

# Chapter 15

## The Human Dimension of Sustainability

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### Introduction

The first part of the chapter introduces the human side of sustainability, provides a template for assessing the current status of your organization, and describes the structure of the rest of the chapter. Key points include:

- The sustainability of something, be it a building, an installation, or a product (collectively referred to hereafter as “technology”) is dependent upon its context.
- A large part of that context is the humans who design, build, use, operate, maintain, and otherwise interact with that technology.
- The most sustainable technology in the world is not sustainable if it’s not built properly, or used properly, or operated properly, or maintained properly, or applied in the wrong context.
- Humans interact with technologies both as individuals and as organizations. Both individuals and organizations as a whole need to be aligned with the goal of sustainability in order for it to be successful.

Subsections include:

- Humans: Confound or Catalyst?
- The Life Cycle of Technology (or all the opportunities for things to go awry)
- Sustainability Situation Assessment
- Quiz: How sustainable is your organization?

### Diffusion of Innovations and Sustainability

The second part of the chapter introduces diffusion of innovation theory as a framework for understanding how sustainability gets adopted in organizations, and provides additional diagnostics for determining your starting point. Key points include:

- Sustainability is treated as an innovation in most organizations choosing to adopt it as a goal.

- Six key factors (attributes of innovation, type of decision, communication channels, nature of the social system, extent of change agents' promotion efforts, and nature of the trigger) influence how rapidly sustainability gets adopted by a population.
- Adoption of sustainability by a population of people typically follows a bell curve, with a hiccup on the upward swing called Moore's chasm.
- Organizations respond differently to change based on both internal and external drivers.
- Determining whether or not sustainability will be smoothly adopted depends on the match between sustainability values and organizational values, attributes of the people promoting sustainability, and attributes of the organization itself.
- Five attributes of sustainability (relative advantage compared to the idea it supercedes, compatibility, complexity, trialability, and observability of effects) can be engineered to increase the ease with which sustainability is diffused throughout the organization.

Subsections include:

- Sustainability as an Innovation
- Quiz: Where is your organization on the adoption curve?
- Roles of the Change Agent
- Quiz: Are you cut out to be a change agent?
- Facilitating Sustainability Adoption
- Quiz: Is your organization ready for sustainability?

## **Barriers and Best Practices: What's going to get in your way, and what you can do about it**

The third part of the chapter provides an overview of the top ten barriers to sustainability encountered in public agencies in general (and military organizations in particular), along with best practices used in those agencies to overcome the barriers. Key points include:

- There are ten commonly-occurring barriers to sustainability implementation that are repeatedly encountered by change agents trying to diffuse sustainability throughout their organizations.

- A broad spectrum of creative best practices have been used successfully to overcome these barriers. Selected case studies may be used to illustrate these barrier breakers (although I don't have any Army examples at the moment).
- Many resources, both internal and external to the organization, can be leveraged to overcome barriers.

Subsections include:

- The Top 10 Barriers to Sustainability in Organizations
- Inspiring Examples of Barrier-Breaking Best Practices
- Resources for Barrier Breaking (may be more appropriate as an appendix)

## **Sustainability Implementation: The Road Forward**

The final part of the chapter provides a template for an action plan to implement sustainability in your organization, along with examples of specific steps taken at Fort Bragg. Key points include:

- There are many different possible starting points for sustainability implementation, each with different implications for how to proceed.
- Several tried and true steps are critical for the change agent to follow in stimulating organizational change for sustainability. Following the “do’s” and avoiding the “don’ts” are key to staying on the path.
- The overall structure of an action plan for sustainability is a hierarchical progression from having a vision that links to your organization’s mission, all the way through developing policy, goals, and objectives; selecting indicators; developing an execution plan; and periodically checking progress.
- Everyone you’ll need to convince brings to the table their own set of motivators, issues, concerns, and other baggage that you’ll need to identify and deal with accordingly. Be sure to identify an appropriate “spin” for your message to each audience, using a language each can understand.
- There are good goals and bad goals. Review your action plan critically to be sure your goals meet the criteria for success.
- Ongoing action and follow-up are essential to maintaining initial momentum.

Subsections include:

- Getting Started: where are you now, and what have you got to work with?

- Steps for an Action Plan for Sustainability
- Sustainability spin-doctoring: The art of massaging the message
- Creating mission-specific goals, objectives, criteria, and execution plans
- Sustaining sustainability: Advice for follow-on and follow-up

## References

Initial suggested references included *Believing Cassandra* and *The Tipping Point*.

### Additional Core References

Anderson, R. (1998). *Mid-course Correction*. Peregrinzilla Press, Atlanta, GA.

The classic on flash-driven organizational change for sustainability, describing Ray Anderson's quest to make Interface a sustainable company.

Barnett, D.L. and Browning, W.D. (1995). *A Primer on Sustainable Building*. Rocky Mountain Institute, Snowmass, CO.

Good, understandable discussion with summary of convincing evidence on why A/E/C companies and owners should go green. Also a good overview of the basics of sustainable design.

Bennett, M. and James, P. (1998). *The Green Bottom Line: Environmental Accounting for Management*. Greenleaf Press, Sheffield, UK.

Compilation of papers describing ways to increase the environmental accuracy of accounting methods.

Carson, P. and Moulden, J. (1991). *Green is Gold: Business talking to Business about the Environmental Revolution*. HarperCollins, Toronto, ON.

Good discussion of environmental trends that affect business and attributes of the green consumer. Presents a framework for developing a corporate environmental strategy. Described as "a practical guide for companies who want to go green."

Clayton, A.M.H. and Radcliffe, N.J. (1996). *Sustainability: A Systems Approach*. Westview Press, Boulder, CO.

