empowering
green
initiatives with IT

A Strategy and Implementation Guide

Empowering Green Initiatives with IT

A STRATEGY AND IMPLEMENTATION GUIDE

Carl H. Speshock

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Preface

Green initiatives to achieve environmental sustainability have become mainstream topics of discussion in the business, consumer, and government sectors. There are many contributing factors, some with more visibility and emphasis than others. One factor is that world and political leaders have increased their participation and involvement in global warming projects and regulations. This has created demand for environmentally sustainable policies to be strategized and Green initiatives to be planned, developed, and implemented. Organizations need to shift to a more customer-oriented focus to increase their competitiveness, comply with governmental regulations, decrease operational costs, and project themselves as being more environmentally friendly and socially responsible besides satisfying consumer demands by being more eco-friendly.

Furthermore, it is becoming more necessary for businesses and organizations to implement Green initiatives due to the increases in demand for energy sources, global warming effects, customer pressure, and the need to reduce carbon footprints and emissions. According to the U.S. Environmental Protection Agency, market trends suggest that the demand for energy resources will rise dramatically over the next 25 years. Global demand for all energy sources is forecast to grow by 57%; U.S. demand for all types of energy is expected to increase by 31% by 2030; electricity demand in the United States will grow by at least 40% by 2032; and new power generation equal to nearly 300 1000-megawatt power plants will be needed to meet electricity demand by 2030.[1]

The next graph displays U.S. energy consumption by different fuel types with current and projected usages.[2] This graph allows for comparison of Green and carbon-emitting energy sources, as well as their projected consumption values over the next few decades. Much needs to be done to alter the consumption values more in favor of Green energy sources.
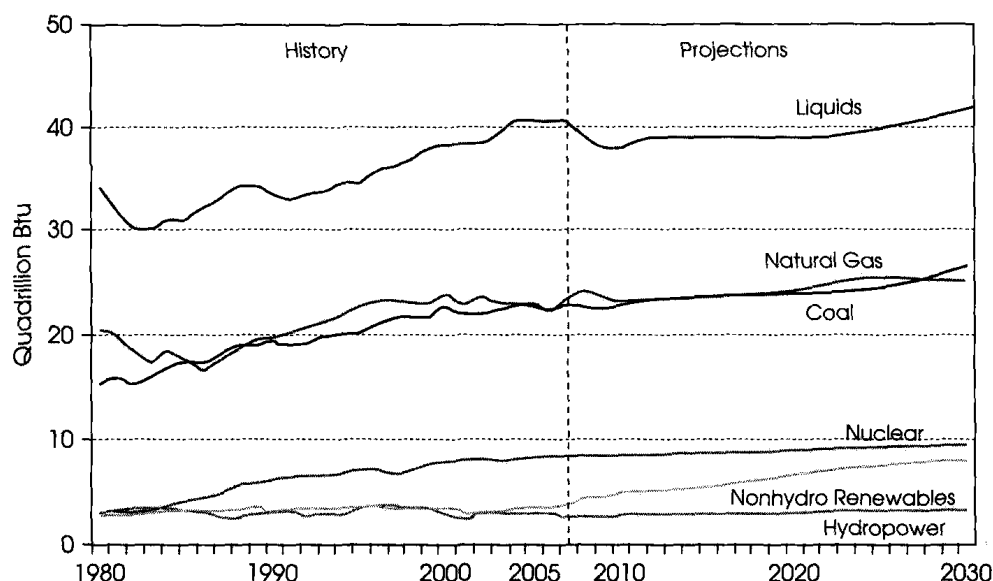
U.S. Energy Consumption by Fuel (1980-2030)
Source: United States Department of Energy, Energy Information Administration.

What does this all mean for businesses? If demand outstrips supply, as was the case in 2008 across the globe, energy prices can rise to record levels, thus substantially impacting business activities. This could lead to reduced profits due to high operating costs, decline of sales of energy-using products and services, loss of competitiveness, market reductions and disruptions due to reduction in demand and supply chain instabilities, and most noticeably a recession of great magnitude and length.

