Future Shock: Technology Outpacing Perceptions

Angelos Kostopoulos

Perspectives: 800 Generations

• If we presume man's existence 50.000 years & each generation equaling 62 years, = 800 generations on earth
o The first 650 man spent in caves
o In the last 70 generations have we had a written language
o In the last 4 generations have we been able to record time with precision
o In the last 2 generations have we had electric motors

The 800th Generation Marks the Schism with the Past:

• Man's relationship with his natural resources has reversed itself
• In the last 3 generations, Agriculture, the 1st stage in economic development, and the basis of previous civilizations has lost its primacy in country after country. (Less than 15% of populations in developed nations work in the agricultural sector)
• If agriculture represents the 1st stage in economic development, then industrialization represents the 2nd transforming farmers into blue collar workers.
• The 3rd stage began in 1956-we refer to it as the communication and services revolution, where >50% of developed "white collar" populations are employed. (Non-farm, Non-manual labor)
• The 4th and current stage, the energy revolution, embodies man's departure from the use of fossil fuels: Super-industrialism.

Demographic Explosion: Social Ramifications

• 1850 only 4 cities had populations of over 1 million
• 1900 only 19 cities had populations of over 1 million
• 1960 – 141 cities had populations of over 1 million
• Today world urban populations are growing @ 6,5% annually = *doubling of worlds population*
• *every 11 years*
• By 2050, Europe will have a deficit of laborers of 80 million

Energy Effusion: Economic Ramifications

• Global Energy Consumption scale: Q = 33.000 tons of coal
o From Birth of Christ until 1849 total energy consumption was 0,5 Q per century
o 1850 ratio = 1Q per century
o Today ratio = 10Q per century
• This means that half of all the energy consumed by man in the past 2.000 years has been consumed in the last 100 years

Geopolitical Effusion: Global Ramifications

• The last decade of the 21st century exponential changes occurred in global infrastructures.
o GDP growth rates 5-10% are common
o Double output of goods @ 15 years
o Technological innovation between Idea-application- diffusion are rapid
o Domestic & International Migration
o Decline of the traditional family
o Rise of the Virtual Society & Economy
o Transitionary control of Central Asia – Middle East Oil Resources
o Exploration & Exploitation of the Oceans

Understanding Change: The Basic Ingredient for the Advancement of Renewable Energy

Sources in Bulgaria

• The energy needs of Bulgaria are growing % annually as GDP grows at fastest rate of EU
• Bulgaria accession to the EU and greater energy policies
o Effect the Security of Energy Supplies
o Make smart & efficient use of EU infrastructure funds
o Modernize education system
o Establish positive immigration strategy

• Promote RES
o Green Credits (i.e. Stamboliyski Paper Mill-EBRD)
o Promote Energy Efficiency & Renewables
o Protect the Environment

Snap-shot of the 2050

• Human communities in Space and under the Oceans
• Human-like robots performing mundane & security tasks
• Ability to breathe underwater
• Weather control & modification
• Genetic advances result in extension of human life to 125 years
• Stem-cell technology leads to organ & limb clinics
• Renewable Energy Cars, Ships and Airplanes

Conclusions

• Bulgaria's EU membership represents a historic opportunity for peace and prosperity
• Bulgaria must develop its comparative advantages
• Bulgaria must secure its energy supplies & promote RES
• Bulgaria must address its demographic decline
• Bulgaria must adapt its educational system to meet globalized demands