key benchmark for progress. Interviews of executive and line management, as well as members of various business unit staff departments, test personal understanding of and accountability for achieving goals. Metrics are also assessed for their relevance (Is there a connection to the goal?), effectiveness (Do they motivate performance?) and the degree to which they are embedded into core business processes. The review confirms that the measures being used contribute to organizational alignment and reinforce the roles of teams and individuals through established recognition and compensation systems.

At the conclusion of the review, the business unit CEO meets with Occidental's EHS Board Committee to discuss the results of the review, including important performance trends / issues and planned actions. Periodic follow-up of planned actions, as well as regular evaluation of performance against metrics and milestones serve to close the management systems loop.

EAG Perspective

How Can One Form an Effective 'Picture' for Different Users of Metrics?

A metrics program is effective when it is relevant to the decision-makers and can help them form an accurate picture of where the organization is and where it is heading. Online at **www.gemi.org/metricsnavigator**, Jim Ritchie-Dunham of the Institute of Strategic Clarity explores ways to communicate effectively with different groups of users, depending on whether they understand sustainability and whether they want to understand it.

Evaluating Effectiveness of the Process

There are numerous ways to evaluate effectiveness of the process:

- **Buy-in** – The process is only as good as the people who are involved, believe it to be, and are satisfied with the results. If there is limited or no buy-in from the stakeholders in the process and/or results, then revisit the metrics. If there is a high degree of buy-in but the results do not reflect it, look at the management system and metrics to determine where the problem lies. For example, stakeholder surveys that rate the effectiveness of the process and satisfaction that the results reflect stakeholder input can be considered.

Pfizer Inc

Evaluating Company-Wide Goals

Pfizer has established company-wide environment, health and safety (EHS) goals on climate change and energy, which are:

- To reduce CO2 emissions by 35 percent per million dollars of sales by 2007 from the baseline year 2000
- To meet 35 percent of its global electricity needs by 2010 through 'clean' energy sources, including co-generation, solar, and wind power

By 2006, Pfizer is close to achieving the 35 percent reduction target for CO2 emissions and is on track towards its clean energy goal. As it approaches the 2007 target year for CO2 emission reduction, Pfizer is evaluating its current goals and targets in preparation for developing the next set.

The company-wide climate change and energy goals were developed to capture existing interests and project ideas by Pfizer staff, reflect management's concern on risks and opportunities and meet external stakeholders' expectations. As a pharmaceutical company, Pfizer's carbon footprint is relatively small and energy remains a small fraction of the cost of goods sold. However, the goals are regarded as important in strengthening the company's reputation as an industry leader.

The goals have been effective in raising awareness on the issues and providing targets in developing improvement projects. Establishing corporate goals helped energy reduction and clean energy projects in competing for capital. While these projects are often disadvantaged due to low return on investment, employees and management have now learned that they involve very low risk and are worth doing.

In evaluating company-wide goals and targets, Pfizer is assessing metrics used for the targets, performance targets to set for the next generation's goals and other issues that may become material and require company-wide EHS goals. This includes revisiting the boundaries and denominators used in the present set of metrics and identifying other possible measures that can better capture what is material internally and externally.

- **Behavior change** – The degree to which the metrics and their underlying logic help inform a relevant, accurate and valuable picture for the employees is important in evaluating the success of the metrics program developed. Successfully informing, and therefore shifting attitudes, mindsets and behaviors from 'those who do not get sustainability and do not want to' to 'those who get sustainability and want to' is critical to the success of any metrics program. Further, assessing the understanding and commitment of both senior leaders and the entire organization is important to the success in building a sustainability culture and the measure of such a culture.

Therefore, periodically surveying the employees to assess how their attitudes and behaviors are changing to recognize the value of sustainability thinking is another way to assess the degree to which the metrics effort is driving change.

- **Organizational integration & change** – How well the issues, objectives and related metrics are integrated into the organization and drive organizational change is another category for evaluation. To assess the transformative nature of the metrics and the process behind them, consider the underlying attributes of a complex learning organization. Does the organization support and reward learning behavior? Does it have an innovation culture? Does it encourage cross-functional teaming and reward leadership in new areas? A self-assessment by employees which rates the company's attributes as a learning organization will shed some light on how well the organization can learn from embracing the challenges inherent in sustainability actions.

- **Metrics results** – The performance of the metrics is also important, although these results will take time to realize. Are the metrics driving the right performance of the system? What are the results relative to the targets? If the results are considered poor, ask: Are the targets reasonable? Are the metrics the right ones? Do they in fact support the uses for which they were developed? Are they being used by the intended parties? Does the management system support the achievement of those targets?
- **Business value** – Lastly, the metrics process and resulting metrics will only be useful if the effort has beneficial and valuable results for the business organization. In the final analysis, what benefits can be derived from an integration of these issues, objectives and metrics into the business? What is the value proposition? A focus group of employees from across functional areas is most likely to understand the direct and indirect, tangible and intangible, values that are being, and can be derived. These people should be asked what underlying value is achieved through adopting sustainability concepts and whether the metrics demonstrate this benefit. This evaluation is the most important, as it is all about people and how they recognize value.

Values that can be considered and perhaps ranked or rated include:

- o ability to assess impacts in terms of tangible and intangible business value
- o identification of cost-saving and revenue-generating opportunities
- o risk reduction
- o informed / improved decision-making
- o mutually beneficial relationships with external stakeholders
- o strengthened license to operate in the community
- o opportunity to build alliances with others (non-government organizations, government agencies, communities, other businesses)
- o entrance to, and expansion of, markets
- o enhanced reputation
- o enhanced ability to attract and retain top talent
- o ability to forecast issues
- o industry leadership and competitive advantage

In Conclusion

Regardless of how this tool is used, it should generate meaningful conclusions. The summary worksheet (on page 5) captures the few critical conclusions from each step and is a logical framework for communicating the 'what' and 'why' of metrics. It can be used to generate a summary for senior management which demonstrates the metrics development process and outcomes, including the business rationale.

