



# THE AMERICAN SOCIETY OF SAFETY ENGINEERS

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## **Environmental Scan**

*External drivers of change that may affect  
ASSE and the Profession*

**Board Advisory Task Force Pre-Read**

January 2012

# What is an environmental scan?

- “Environmental scanning is the acquisition and use of information about events, trends, and relationships in an organization's external environment, the knowledge of which would assist management in planning the organization's future course of action.”
  - Choo, “Environmental scanning as information seeking and organizational learning,” *Information Research*, vol. 7, No. 1, October 2001.

# Factors/Trends/Issues/Forces

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# GLOBAL

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Factors/Trends/Issues/Forces

# Economic: Globalization

- Economic development in emerging economies, advances in telecommunications and transportation – “shrinking” the globe
  - Has brought opportunities to many, but structural shifts have imposed significant costs on many communities and workers
  - Outsourcing/Offshoring
    - IT industry greatest outsourcer of jobs
    - Jobs exported to lower-wage countries
- Manufacturing/services shift in US
  - The service sector accounts for 60%-80% of US employment, and is growing - US manufacturing is shrinking
  - Hour glass economy/shrinking middle class in North America and Europe
- Shift in relative wealth and economic power roughly from West to East

# Economic: Emerging Economic Powers

- Global financial crisis has accelerated shift of economic power to emerging economies
  - Current G7 economies likely to be overtaken by the largest E7 emerging economies by 2020
  - China economy likely to overtake the US economy by 2020, India could do so by 2050
- Challenges and opportunities for businesses in advanced economies
  - Competition from emerging market multinationals will steadily increase with time, including moving up the value chain in manufacturing and financial services
  - Rapid growth and a strengthening middle class in major emerging economies will provide great opportunities for Western companies, though these markets will be highly competitive
- To succeed, organizations must invest in the long term – cannot continue to focus on markets in North America and Western Europe

# Economic: Employment

- Unemployment at 8.5% in December 2011, 8.6% in November 2011
- 45.4% of Americans had jobs in 2010, the lowest rate since 1983
- 48 metropolitan areas in the US will not return to pre-recession employment levels until 2020
- 2010 unemployment for Americans with at least a bachelor's degree highest since 1970
- Manufacturing losses at an all-time high, accelerated by recession
  - Not recovering, even during times of economic growth

# Economic: External Stakeholder Demands

- Driven by stakeholder activism
  - “Public expectations have changed to exhibit less tolerance, heightened moral consciousness, and greater expectations of business behavior.”
  - High level of influence from politically-active and aware Millennial generation
- Emphasis on improved corporate governance
  - Regulations and standards
    - US Foreign Corrupt Practices Act of 1977
    - Sarbanes-Oxley Act of 2002
  - Movement toward integrated reporting
- Increased emphasis on sustainability
  - Corporations around the world are increasingly voluntarily reporting on “corporate sustainability,” “corporate social responsibility,” “corporate environmental performance,” etc.
  - January 2012, over 37,000 sustainability reports on CorporateRegister.com
- Businesses increasing interest in risk assessment/risk management/enterprise risk management in order to boost reputation and minimize the impact of questionable activities on credibility/reliability/trustworthiness



# International Political Trends

- Growing influence of non-state actors on globalization and international affairs
  - NGOs, UN/EU, private membership-only groups, global foundations, terrorist/criminal organizations, private security/military contractors
- Increasing political and economic transparency
  - Corruption indices – general correlation between development/trade part and transparency/corruption
  - Availability of information benefits organizations looking to expand into new markets, share best practices
- “Arc of instability” in countries with rapid growth
  - Youthful age structures – Andean region of Latin America, Sub-Saharan Africa, the Middle East and Caucasus, northern parts of South Asia.
- Politics and Technology
  - E-Activism contributes to a sense of political community
    - Occupy movement
    - Arab Spring
- Increasing political influence of China and India
  - Two highly populous nations seeking rapid development of industrial and professional sectors

# Demographics

- Age
  - Rising life expectancy, later retirement
    - The number of Americans aged 65 and older is projected to be 88.5 million in 2050, more than double the population in 2010.
- Widening generational gap
  - values, attitudes, behaviors, technoliteracy
- Diversity
  - Minorities are 1/3 US population, likely majority by 2040
  - Spanish language increasingly important
  - Increasing proportion of women in the workplace
- Education
  - Given demand, the United States will be short of 20 million college graduates by 2025
  - Record number of 48,802 PhDs awards in 2008, 1/3 of which went to temporary visa holders
  - Computer science and engineering doctorates increased by more than 20% in the past decade

# Technological - Interconnectedness

- Pervasive computing
  - In 2013 there will be over 2 billion PCs in the world
  - There were over 5 billion mobile phone connections worldwide in 2010
  - Mobile/location-based web services mean less dependence on laptops, more on mobile devices
- Information
  - As of 2011, nearly 2.1 billion people use the internet worldwide
  - The amount of information available will continue to increase and be increasingly difficult to manage
  - Internet search will get “smarter”
  - Increase in demand for instant gratification from technology
- Communications
  - New ways to communicate, market
    - Voice-based microblogging (12 million Bubbly users in Asia)
    - Web chat (Tokkster, ChatID for internet shoppers)
- Screen culture
  - “ubiquitous, mobile, cheap, always on; interactive and intuitive; an interface to everything and anything that lies beyond the screen,” trendwatching.com
  - Complemented by gesture, expression, and voice recognition (i.e., Siri)
  - Virtual keyboards

