

# Social and Global Implications

Related to Product Design  
and to Engineering Technology

A knowledge of the impact of  
engineering technology solutions...

...in a societal and global context.

# Stakeholders:

- Creditors
- Directors
- Employees
- Government/Gov't Agencies
- Owners (shareholders)
- Suppliers
- Labor unions
- Community from which you draw resources

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- Creditors
- Directors
- Employees
- Government/Gov't Agencies
- Owners (shareholders)
- Suppliers
- Labor unions
- Community from which you draw resources
- Customers

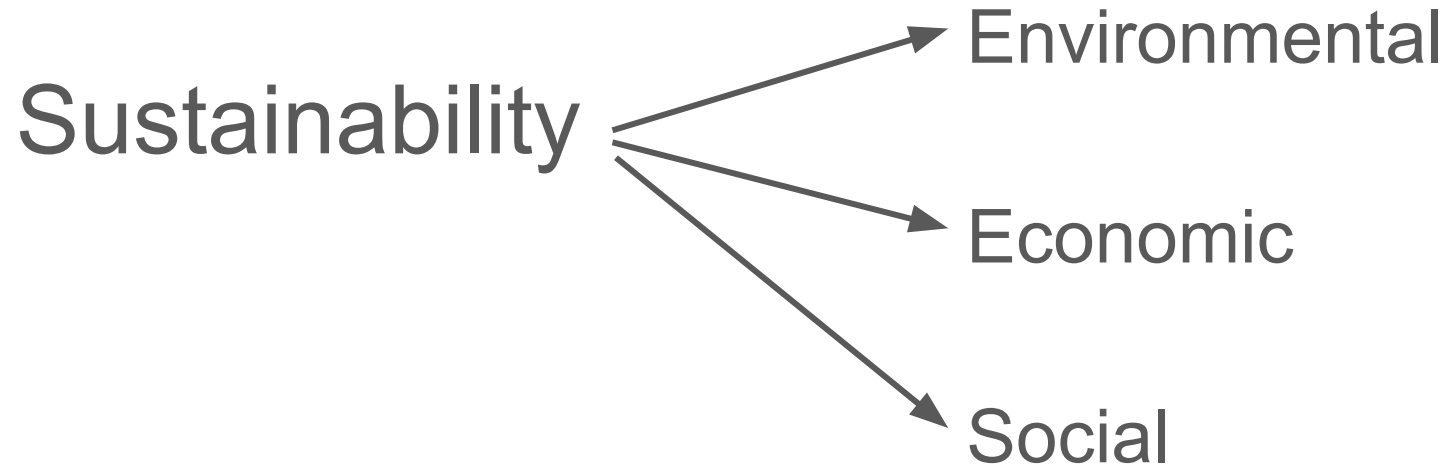
# Corporate Governance

There's the Board,

then there's Management

and then there's the day-to-day operations of the  
company

- ❏ The tension between short-term returns and long-term investments
- ❏ Impact of shareholder activism
- ❏ Shareholder litigation
- ❏ Rebuilding society's trust in the corporation



# RoHS

The “Lead-free” Directive





**Douglas T. Kenrick Ph.D.**

Sex, Murder, and the Meaning of Life

## 7 Ways Facebook Is Bad for Your Mental Health

How staying in touch may be driving you nuts

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Posted Apr 11, 2014



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Post coauthored by Jessica Bodford

Source:

Facebook's meteoric rise in popularity suggests that it offers us something we've always wanted. It allows us to simultaneously keep in touch with long-lost cousin Annabelle in Baton Rouge, best friend Percival from the first grade at St. Mary's School, as well as 491 other assorted friends, relatives, and acquaintances—all at once, instantaneously, no trips to the post office necessary. With the click of a button we can see what Percival's cute little daughter had for breakfast this morning, or what Annabelle's pet dog wore to last year's Halloween party.

But like all benefits in life, Facebook comes with its psychological costs—many of them invisible. Indeed, a recent study found that heavy Facebook users experience decreases in subjective

well-being over time (Kross et al., 2013). Below we review some research suggesting 7 ways that Facebook may be hurting you.

1. **It can make you feel like your life isn't as cool as everyone else's.** Social psychologist Leon Festinger observed that people are naturally inclined to engage in