This tool does not recommend specific metrics; rather, it provides a framework for identifying and managing environmental, social and economic issues, and a process for developing the critical few metrics which measure performance. The strength of the tool is that it offers a rigorous thought process. The greatest value is in how it helps individuals, groups or entire organizations think through the process - the logical flow of the six steps – with suggested methods to develop or augment in-house approaches. The principal benefit of using the tool is to advance business performance through the development and use of non-financial measurements.

EAG Perspective

What are the Characteristics of a Learning Organization?

A learning organization is one that is able to change its behaviors and mindsets as a result of experience. Such an organization allows individuals to thrive and engage in legitimate explorations of the space of possibilities and is able to adapt to external changes. A fuller description of the characteristics of a learning organization, as summarized by Eve Mittleton-Kelly of London School of Economics and the Society of Organizational Learning – UK, can be found online at **www.gemi.org/metricsnavigator**.

EAG Perspective

Do Your Metrics Drive Innovation?

The need for strategic metrics cannot be understated, for they ultimately help determine where investments are made and what the overall strategic direction of the firm is going to be in a very dynamic marketplace. Mark Milstein of Center for Sustainable Global Enterprise, challenges organizations to answer, "Do your metrics match your stated intentions to get beyond incremental innovation?" online at **www.gemi.org/metricsnavigator**.

Glossary

Glossary

Consequence Metrics – reflect the consequences or effects on the broader system of the intended outcomes.

Corporate Social Responsibility (CSR) – is a commitment to uphold human rights, behave according to accepted ethical standards and contribute to socio-economic development and quality of life. (16)

Incremental Targets – are set to achieve gradual change.

Intangibles – are non-monetary assets, including people, ideas, networks and processes, which are not traditionally accounted for on the balance sheet.

Key Performance Indicator (KPI) – is an indicator of performance toward a key objective(s), i.e., what to measure.

Lagging Metrics – is a measure which reflects past outcomes of performance.

Leading Metrics – is a predictive measure of anticipated performance that can be observed prior to the period of performance.

Materiality – is defined as the relevance and substantiality of an issue to the organization.

Metric – is a quantitative measure, i.e., what to measure. While KPIs are strategic metrics that must be tied to a key objective and a target, a metric is a number which is given meaning in the context of the KPI.

Outcome Metrics – are measurements of results.

Process Metrics – measure the actions or processes that drive the intended outcomes, i.e., the causes, and are usually tied to the action plans put in place to achieve targets.

Specificity – refers to the lowest level of the organization to which the metric is reported.

Stretch Targets – are more revolutionary targets. A stretch target is set with less understanding of how it will be met.

Targets – are quantifiable performance goals that are relevant to the organization's objectives and derived from its KPI's. A target is expressed as a tangible measurable objective, against which actual achievement can be compared. (17)

References

1. A.L. White, "Fade, Integrate or Transform? The Future of CSR," Business for Social Responsibility (BSR) Report, August 2005 (**http://www.bsr.org/CSRResources**)

2. FASB Statement of Financial Accounting Concepts 2 (http://www.fasb.org/st/); SEC Staff Accounting Bulletin (SAB) Number 99 on Materiality (**http://sec.gov/interps/account/sab99.htm**)

3. SustainAbility Issue Brief #6 "Materiality," March 2004 (**http://www.sustainability.com/insight/issue-brief.asp?id=65**); Nike FY04 Corporate Responsibility Report; Ford Motor Company Sustainability Report 2004/05

4. GEMI Transparency: A Path to Public Trust (**http://www.gemi.org**); UNEP Stakeholder Engagement Manual (**http://www.uneptie.org/outreach**)

5. AA1000 standards (**http://www.accountability21.net/aa1000**)

6. ISO 14001 standard, Section 3.12 (**http://www.iso.org/iso/en/prods-services/otherpubs/iso14000**)

7. KPMG, "Achieving Measurable Performance Improvement in a Changing World: The Search for New Insights," 2004 (**http://www.kpmg.com.au/aci/docs/measure-performance.pdf**)

8. Ibid.

9. Ibid.

10. B. Beloff, "Planning for Sustainability," in Transforming Sustainability Strategy into Action: The Chemical Industry, B. Beloff, M. Lines, and D. Tanzil (eds.), John Wiley & Sons, Hoboken, NJ, 2005

11. WCED, Our Common Future (1987), Oxford: Oxford University Press. ISBN 0-19-282080-X

12. T.A. Kochan and S.A. Rubenstein, "Toward a Stakeholder Theory of the Firm: The Saturn Partnership," Organizational Science, 11(4):367-86, 2000.

13. Adapted from presentation by Barbara Winter-Watson of ERM to the GEMI Metrics Workgroup, September 21, 2004

14. See footnote 8

15. Presentation by Patrice Flynn at the GEMI Metrics Workgroup External Advisory Group meeting, March 1, 2006

16. GEMI Forging New Links: Enhancing Supply Chain Value through Environmental Excellence 2004

17. Serving the American Public: Best Practices in Performance Measurement. National Performance Review: Benchmarking Report. June 1997.

Global Environmental Management Initiative
1155 15th Street, NW, Suite 500
Washington, DC 20005
Tel. 202-296-7449
www.gemi.org

Printed with 100% soy-based inks on recycled paper
(25% post-consumer waste content and 50% total recycled fiber)