Thus, it is in the best interest of an organization to reduce its energy needs and shift to using energy from renewable energy sources. This could be one goal of the organization's overall environmentally sustainable policy and strategy. Doing this will require the assistance of as many of the organization's resources as possible to maximize the value and potential of Green-related initiatives. One such organizational resource is the information technology (IT) department.

Green initiative efforts with the IT department build on the strategic IT-business relationship that should exist within organizations. This relationship has a mission to strategically enhance an organization's profitability, productivity, efficiency, competitiveness,

and compliance, and positively affect many other strategic goals. The IT department brings to the relationship resources and knowledge; thus it can contribute capabilities and functionality to assist an organization with its Green initiatives. Furthermore, many Green initiatives require computer and network technology, application software, Web sites, and the like—the purview of the IT department.

In a U.S.-based study AMR Research conducted in April 2006,[3] environmental initiatives played second fiddle to social programs such as education outreach, scholarships, and volunteerism. European research, however, yielded quite different results. IT-related spending on environmental initiatives is higher than previously thought. Results of an AMR Research survey of 200 European companies across the United Kingdom, Germany, the Netherlands, and Spain identify that the total technology-related spending on environmental initiatives would exceed 21% of total IT spending in 2007 (once personnel, auditing, and compliance costs are included). Spending is expected to increase dramatically in coming years as increasing numbers of companies seek to ensure that their supply partners (and even customers) conform to modern thinking

Q. Which of the following technology applications/components do you consider to be or will be the most useful in your efforts to manage your environmental initiatives?

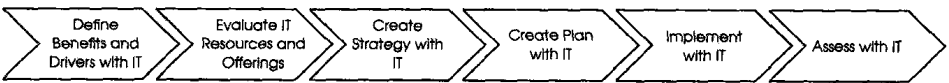| Category	Percentage
Supply Chain Management	16%
ERP	13%
Compliance Management	13%
Financials	10%
Manufacturing/Production Operations	9%
Master Data Management	6%
Desktop Productivity	6%
MRO	5%
Portal Frameworks	4%
Mobile/Remote Pervasive Infrastructure	4%
HCM	3%
BI/Analytics	3%
Supply Chain Execution	2%
Custom/Legacy	2%
EAI	1%
MES	1%
Other	3%

20%
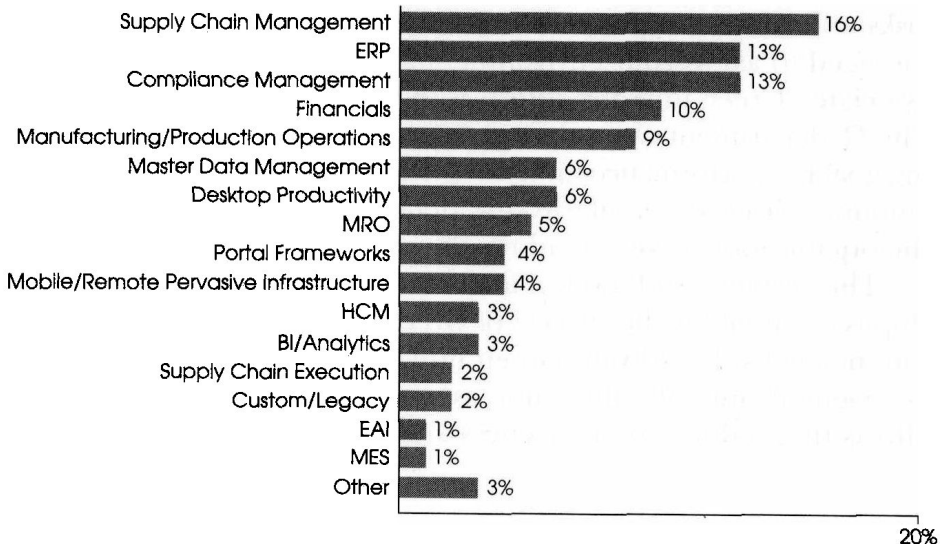
Percentage of responses, n=191

Technologies for Environmental Initiatives—Percentage of IT Budget
Source: AMR Research, 2006.

regarding sustainability, boycotting those that ignore the issue. Environmental initiatives are also becoming a board-driven issue, having languished at an operational level for too long. As shown in the previous graphic, survey respondents found that specific technologies were beneficial in assisting their organization's environmental initiatives.

