



Innovations in Sustainable Enterprise



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Center for Sustainable Enterprise

Kenan Institute of Private Enterprise

Kenan-Flagler Business School

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Welcome to the redesigned Center for Sustainable Enterprise (CSE) newsletter!

We've redesigned our newsletter to be a dynamic resource for sustainable enterprise news, events, articles, and tools—in addition to providing the CSE faculty and program news you are used to receiving. Your comments and feedback are most welcome; please [contact me](#) with thoughts on what you like and on what we can improve.

This newsletter is the first of many initiatives at the CSE. We appreciate the dedicated support of our Advisory Board, faculty, alumni, students, and friends in these endeavors. I look forward to working with you this year!

Katie Kross, Executive Director
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Featured Faculty Research

Design for Sustainability By Dr. A.H. Segars

Over the years, I have had the privilege of working with firms such as Siemens, Apple, IBM, and Xerox on issues associated with creativity, innovation, and commercialization of new products and services. It is always fascinating to work with the leaders of these firms and even more fascinating to glimpse into the future through product ideas that exist now as more concept than finished design.

A particularly difficult issue for any firm is accelerating the cycle of visioning, proof of concept, product design, prototype, and final product development. Even if the firm has correctly placed its R&D investments, excessive delay can undo the most solid collection of new products. Another issue is identifying the systems of raw materials, manufacturing processes, waste treatment, and associated economics that will be required to launch and support a product through its life cycle successfully.

Betting that the ecological, technological, and economic systems of today will be the systems of tomorrow is risky. Fluctuations in the supply and price of resources, costs of maintenance and manufacturing, and costs of disposal may undermine the most carefully considered revenue models. Further, competitive advantage can be lost if the competition discovers more efficient ways to leverage these systems or radically redefines the product such that dependency on non-renewable resources is eliminated. Either of these competitive events can radically change underlying industry economics and place the traditional leaders of industry in precarious positions.

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Dr. Al Segars is Director of the Center for Sustainable Enterprise and the RBC Centura Distinguished Professor of Information and Technology Management.

CSE Program News

The CSE will hold its **Fall Advisory Board meeting** on Oct. 27-28 at the Marriott at Research Triangle Park in Durham, NC. The program will include an evening reception and dinner with keynote speaker, faculty/guest presentations on a variety of sustainable enterprise topics, discussion of current and proposed CSE initiatives, and an optional tour of the U.S. EPA green building campus in Research Triangle Park, in addition to the CSE biannual business meeting.

The **Base of the Pyramid Learning Lab meeting** will be held Sept. 30 at the Kenan Center, preceded by an informal dinner on the evening of Sept. 29.

In connection with the BOP Learning Lab meeting, the **Base of the Pyramid Protocol project planning meeting** will be held on Sept. 29 at the Kenan Center. The BOP Protocol project is a collaborative effort by UNC's Kenan-Flagler Business School, the University of Michigan Business School, Cornell's Johnson School of Management, and the World Resources Institute that seeks to outline a process for BoP markets that will guide organizations' efforts to develop a deep understanding of local conceptions of "the good life" and to co-develop sustainable business models.

The project will kick-off with an intensive, 4-day design workshop in October that will bring together a diverse panel of international thought leaders representing academic, corporate and non-governmental sectors.

If you'd like to unsubscribe to this newsletter or update your contact information, please email [Ruth Tolman](#).

(Design for Sustainability, continued from page 1)

Clearly, developing products that align with systems of renewable resources is key to long-term competitive viability. Also clear is the fact that some firms will not be able to make the necessary transformation to compete in this new marketplace. For these firms, proven processes of product design coupled with legacies of history and success will be formidable obstacles to change as systems of resources and their underlying economics begin to shift.

However, it is also clear that many firms will make the change and become even more successful. For these firms, transition will be facilitated by weaving "design for sustainability" into the fabric of the innovation and commercialization process. In leading firms, some key principles seem obvious in transitioning from traditional design processes to those built on sustainable principles. In the following paragraphs, four main themes that seem to underlie successful innovation are outlined.

