BETTER GREEN BUSINESS

HANDBOOK FOR ENVIRONMENTALLY RESPONSIBLE AND PROFITABLE BUSINESS PRACTICES

Eric G. Olson, PhD



Product group from well-managed forests, controlled sources and recycled wood or fiber

Cert no. SCS-COC-00648 www.fsc.org © 1996 Forest Stewardship Council

Contents

÷

	Preface	xv
Part I:	Establish a Strategy and Transformation Plan	1
Chapter 1	: Driving Forces and Challenges That Organizations Face .	3
	1.1. Environmental Stewardship Presents New Growth Opportunity	3
	1.2. Leaders Are Already Taking Action	4
	1.3. Driving Forces Are Aligned Like Never Before	6
	1.3.1. Foundational Drivers	
	1.3.2. Impacts from Drivers Lead to Adverse Consequences Without Environmental Stewardship	11
	1.3.3. Risks That Require Mitigation to Manage Drivers and	
•	Capture Business Value	14
	1.4. Develop Green Strategy with Rigor	
Chapter 2	: Formulate Green Strategy to Complement Traditional	
	Strategy	23
	2.1. The Role and Scope of Green Strategy Is Broad	23
	2.2. Foster a Common Culture of Awareness and Action	
	2.2.1. Lead by Example	25
	2.2.2. Install Appropriate Tools	
	2.2.3. Provide Training	
	2.2.4. Measure and Report Performance	
×	2.2.5. Make It Everyone's Responsibility	
	2.2.6. Communicate with the Workforce and Others	
	2.2.7. Manage Cultural Change and Risk	
	2.3. Complement and Strengthen Traditional Business Strategy	
	2.3.1. Brands and Market Positions	
	2.3.3. Channels and Partners	
	2.3.4. Locations and Geographies	
Chapter 3	Green Strategy Supports Operational Improvements	43
I	3.1. Drive Operational Decisions and Initiatives That Improve the	
	Environment	43
	3.1.1. Processes, Supply Chains, and Facilities	
	3.1.2. Organizational Roles, Skills, and Core Competencies	

*	3.1.3. Data Visibility, Reports, Systems, Platforms, Hardware, and Equipment
	3.2. Support Actions with Attractive Value Propositions
	3.3. Steps to Develop a Green Strategy
Chapter 4:	Make Green Strategy Actionable with a Proven Approach59
	4.1. Use Leading Practices for Making Strategic Visions Actionable
	4.2. Formulate Green Strategic Vision and Imperatives
	4.3. Determine Enabling Green Business Capabilities
	4.4. Establish Future-State Organization, Process, and Technology Needs65
	4.5. Describe Current State and Assess Gaps with Future State
	4.6. Define and Prioritize Transformation Initiatives
	4.7. Establish Transformation Roadmap and Future-State Blueprint
	4.8. Manage Transformation, Measure Performance,
	and Sustain Improvements
	4.9. Refresh at Regular Intervals
	4.10. Ien Critical Success Factors for Transformation
Part II: Ar	oply Proven Transformation Methods83
- Chapter 5:	Transformation Methods and Green Sigma
Chapter 5.	5.1. Transformation Methods Facilitate Implementing Initiatives
	5.2. Step 1 Defines Key Performance Indicators
	5.3. Step 2 Establishes a Measurement System
	5.3.1. Direct Measurement of Carbon Emissions
	5.3.2. Indirect Measurement of Carbon Emissions
	5.3.3. Direct and Indirect Measurement of Water and Other Natural Resources
	100
	5.4. Step 3 Deploys a Management Dashboard System
	5.5. Step 4 Improves and Optimizes Processes
	5.5.1. Voice of the Environment (VOE) Value Stream Mapping (VSM)104
	5.5.2. Statistical Process Control (SPC) and Design of Experiments (DOE)104
	5.6. Step 5 Controls Ongoing Performance105
Chamber (1 0 0
Chapter 6:	Applying Green Sigma to Optimize Carbon Emissions107
	6.1. Step 1 Defines Key Performance Indicators
	6.2. Step 2 Establishes a Measurement System
	6.2.1. Measurement System for Eusliness Travel
	6.3. Step 3 Deploys the Management Dashboard System
	on our popping die management paulooura optichin

	6.4. Step 4 Improves and Optimizes Processes			
	6.4.1. Control of AHU Scheduling			
	6.4.2. Adoption of Environmental Control Best Practices			
	6.4.3. Use of Design of Experiments (DOE)115			
	6.5. Step 5 Controls Ongoing Performance116			
	6.5.1. Eliminating Waste116			
	6.5.2. Reducing Variability117			
	6.6. Case Study Summary118			
Part III: Technology Innovations and Solutions				
Chapter 7:	Instrumenting the Planet for an Intelligent,			
	Sustainable World123			
	7.1. Benefits from Instrumenting Our Planet Are Enormous			
	7.2. Growing Demand and Increased Scarcity of Resources			
	7.3. Growth of Real-World Sensing128			
	7.4. Models for Managing Real-World Systems			
	7.5. Applications of Models in an Instrumented World			
	7.5.1. Electric Power Supply Management			
	7.5.2. Water Management			
	7.5.3. Traffic and Public Transportation Management			
	7.5.4. Wind Farm, Solar-Electric, and Solar-Thermal Power			
	Management			
	7.5.5. Intelligent Levee Management			
	7.5.6. Data-Centric Modeling of the Environment			
Chapter 8:	Technology That Supports Instrumenting the Planet141			
	8.1. Challenges on the Path to an Instrumented World			
	.8.1.1. Meeting the Need for Standard Interfaces to Support Mathematical			
	Models			
	8.1.2. Establishing Consistency Among Fragmented Data Sources			
	8.1.3. Sharing Data and Using Distributed Collaboration Tools			
	8.2. Real World–Aware Systems and Interactive Models			
	8.2.1. Edge Domain of a Real World–Aware System			
	8.2.2. Transactional and Business-Processing Domain of a Real World–Aware System145			
	8.2.3. Stream-Processing Domain of a Real World–Aware System			
	8.2.4. Advantages and Illustrations of Real World–Aware Systems			
	8.2.5. The Application Layers and Technical Architecture of			
	Interactive Models			
	8.3. Examples of Instrumented World Systems			
	8.4. Leading Toward the Future in an Instrumented World			

. . .

,

Chapter 9:	Business Considerations for Technology Solutions157
	9.1. Many Solutions Are Available or Developing
	9.2. Macro-Level Environmental Models
	9.3. Transformation Methodologies159
	9.4. Diagnostic Tools
	9.5. Targeted Point Solutions for Alternative Energy Production
	9.5.1. Electricity from Photovoltaic, Solar Cells
	9.5.2. Electricity from Wind Turbines
	9.5.3. Electricity from Water, or Hydropower
	9.5.4. Energy from Biomass165
	9.5.5. Thermal Energy Alternatives to Fossil Fuels
	9.6. Targeted Point Solutions for Efficiency and Resource Management167
	9.6.1. Efficiency from Green Computing Solutions
	9.6.2. Efficiency from Green Product Solutions
	9.6.3. Efficiency from Green Building Construction
	9.6.4. Environmental Stewardship through Recycling and
	Water Reclamation
Part IV: Co	onclusions
Chapter 10:	Critical Trends Shaping the Future175
	10.1. The Imperative for Change Will Continue and Strengthen
	10.2. The Role of Government Will Grow and Align Globally
	10.3. Environmental Intelligence Will Integrate with
	Traditional Operations
	10.4. Businesses That Master Green Strategy Will
	Win in the Marketplace .182
	Endnote References185