
Globalization of the Engineering and Construction Industry

Session 4:

20/20: Vision for the
Future of the AEC Field

In 1899,
Charles Duell of the U.S. Patent Office claimed:
“Everything that can be invented, has been invented.”

In 1994,
President Clinton said,
“Tomorrow’s infrastructure must not be built using today’s
technologies.”

Now,
According to Henry Michel,
“When companies downsize, they get rid of R+D.”

Useful Terminologies

- Technical migration
- Mature technology
- Global design centers
- Free goods
- Intellectual property
- GASB 34
- Convergence
- Megaprojects – How do they differ from merely large projects?
- Brownfields
- Cisco model

Past Visions

It's difficult enough to forecast the past, let alone the future.

- Japan would pass the U.S.
- France would pass Germany
- The demise of Ford and IBM, and
- The rise of Nissan and Compaq

Drivers:

Technology

Political

Social

Financial

Environment and

Economic

- How can we balance the needs and growing demands of the BRICS and other developing countries and the global environment?

Any comments or additions to...

- The significant technological and sociopolitical changes during the past 20 years?
- The likely changes over the next 20 years?

The Decline of the Nation State

- Decline in powers of government
- Rise of the private sector
- The open society
- What are the implications?
- How may the current financial troubles impact this trend?

R + D

- What is R+D?
- Is it a positive force? Are you in favor of it?
- How do you define it?
- Is there a difference between successful research and development, and innovation?
- How successful in recent years has Japan been in R+D?

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- Why have some of the most important private research facilities – Lucent (Bell Labs), Xerox, former RCA/Sarnoff Labs – had difficulty developing successful products, and initiatives for the company that sponsored them?
 - Are there other models for research and development? Cisco, for example, tries to buy innovative R+D-oriented companies rather than fund its own R+D
 - Is R+D most likely to achieve success at large or small facilities?

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- Were you surprised at the difficulties in defining R+D and productivity?
 - Why were some periods, countries and cultures so innovative and creative?

Class Discussion

- ENR's "Greatest Construction Projects Over the Past 125 Years"
 - Over 68% of the projects were located in the U.S.
 - Yet, 6 of the last 7, and 7 of the last 10, were foreign

- Over 80% (30 projects) were infrastructure

Categories

U.S.	25 ½
Infrastructure	30
Bridges	8 ½
Tunnels	7 ½
Dams	6
Water & Sewage	3
Pipeline	1
Canals	2
Harbors	1
Sea Barriers	1

- Only five were buildings and one, a monument.
- What projects are missing?
- What are your best guesses for the “Greatest Construction Projects” over the next 20 years?

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- Foes of Globalization
 - Who are the foes?
 - From the “The Lexus and the Olive Tree”
 - Can nations preserve identity, home and community, while successfully globalizing?
 - How are technology, finance and information democratizing?
 - Who are the electronic herd?

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