Design for Simplicity

Over time, it is easy for a firm to lose sight of how its products/services align with primary and secondary stakeholders. In many instances, firms can "fall in love" with their design processes, products, and channels of distribution. Innovation then becomes a game of incremental improvement rather than breakthrough redesign. Interestingly, the needed breakthrough may be a revolution in "simple" rather than an evolution of more "complex." For example, one of the most promising technologies for submarines in the U.S. Navy is the diesel engine. New innovations in diesel engines make them quiet, efficient, and less dangerous than nuclear-powered submarines. In essence, the Navy may replace the nuclear-powered sub with the sub that the nuclear sub replaced—a diesel-powered sub! Other examples of this principle abound in water treatment technology, power generation, and information technology. In many instances, the most sustainable of innovations are a revolution in simplicity.

Design for Markets of Renewable Resources

A central theme of the sustainability vision is that business models built on assumptions of the Industrial Revolution are not viable. Decreased quantities of non-renewable resources, escalating costs of waste disposal, and economic volatility associated with the growing number of poor and destitute create a very uncertain environment for product innovation. Designing for markets of renewable resources is a critical step in lowering the risk-adverse resource economics and expanding the footprint of a product's reach. Importantly, this is not an isolated activity. To be successful, the firm must view itself as a node in a complex network of business activity. Suppliers, customers, and other business partners must work together with the firm to redefine the supply and demand chain such that flows of resources are renewable.

Design for the Right Problem

One of the great stories of innovation is that of the Wright Brothers. Working with little financial capital, no spare time, and against rivals that were more highly regarded and better financed, Wilbur and Orville changed the world with their invention of the heavier-than-air flying machine. While their rivals framed the problem of flight as that of achieving lift, the Wright brothers defined the problem as one of achieving control. The disparities in design were dramatic. The Wrights created an eloquent machine that utilized rather than fought the wind. Their rivals built bulky machines that were designed to overcome the wind with increased propulsion. In designing for sustainability it is important to define the right problem and to avoid applying traditional design principles to non-traditional problems. This is particularly true in designing solutions for underserved markets. In many instances, it can be a mistake to extrapolate Western design principles to developing economies. It is important to define the problem correctly and then develop appropriate design processes.

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CSE & Sustainability Events

Sept. 29

Base of the Pyramid Protocol
Project Planning Meeting
Kenan Center, Chapel Hill, NC

[more info](#)

Sept. 30

Base of the Pyramid Learning Lab
Meeting
Kenan Center, Chapel Hill, NC

[more info](#)

Oct. 21

Speaker: Jerry Greenfield
Co-Founder, Ben & Jerry's
Kenan-Flagler Business School,
Chapel Hill, NC

[more info](#)

Oct. 26

Speaker: Hernando de Soto
Economist, and
Author of *The Mystery of Capital*
UNC, Chapel Hill, NC

[more info](#)

Oct. 27-28

CSE Advisory Board Meeting
Research Triangle Park, NC

[more info](#)

Oct. 29

Net Impact "Careers in
Sustainable Enterprise" Forum
Kenan Center,
Chapel Hill, NC

for more info, contact [Rebecca Swartz](#)

Nov. 11-14

Net Impact National Conference:
"Business Leaders Building a
Better World"
New York, NY

[more info](#)

Nov. 18

Speaker: Bill Drayton
Founder & CEO, Ashoka
Kenan-Flagler Business School,
Chapel Hill, NC

[more info](#)

Dec. 12-14

Conference: "Eradicating Poverty
through Profit"
WRI

San Francisco, CA

[more info](#)

[link to more events](#)

(*Design for Sustainability*, continued from page 2)

Design for Changing Assumptions

It is very easy to design new products/services under assumptions or rules that no longer exist. For some firms, this is manifest in an attitude that customers or markets are not ready for the new innovation. For other firms, this phenomenon is evident in the incremental nature of their product and market innovations. In either instance, the underlying problem is that firms lose sight of other inventions or shifts in technology, processes, or economics that enable new and better ways to develop products.

