

Le profile d'un ingénieur
dans le 21^{ème} siècle

***The Industrial Revolution and
the impact on society -
what does it mean for future
engineering behaviour and
methods?***

Dipl.-Ing. Uwe K. Brentrup

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From evolution to revolution

Evolution of technology

- Early Stone Age => tools
- Control of fire => metal treatment
- Invention of the wheel => transport & logistics

Evolution of society

- From nomadism to settledness

From evolution to revolution

Revolution of technology

- Letterpress (Johannes Gutenberg 1442)
- Steam engine (James Watt 1769)
- Weaving loom (Edmund Cartwright 1785)
- Railway (1825)
- Telephone (1861)
- Cars (Carl Benz 1886)
- Integrated Circuit (1958 Jack Kilby)
- Landing on the moon (1969)
- Programmable IC (Intel 1972).

From evolution to revolution

Impact on the society

- Education for a major part of the population
- Increase of food production efficiency
- Massmanufacturing
- Rural depopulation
- Change of work from rural environment to factories in urban environment
- Globalization
- From industrial to knowledge society.

Today's global Challenges

- Population Growth
- Health
- Energy Consumption
- Environmental Degradation
- Allocation of resources
- Poverty
- Climate Change.

Today's Opportunities

- Engineering for sustainability
- Engineering for renewability
- Engineering for less power consumption
- Engineering for less water consumption
- Engineering for ecological compatibility
- Engineering for human work environment
- Technology for humans.

Let's go for the Opportunities!