Green initiatives with the IT department can be viewed in stages. The next graphic shows the six stages that can benefit the utilization and integration of the IT department into Green initiatives that will assist an organization in achieving their overall environmentally sustainable goals. The six stages reflect the establishment of having benefits and drivers defined that reflect positive mentions of IT department involvement in Green initiatives. From here, the organizations will do a deep dive into the many human and technical resources and IT offerings that can contribute to the Green initiatives. The next two stages create the strategy and plan using disciplined approaches and concepts that are backed up by standards, best practices, software tools, and regulatory compliance requirements. The organization implements the plan by taking the environmentally sustainable goals, objectives, and their associated actions and creates Green initiative projects that will assign resources, offerings, funding, timelines, and much more to complete tasks and fulfill the project's objectives. Wrapping up the stages is the need to assess your environmentally sustainable goals and their associated Green initiative efforts with the aid of the IT department. The IT department can assist with monitoring, reporting, and assessing goal key performance indicators (KPIs), statuses, risks, and budget amounts with the granularity and details needed for each aspect of the organization's assessment needs.

The strength and level of alignment of the IT-business relationship is essential for the success of Green initiatives. Strategic organizational goals should view Green initiatives with the IT department as essential and of value, not as nonproductive overhead costs, efforts that reduce competiveness and profitability; rather they are

| Define Benefits and Drivers with IT | Evaluate IT Resources and Offerings | Create Strategy with IT | Create Plan with IT | Implement with IT | Assess with IT |

Green Initiative Stages with the IT Department

the opposite. Forces outside the organization demand and require that it produce Greener products and services and reduce its operational carbon footprint; here Green initiatives with the IT department become part of an organization's strategic goals. Thus, the IT department offerings are incorporated into the efforts through the strategic IT-business relationship. One such example is related to energy efficiency becoming more of a corporate initiative; IT departments likely will be heavily involved in leading enterprise initiatives to improve energy use while reducing the corporate carbon footprint. Businesses that sell Green technologies and services (i.e., solar and wind energy systems, fuel cells, data center cooling, and power systems) would utilize IT department offerings in a manner directly related to the engineering, manufacture, and sale of these product and service offering to Green consumers. As mentioned throughout this book, you don't have to be a Green technology manufacturer or service business to benefit from IT department offerings to assist with specific Green initiatives.

The benefits of integrating the IT department with an organization's Green initiatives are straightforward and obvious. Enterprise operations and technology implementations of many IT departments span the entire corporation and can create cross-functional relationships. IT projects also interface with many different business units and have global interactions and experiences. IT operations typically interact globally with many employees through the IT department's help desk. These are examples of why there should be no doubt in utilizing the IT department with your organization's Green initiatives. The benefits can be from the IT department's integration with many organizational units and possessing deep business process interaction and organizational interconnectivity experiences.

How to Use This Book

This book focuses on the benefits to be gained by strategizing, planning, and implementing Green initiatives with the IT department. Furthermore, it offers insight into assessing Green IT initiatives via the use of business intelligence dashboards and Balanced Scorecards that can assist organizations to analyze KPIs related to their Green initiative projects and efforts.

This book is written as a guidebook for both nontechnical and technical persons who may or may not be in the IT field. The

audience includes chief executives, IT executives and management, business and IT students, IT architects, project managers, business planners and strategists, environmental strategists, environmental regulators, and many more. The book discusses Green initiative efforts that assist with an organization's overall environmental sustainability policy and goals that relate to the private and public sectors, as well as with those in academia.

Those benefiting from this book could be performing research, strategizing Green initiatives of strategic value, and/or beginning or well into a Green initiative planning, strategy, and/or implementation effort. The book offers something to all who are influenced or participating at some level with Green initiatives.

