Relevance of the interdisciplinary course on Technology Assessment (TA) for energy universities

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Lessons for Technical Education (TE) – Development and action learning innovation’s forms of work (joint activities) in the era of transformations of Global civilization of professionals

TA: Risk insurance (including disruptive technologies) vs Engaging platform (for stakeholder’s value co-creation)

TE: Value-driving TA will be digital platform for Stakeholder’s Co-creation Projects (as base for multidisciplinary education)
The inventors of the “Bicycle”


Transformation A + Transformation B + Capabilities Link = Digital Enterprise (“Accenture”, 2015) and/or Social Enterprise (“Deloitte”, 2017)
Anatomy of BioNiC company
The successful company of the future will blend human (digital talents) and technological (data, platforms, AI) capabilities.

XX century: Financial+Human+Natural Capital

XXI century:
{Behavior capital (developed by tracking ongoing activity) + Cognitive capital (the value inherent in algorithms) + Network capital (the connection people and machines)} Imagination = Successful Transformation!

strategy+business

Five Overlooked Principles Shaping the Destiny of Your Business

1. Turing’s theory of computability
   Machines can calculate any of the ever-growing number of problems that are possible to calculate.

2. Coase theorem of transaction costs
   Aside from transaction costs, the most efficient outcome will prevail in any market.

3. Bell’s law on the birth and death of computer classes
   Roughly every decade, a new class of lower-priced computing devices emerges — and changes everything.

4. Baldwin and Clark’s concept of modularity
   Breaking a technology or process into functionally relevant components facilitates innovation.

5. Nakamoto’s law of the distributed ledger
   Transactions improve when trust is managed by the system, not by mediators.

Source: strategy-business.com/FivePrinciples
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Statement on the Purpose of a Corporation
(Business Roundtable USA, August 19, 2019)

...While each of our individual companies serves its own corporate purpose, we share a fundamental commitment to all of our stakeholders. We commit to:

• **Delivering value to our customers**... leading the way in meeting or exceeding customer expectations.

• **Investing in our employees**... through training and education that help develop new skills for a rapidly changing world. We foster diversity and inclusion, dignity and respect.

• **Dealing fairly and ethically with our suppliers.** We are dedicated to serving as good partners to the other companies... that help us meet our missions.

• **Supporting the communities in which we work.** We respect the people in our communities and protect the environment by embracing sustainable practices across our businesses.

• **Generating long-term value for shareholders,** who provide the capital that allows companies to invest, grow and innovate. We are committed to transparency and effective engagement with shareholders.

Types of joint activities


**joint-interactive** (J-Int)
self-regulated by *collective*

**joint-individual** (J-Ind)
self-regulated by *motives*

**joint-sequential** (J-S) regulated by *normative*

2 types: 1) J-S/J-Int; 2) J-S/J-Ind

**joint-creative** (J-C) regulated by *(collective & motives & normative)*

*creative = imperatives*
Five imperatives of joint-creative activity

Basic values and principles that are obligatory for everyone who seeks to achieve a synergetic effect.

**Individual creativity**
- Continuous self-development of everyone on the basis of available best practices.
- Individual self-organization.
- Self-education as a way of life and self-realization.

**Social creativity**
- Creation of new social institutions as tools for solving problems.
- Development / change of institutions based on collective self-organization and mutual trust.

**Cultural creativity**
- Obtaining new cultural achievements (creation of works) of world level.
- Preservation of traditions, critical understanding of the heritage of mankind.

**Moral creativity**
- Everyone's practical willingness to do good, not evil, in the most difficult circumstances.
- To strive in any situation to be a moral model – for yourself and for others.

**Spiritual creativity**
- Climbing to the understanding of his mission.
- Creation of new values for humanity.

**Human capital**

**Social capital**

**Cultural capital**

**Moral (Reputational) capital**

**Spiritual capital**
Moral tetralemma of joint-creative activity

(P.V. Malinovskiy, 2003)

- Individualism
- Conformism
- Humanism
- Collectivism
- Heroic Pessimism
- Creative Altruism
- Ascetic Pragmatism
- Reasonable Selfishness
- Egoism
- Self-survival
- Self-creation
- Self-sacrifice
- Self-sacrifice
- Self-destruction
- Self-destruction

P. A. Sorokin (1889-1968)
Thank you!

Questions???