For example, new innovations in water treatment technology are now shifting traditional thinking and design about waste gathering and removal. Firms that are unaware of these changes may be designing systems that will be obsolete when they are finally implemented. Clearly, designing for sustainability must involve questioning the assumptions that underlie the structure of current processes. In the extreme sense, a process may never have been truly designed. In more common instances, the process may have been designed around rules that no longer apply. In the successful firms I have studied, innovators look to the past to discover why a process was created and then assess shifts in technological, process, and economic capability to determine how a process should be designed for tomorrow.

Conclusion

The themes outlined above provide a broad overview of successful innovative efforts in achieving alignment between the firm and its context of social, environmental, and financial responsibility. Maximizing profitable opportunity that flows from successful co-dependence is a direct result of applying the right process of design with the right problem. In some instances, this implies that traditional processes and approaches to innovation can lead to wrong conclusions, wrong products, and a lack of alignment between the firm and its context. To be successful, firms of today must focus on how their innovation and design processes align with potential opportunities that lie ahead in the very non-traditional markets of tomorrow.

Notes from the Field: UNC Faculty & Student Projects

The International Association for Management of Technology has just ranked Kenan-Flagler Business School among the **Top 5 global centers for research on Management of Technology**. The rankings are soon to be published in the prestigious *Journal of Product Innovation Management*.

In the AIESEC Online Corporate Social Responsibility (CSR) Case Study Competition, **Karen Seeh** (MBA 2004) won the competition for the "Developing New Business Models" case, which centered on identifying new products and business models for Holcim, one of the world's leading suppliers of cement, aggregates, and concrete. Karen's proposal—to pilot appropriate building materials for housing for Asian's urban poor—won her the opportunity to fly to Hanover, Germany in August to present the case with Holcim at the AIESEC International Congress Sustainability Symposium (more info: www.ic2004.de).

"Exploring Uneasy Learning Alliances between Corporations and Non-Profit Organizations," by professors **Ted London**, **Dennis Rondinelli**, and **Hugh O'Neill** was published in the 2004 Academy of Management Conference Proceedings.

On Oct. 7, professor **Jim Johnson** will be the opening plenary speaker at the North Carolina Smart Growth Alliance's second annual statewide growth summit."

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Sustainability in NC: Events

Sept. 23

UNC Sustainability Coalition Meeting
UNC, Chapel Hill, NC
[more info](#)

Sept. 30-Oct. 1

NC Rural Partners Forum
"A New Day Dawning for North Carolina's Rural Workers, Communities, and Small Businesses"
Raleigh, NC
[more info](#)

Oct. 1-2

Statewide Green Building Tour
Asheville, Boone, Chapel Hill, and Charlotte, NC
[more info](#)

Oct. 5-6

NC Economic Developers Association
2004 Fall Conference
Greensboro, NC
[more info](#)

Oct. 6-8

NC Smart Growth Alliance
Statewide Summit
"Growing Economies with Community Design"
New Bern, NC
[more info](#)

Oct. 15

Center for Transportation & Environment Distinguished Lecture
"Travelling Toward Health: The Marriage of Transportation and Public Health"
Dr. Howard Frumkin of Emory Univ.
NC State University, Raleigh, NC
[more info](#)

Oct. 26

NC Sustainability Awards
Keynote Speaker:
Bill McDonough
Raleigh, NC
[more info](#)

Nov. 10

Renewable Energy Business Development Forum
NC State University, Raleigh, NC
[more info](#)

(Notes from the Field continued from page 3)

The World Business Council for Sustainable Development (WBCSD) has just published **two new microfinance case studies** from the CSE's Base of the Pyramid Learning Lab:

- "[Self-sustaining micro-finance programs to help Brazil's poor: ABN AMRO Real Microcredito](#)," prepared by MBA students **Yerina Mugica** (MBA 2004) and **Frederico Moura** (MBA 2003) under the direction of Professor **Ted London**
- "[A development bank's success with micro-finance: Banco do Nordeste's CrediAmigo](#)," prepared by **Yerina Mugica** under the direction of Professor **Ted London**

The cases can be downloaded by clicking on the links above or by visiting www.wbcd.org.