Chapter Organization

The book is broken down into chapters and appendixes that group and relate information that is in alignment with Green initiative stages with the integration of the IT department shown in the previous graphic. The appendixes are resources that offer templates for guidance in your organization's Green initiative efforts.

Chapter 1: Green Initiative Drivers and Benefits with IT highlights the drivers that lead organizations to pursue Green initiative projects. These drivers are a culmination of internal and external forces. The mutual benefits to be gained with the Green initiative–IT relationship are discussed. The IT-business relationship is of strategic value because of the capabilities and functionality that the IT department has that can assist an organization with its Green initiatives. Furthermore, the IT department can satisfy the needs of many Green initiatives for computer and network technology, application software, Web sites, and so on. It is the strength and the level of alignment of the IT-business relationship that is essential for the success of Green initiatives.

Chapter 2: IT Resources and Offerings to Assist Green Initiatives discusses in detail the IT department's resources and offerings. These can include human and technical resources, application development, IT research, partnerships, and vendors that can assist with Green initiatives. It is here that the reader can visualize much of what is available to Green initiative efforts from the organization's IT department. One such example is with offerings, for

they are categorized into two types: general and specific. General IT department offerings are typical across many organizations and include:

- Previous knowledge and experience in Green initiatives
- Positioned as a strategic partner within organizations
- User and implementer of technology (i.e., network, server, data center, application, etc.)
- Green initiative technology implementers (i.e., video teleconferencing, server and disk storage virtualization, business applications)

IT department offerings that are more specific to assisting with Green initiatives include:

- Green IT advising
- IT data center design and engineering that could assist Green building strategies and reduce an organization's energy consumption
- IT department–created dashboard and Balanced Scorecards with Green-initiative KPIs from IT application development efforts
- Deployment of a third-party custom application from the IT department to specifically support Green initiatives
- IT department–created collaborative portals for Green initiative content and collaboration

Chapter 3: Green Initiative Strategy with IT builds on the strategic IT-business relationship, organizational structure, and strategic planning. It is not a strategy that is to be implemented for one business quarter to affect the bottom line immediately, attract stock purchasers, and then discard. Furthermore, Green initiatives are not to be planned at a department or project level but must be part of an organization's strategic planning and in alignment with its strategic goals. One such strategy concept would be to create organizational changes that consider structure, processes, and funding priorities as they relate to changes in implementing Green initiatives that are of strategic value. A more granular example of an organizational structure change could be the implementation of an executive position on par with CEO, CIO, CTO, and CFO. Doing this would emphasize Green initiatives

at the corporate level and allow for executive interaction for the CIO who represents the IT department.

Strategy mapping is a tool that can be used to assist with this stage. This technique offers a visual representation of the links among the different components of a strategy.

Chapter 4: Green Initiative Planning with IT offers in-depth information on planning concepts and processes that could be utilized to integrate the IT department into the overall environmental sustainability plan in an effective and productive manner. Green initiative planning with the end goal of environmental sustainability for the organization incorporates a long-term strategy that is of strategic business value, has processes and flow, has flexibility, and is dynamic. With the use of the environmental management system (EMS), the planning process framework integrates the IT department in a way that will substantially benefit the planning phase and processes with the department's resources and offerings.

Chapter 5: Green Initiative Implementation with IT offers insight into the process of implementing Green initiatives with IT departmental resources and offerings during project definition and implementation. The chapter discusses the integration of IT resources and offerings at certain stages of the implementation process and how the IT department can be effectively engaged within the implementation process. Team unity and collaboration among IT and non-IT personnel throughout implementation is mentioned as well.

The continued use of the EMS during the implementation stage and the introduction of project management will be presented to be exposed to effective and disciplined project management concepts that will effectively assist in the implementation of Green initiative projects. Productive and effective project management is the key to successful implementation of the Green initiative actions necessary to meet environmentally sustainable goals and objectives.