# Technological – Social Networking

- Provides new approaches to engagement, communication, publishing, marketing
  - “Almost everything will be social, including organizational work processes, government policy and service delivery, job search, music, and almost every aspect of media.”
- 80% of Americans aged 18-29 and 50% of all Americans use online social networking
- 1 billion people active on social networks around the world
- Visible reputations - more vulnerable and easier to ruin than ever before

# Education – Technological Innovations

- E-learning accounts for 30% of corporate training and is expected to exceed 50% soon
- E-Books account for 20% of the market
- Every book will be cross-platform and interactive by 2020 (bundled with soundtracks, musical leitmotifs, etc.)
- Increase in self-publishing
  - 15 self-published writers appeared on USA TODAY's Best-Selling Books list in 2011
- By 2015, all learning material in South Korea will be digitized
- China pioneering large-scale Internet education
  - \$1 billion spent to implement distance-learning projects in the rural countryside

# Education - Future of Pedagogy

- Increasingly collaborative
  - Younger generations use technology for socializing and learning, less interested in competition and more interested in working on teams
  - More emphasis on teams activity, less emphasis on the “drill and kill”/ “sage on a stage” model of pedagogy
  - Greater managerial encouragement of freedom among employees to self-organize
- Future curricula will include emphasis on interpersonal skills
  - Social networking has brought about the need for social skills, including self-discipline, responsibility, media literacy, besides academic basics
  - Active learning should be incorporated into education, including class discussion and group exercises allowing students to interact with course materials.
- Increasing hyperconnectivity means notion of class time as separate from non-class time will disappear
  - Self-directed learning will be most important skill of the future
  - Professionals will increasingly weave careers and personal lives into “a blended mosaic of activity”
  - Work and leisure time for both professionals and students will be increasingly interconnected

# Nature of Work – Emerging/Increasing Risks

- New forms of employment contracts and job insecurity
  - Increasing use of contingent labor
    - Low control over work conditions, low level of protection – less likely to be trained in workplace OSH, more likely to be exposed to adverse conditions
- Aging workforce
- Decreasingly competitive workforce
  - Gap in aptitude of US high school and college graduates
    - Poor written/verbal communication skills, outperformed by other countries in math and science
    - Students are not prepared in employment skills such as attendance, timeliness, work ethic
- Intensification of work
  - Higher work load, longer hours, increased work pressure
- Irregular/Flexible work
  - Shift work, overtime, extended hours, compressed work weeks, unpredictable hours, PT work – poor work/life balance
- Employees are taking on broader job responsibilities – must prove value to employers – fewer resources to work with

# Associations

- Decline in traditional voluntarism, no time for associations
  - rise in micro-volunteerism – online/small increments of time dedicated
- Companies are increasingly unwilling to pay for professional development/other association-related expenses
- Innovative revenue streams
  - Holistic approach to fundraising – donors, sponsors, exhibitors, fundraisers
- Education
  - On demand, free, customized
- Delivery of services will be increasingly virtual
- Collaboration – partnerships, co-location
- More nimble, less hierarchical leadership



# OSH INDUSTRY

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Factors/Trends/Issues/Forces

# The OSH Profession

- More diversified OSH practice
  - Expanding scope of responsibilities at the worksite (environmental, health/wellness, etc.)
  - Increased demand for training in other areas - business, industrial security, etc.
- Increasing demand for global practice
- Movement toward professionalism
  - Qualifications
    - Certification – domestically, internationally
      - International Standards of Practice/Certification
        - EUSAFE – EurOSHM
        - Body of Knowledge project
      - Education – more stringent requirements for OSH professionals
    - Licensing in high-hazard areas

# The OSH Profession

- Education
  - Demand for educated SHE professionals is outstripping the supply
    - Greater difficulty for SHE professionals without adequate education to find safety positions
    - Not enough members of the younger generation are pursuing OSH educational/training to fill future workplace needs
  - Lack of qualified safety instructors
  - Higher demand for safety professionals with masters degrees
  - Require greater fluency in international safety topics
  - Innovations in international e-Learning
    - Safety engineering degree – University of Sao Paulo–Polytechnic, Dr. Sergio Medici de Eston
- Encroachment from other professions
  - Professional engineers, environmental professionals

# Competitors

- Changing business models
  - Financial pressures
  - Loss of focus
  - Looking for new markets
  - Driven by technology
  - Moving away from industrial SH&E
  - Restructuring

# Emerging Risks

- Psychological/Psychosocial
  - “The Mental Health Commission of Canada... is developing a new standard for psychological health and safety in the workplace.”
    - Stress, workplace depression, recognizing people in the workplace with mental illness
- Nanoparticles and ultrafine particles
  - Expected to grow rapidly into a global market and employ 10 million workers worldwide by 2014
- Carcinogen exposures
  - Man-made fibers
  - Diesel exhaust
- Risks related to micro-, small, and medium-size enterprises (SMEs)

# Legislative/Regulatory/Standards

- Cyclical change in state versus federal rulemaking
  - Trend is currently moving towards influencing OSH regulations and legislation at the state level
- Movement toward demand for greater cooperation
- Health and wellness
  - With shift from manufacturing to service sector, workplace risks are decreasing, shift toward preventative/wellness measures
- Standards
  - OSH standards increasingly globalized
  - With shift to Europe as de facto OSH standard setter, US OSH professionals must be increasingly knowledgeable of European standards