### Most Popular

1

**World's First Clinical Trial Finds Diet Works for Depression**

2

**How to Stand Firm in a Runaway World**

3

**Nine Signs You're Really an Introvert**

4

**8 Signs You're in a Relationship With a Gaslighter****Feeling Stuck, Lost or**

Policies & Guidelines

Regulations

Laws

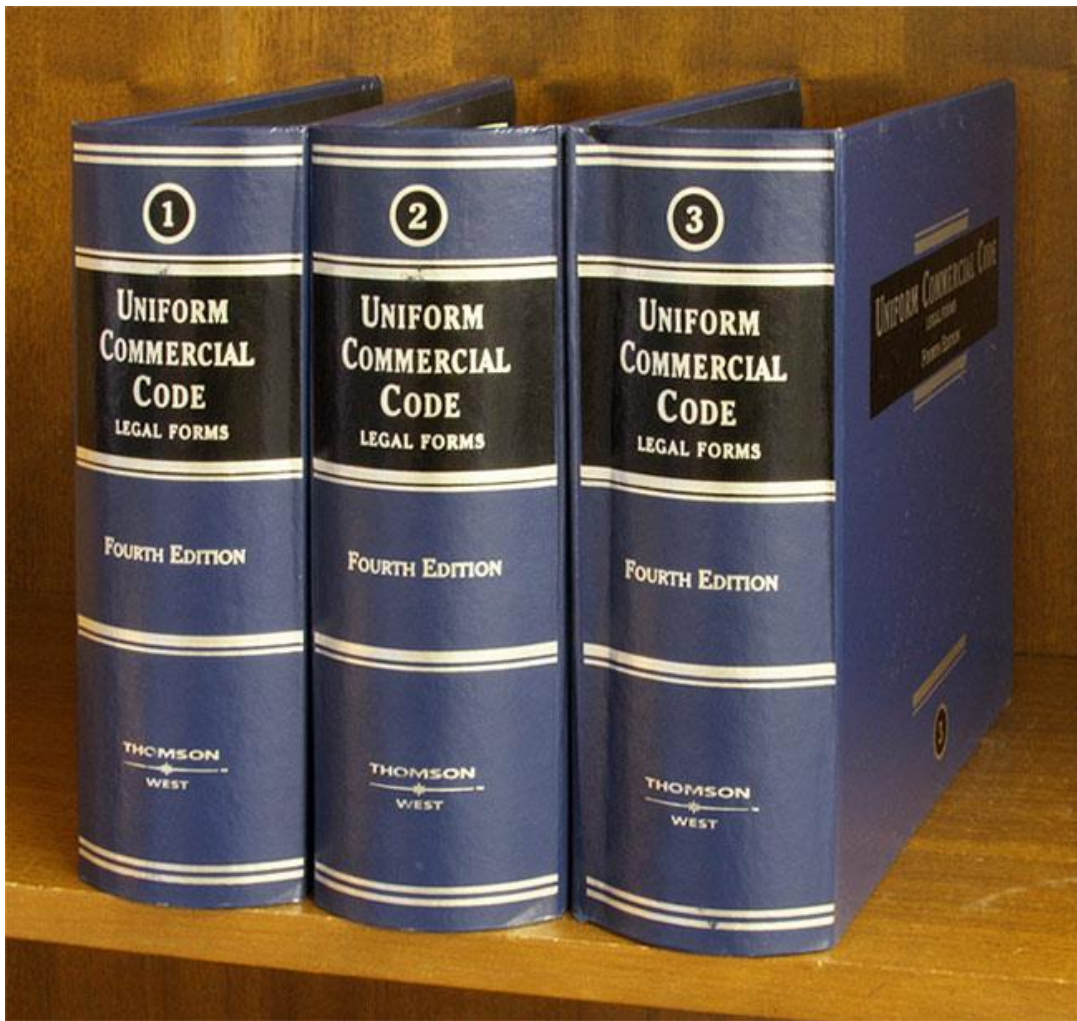
Procedures

Policies & Guidelines

**Regulations**

**Laws**

Procedures



***"After all, the chief business of the American people is business. They are profoundly concerned with producing, buying, selling, investing and prospering in the world. I am strongly of the opinion that the great majority of people will always find these the moving impulses of our life."***

**- President Calvin Coolidge**


Legal landscape

Market landscape

Political landscape

Increasing Complexity

## Cost Sensitivity

	New Ways/Old Problems	New Ways/New Problems	
<b>New Ways</b>	<ul style="list-style-type: none"> <li>• Design for recycling</li> <li>• Retrofits/redesigns</li> <li>• Pulls from a diverse set of tools &amp; experience</li> <li>• More application reuse</li> <li>• Required regression suites</li> <li>• Cost-benefit analysis</li> <li>• Justification/litigation exposure</li> <li>• National defense (terrorism, etc.)</li> <li>• Existing standards do not support desired application</li> <li>• Maximum exposure since solution has to overcome perceived/real expectations. Tolerance for failure low</li> <li>• Driven by "it has to be better"</li> </ul>	<ul style="list-style-type: none"> <li>• Simulation/modeling complex systems</li> <li>• Liability surrounding the digital work-place</li> <li>• Collaboration—this is where the amount/scale of required information is so deep</li> <li>• Have to consider/scan prior art but look at it in a "new light"</li> <li>• Radically innovative applications of new technology, new literature, or no established/formal standards</li> <li>• Keen eye on differentiation and intellectual capital protection (patent or trade secret)</li> <li>• Prerequisite technologies do not exist (measurement, etc.)</li> <li>• Driven by "desire to conquer/necessity"</li> </ul>	Solution Confidence 
<b>Old Ways</b>	<ul style="list-style-type: none"> <li>• Tacit knowledge retention issues</li> <li>• Host of accepted standards and background information</li> <li>• Aging systems/support requirements</li> <li>• Maintenance of existing infrastructure (including nuclear industry, weapons, computer systems, aging support staff)</li> <li>• Driven by "If it ain't broke . . ."</li> </ul>	<ul style="list-style-type: none"> <li>• Formal, in-depth analysis</li> <li>• Broader application of processes</li> <li>• Functional team-based</li> <li>• Object reuse</li> <li>• Standard development process (research → requirements → design → development → test)</li> <li>• Particularly challenging due to breadth of knowledge space</li> <li>• Driven by "Been there, done that"</li> </ul>	
	Old Ways/Old Problems	Old Ways/New Problems	



Customization

Customer-ization

Public  
Policy



Business competitiveness  
Military strength  
Health  
Standard of living  
Environment  
Energy  
Education



Engineering  
Technology

# Synergy between technical and social systems...

- Sustainable transportation systems
- Efficient methods for energy and power delivery
- Comprehensive and secure telecommunications networks
- Cost-effective methods for delivering adequate food and safe drinking water
  
- Coordination between cities, regions and nations
- Leveraging resources from social infrastructures

*In short, design a better world.*