Presents sustainability as a function of complex, adaptive systems, and describes its attributes in terms of a number of different disciplines and perspectives. Includes basic systems theory, economics, and assessment and management of sustainability.

Collins, J.C. and Porras, J.I. (1997). *Built to Last: Successful Habits of Visionary Companies (paperback ed.)*. HarperCollins, New York, NY.

Describes the attributes of long lasting, successful companies, based on a comparison study of 36 different US corporations. Very useful information on defining core ideology and values, and transforming your organization into a vehicle for achieving sustainability.

Doob, L.W. (1995). *Sustainers and Sustainability: Attitudes, Attributes, & Actions for Survival*. Praeger Publishing, Westport, CT.

Describes the five basic attributes of sustainable individuals and presents theory on why people who are prone to behave sustainably act the way they do. A useful way to understand how some people are more likely to be sustainable than others.

Hawken, P. (1993). *The Ecology of Commerce*. Harper Press, New York, NY.

Another classic on the need for change in how we do business. Presents ideas for rearranging the commercial system to encourage, not discourage, environmentally friendly behavior by business.

Hawken, P., Lovins, A., and Lovins, L.H. (1999). *Natural Capitalism: Creating the Next Industrial Revolution*. Little, Brown, & Company, Boston, MA. Available online at <http://www.naturalcapitalism.com>

The essential reference describing ways that business must change in order to achieve sustainability. Provides clear, inspiring examples of strategies and technologies that are available off the shelf to make money by being sustainable. Excellent coverage of the new business mindset for sustainability.

Hoffman, A.J. (2000). *Competitive Environmental Strategy: A Guide to the Changing Business Landscape*. Island Press, Washington, DC.

Excellent discussion of the reasons to change the way we do business. Includes information on strategic organizational planning and recognizing the context in which change has to occur.

International Institute for Sustainable Development (IISD): Business and Sustainable Development site. See <http://iisd.ca/business/default.htm>

Provides a definition of sustainable development from a business perspective and includes information on building competitive advantage, increasing market share, increasing shareholder value and other topics. Also includes case studies.

Mendler, S.F. and Odell, W. (2000). *The HOK Guidebook to Sustainable Design*. Wiley & Sons, New York, NY.

A checklist guide and set of case studies on sustainable building design. Excellent reference for ideas on how to increase the sustainability of projects. Includes classification of ideas in terms of owner receptivity.

Natras, B. and Altomare, M. (1999). *The Natural Step for Business: Wealth, Ecology, and the Evolutionary Corporation*. New Society Publishers, Gabriola Island, BC.

Provides an overall framework in terms of the Natural Step for changing business practices to become more sustainable. Includes four detailed case studies of leading international corporations, along with a discussion of the benefits realized by each company.

Pearce, A.R., Walrath, L.L., and Fischer, C.L.J. (2002). *Sustainability Strategy 101: An Organizational Perspective*. Georgia Tech Research Institute course workbook, 8 hour continuing education public course offering, February 19, Atlanta, GA.

This workbook for an eight-hour course includes an overview of the issues, barriers, and strategies for changing your organization to become more sustainable. Includes self-assessment quizzes, a step-by-step process with examples, and a barriers-best practices matrix that leads you directly from the barriers you're likely to face to the best of breed resources available to help you surmount them.

Rogers, E.M. (1995). *Diffusion of Innovations, 4th ed.* Free Press, New York, NY.

This is a classic reference that covers all aspects of innovation theory, including strategies for increasing the rate of adoption of new concepts and technologies by individuals and organizations alike. Highly recommended.

Romm, J.J. (1994). *Lean and Clean Management: How to Boost Profits and Productivity by Reducing Pollution*. Kodansha International, New York, NY.

Presents examples and strategies for making money by reducing pollution (one aspect of sustainability). Examples are from multiple industries.

Romm, J.J. and Browning, W.D. (1995). *Greening the Building and the Bottom Line: Increasing Productivity through Energy-Efficient Design*. Rocky Mountain Institute, Snowmass, CO.

Includes case studies to illustrate the relative importance of people costs in making the decision to build green. Available online at <http://www.getf.org/file/toolmanager/O16F8527.pdf>

### **Additional References**

Chen A. and Vine, E.L. (1998). *A Scoping Study on the Costs of Indoor Air Quality Illnesses: An Insurance Loss Perspective*. Lawrence Berkeley National Laboratory, Environmental Energy Technologies Division, Berkeley, CA. See <http://eetd.lbl.gov/CBS/insurance/LBNL-41919.pdf>.

Heerwagen, J.H. (1999). *Green Buildings, Organizational Success, and Occupant Productivity*. Presentation to the Cost + Value Symposium, University of British Columbia, Vancouver, BC, Nov. 17-18. See also <http://www.johnsoncontrols.com/ifm/research/files/Ppt/Panel3/12Heerwagen.htm/>

Jones-Crabtree, A.J. (1998). *From Technical Decision-makers to Policy-creators: A Model for Sustainability-Driven Organizational Change Applied to Built Facility Maintenance*. Ph.D. Dissertation Draft, School of Civil & Environmental Engineering, Georgia Institute of Technology, Atlanta, GA.

Kinlaw, D. (1993). *Competitive and Green: Sustainable Performance in the Environmental Age*. Pfeiffer & Co., San Diego, CA.

Vanegas, J.A. and Pearce, A.R. (2000). "Drivers for Change: An Organizational Perspective on Sustainable Construction." *Proceedings, Construction Congress VI*, February 20-22, Orlando, FL. Available online at <http://maven.gtri.gatech.edu/sfi/resources/pubpres.html>

Von Weizsacker, E., Lovins, A.B., and Lovins, L.H. (1998). *Factor Four: Doubling Wealth, Halving Resource Use*. EarthScan Publications, London, UK.