Chapter 6: Green Initiative Assessment with IT offers insight into how to assess your Green initiatives with respect to the overall environmentally sustainable goals and strategic goals of enhancing social responsibility, customer satisfaction, and competiveness with the aid of IT technology and offerings. Such offerings include the use of Balanced Scorecards displaying KPIs and dashboards, reports, data mining tools, and much more.

Assessment will be led by the organization's assessment team comprised of representatives from within its business functions and

specific to the process of assessing the completion of Green-related objectives in relation to meeting the overall strategic business goal of environmental sustainability. The assessment process will include audits, research, stakeholder and customer feedback surveys, and other tools and processes that will provide insight into analyzing the return on investment of the organization's Green initiative efforts.

The appendixes include resource links and listings, Green initiative planning, and an implementation checklist. They can be used to complement and assist an organization's Green initiative efforts by offering sample templates for reviewing the components of the planning and implementation stages of those efforts. A glossary is also included.

The chapters and appendixes can be read and used in sequence or the reader can jump to a particular point in the book pertinent to needs and desires. The book is in alignment with current and potential efforts of Green initiatives within organizations.

Notes

1. Annual Energy Outlook (DOE/EIA-0383(2007)), "International Energy Outlook 2007"; (DOE/EIA-0484(2007)), "Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2005," April 2007 (EPA 430-R-07-002).
2. Ibid.
3. www.amrresearch.com/Content/View.aspx?pmillid=19941

Contents

Green Initiative Drivers and Benefits with IT

More than ever before, Green initiatives are becoming mainstream topics that are of strategic value for an organization and its customers. For this reason, it is crucial that Green initiatives are strategized in a way that creates benefits across the board. There are governmental, organizational, consumer focused, and ethical drivers that are fueling the Green initiative movement, and these drivers should be strategically evaluated to determine placement in assisting with achieving strategic organizational goals that benefit an organization's profitability, competitiveness, and consumer satisfaction rating.

Green initiatives are not a short-term, low-impact, scratch-the-surface effort. Adopting Green initiatives requires an organization to make long-term substantial changes in strategic thinking, employee and consumer relations, and daily operations. Green initiatives need to have a long-term orientation that does not focus solely on quarterly earnings to please short-term investors. Additionally, a short-term perspective also hinders innovation and research and development, diminishes investment in human capital, encourages financial gymnastics, and discourages leadership.[1]

Furthermore, Green initiatives require an organization to be transparent, socially responsible, ethical, and compliant with striving to increase environmental sustainability. Much planning, dedication, responsibility, and commitment needs to be put forth with Green

initiatives to show both your employees and consumers that your goals and level of commitment are sincere, long term, trusting, and truly environmentally friendly.

Understanding that Green initiatives need to be strategically planned and implemented, an organization will reach out to its strengths and resources to assist the effort. One such valuable resource is the Information Technology (IT) department. The IT resources, both human and technical, along with its experience in working across business functions, can assist substantially in productive and effective planning and implementation of Green initiatives. This fact is substantiated in Figure 1.1, which shows that Green initiatives are a summation of:

Driving Forces + IT Department Offerings + Organizational Strategic
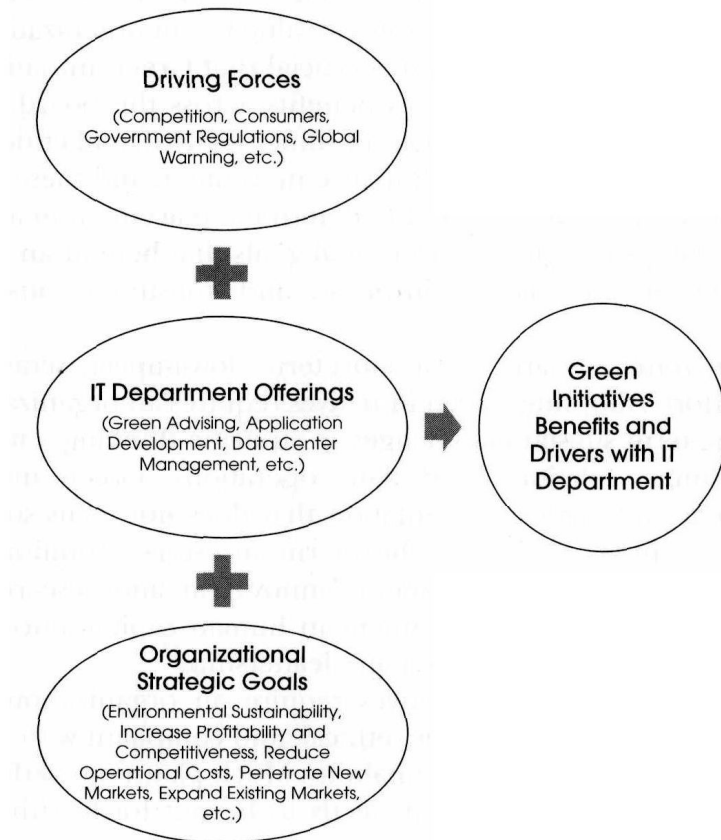   Goals = Green Initiatives Benefits and Drivers with IT Department