Sustainability News & Innovations around the World

Highlights of recent SE-related news from around the world...

BusinessWeek's Aug. 16 cover story on "Global Warming" asserts: "By taking action to thwart global warming, companies may not only cut costs but also spark tech innovation." Corporations from utility companies to tech manufacturers are developing business strategies around climate change concerns and finding potential competitive advantages... [link to article](#)

In a public-private partnership between the UNEP and major institutional investors, the **UNEP Finance Initiative** will work to develop a set of globally recognized principles for responsible investment by Sept. 2005... [more info](#)

UPS announced on Aug. 26 that it has deployed its first three large-package delivery vehicles utilizing hydrogen fuel cells for power ([more info](#))... while **Honda** announced on Aug. 24 that it has developed the world's first hydrogen fuel-cell powered scooter ([more info](#))...

The most recent round of grants in **Microsoft's Unlimited Potential initiative** included support to the United Nations High Commissioner for Refugees (UNHCR) to establish three community technology learning centers (CTLCs) in its Dadaab Camp in Kenya, where more than 130,000 refugees have been living for more than 12 years. As part of the Unlimited Potential initiative, the company says it plans to give \$1 billion in support over the next 5 years to provide technology skills for disadvantaged individuals around the world... [more info](#)

"Driving Forces for CSR – Altruism or Economics?" was the theme of the third annual **Asian Forum on Corporate Social Responsibility**, held on Sept. 2-3 in Kuala Lumpur... [more info](#)

According to the *BusinessWeek* commentary, "Why Business Should Make AIDS Its Business" (Aug. 2), some multinationals are finding financial benefits in providing **AIDS treatment for workers** in Africa, citing costs for treatment programs are lower than the costs of worker absenteeism and turnover... [more info](#)

Financial implications for polluters in China... "Environment officials in Beijing have warned Chinese managers that if they fail to meet pollution reduction deadlines, they will be banned from raising stock market capital for three years." ... [more info](#)

Reading & Resources

["Forging New Links: Enhancing Supply Chain Value Through Environmental Excellence"](#)

Downloadable 60-page report and interactive web SCM planning tools aimed at assessing and analyzing how companies can "enhance supply chain value creation by utilizing their environmental health and safety (EHS) capabilities more fully." Produced by the Global Environmental Management Initiative (GEMI).

["Costing Green: A Comprehensive Cost Database and Budgeting Methodology"](#)

This study compares the cost per square foot of green building projects to those of projects without sustainable architecture goals. Findings conclude that the premium for green building construction, if there is one, is small.

["Corporate Social Responsibility Reputation Effects on MBA Job Choice"](#)

This study of MBAs by Stanford professor David Montgomery concludes that more than 90% of the MBAs in the study were willing to forgo some financial benefits to work for an organization with a better reputation for corporate social responsibility and ethics.

[Investor Guide to Climate Risk](#)

This guide, released in July and available online, advises investors on how to address the financial risks and investment opportunities posed by climate risk. Commissioned by CERES and written by the Investor Responsibility Research Center.

[EnviroMapper for Brownfields](#)

Developed by the U.S. EPA, this tool combines interactive maps and aerial photography to search, locate, and map brownfields grants.

["Trends in Sustainability Reporting"](#)

Part 2 of a two-part series from SocialFunds.com, giving an overview of the history of, and trends in, sustainability reporting.