Driving Forces

(Competition, Consumers, Government Regulations, Global Warming, etc.)

+

IT Department Offerings

(Green Advising, Application Development, Data Center Management, etc.)

Green Initiatives Benefits and Drivers with IT Department

+

Organizational Strategic Goals

(Environmental Sustainability, Increase Profitability and Competitiveness, Reduce Operational Costs, Penetrate New Markets, Expand Existing Markets, etc.)

Figure 1.1   Components for Strategic Green Initiatives

Drivers for Green Initiatives

Green initiatives are becoming more of a necessity for businesses and organizations due to the increases in demand for energy sources, global warming effects, customer pressure, and the need to reduce carbon footprints and emissions due to governmental regulations and tax credits. According to the United States Environmental Protection Agency (EPA), market trends suggest that the demand for energy resources will rise dramatically over the next 25 years; in fact, global demand for all energy sources is forecast to grow by 57%, U.S. demand for all types of energy is expected to increase by 31% by 2030, 56% of the world's energy use will be in Asia, electricity demand in the United States will grow by at least 40% by 2032, and new power generation equal to nearly 300 1000-megawatt power plants will be needed to meet electricity demand by 2030.[2]

Figure 1.2 shows world energy use by different fuel types with current and projected usages. This graph allows for comparison of Green and carbon-emitting energy sources (coal, oil, etc., as well as their projected consumption values over the next few decades. Much needs to be done to alter the consumption values more in favor of
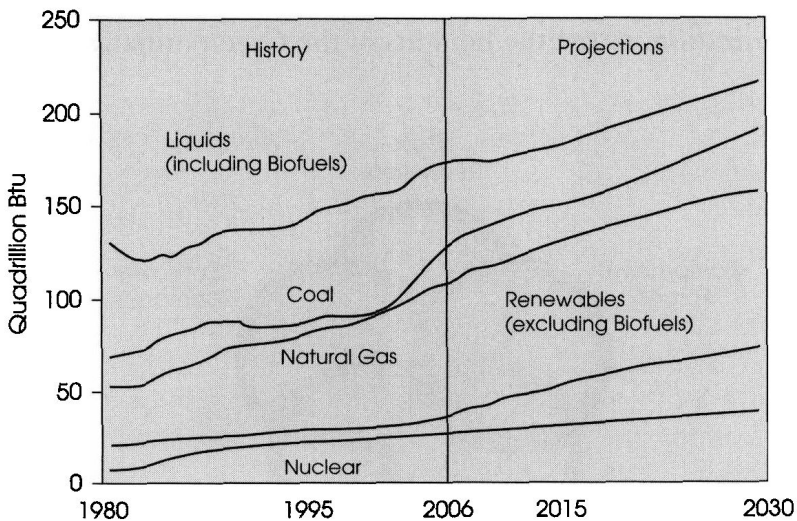
Figure 1.2 World Marketed Energy Use by Fuel Type (1980–2030)
Source: Energy Information Agency, "International Energy Outlook Report" (March 2009)