Conflict, Cooperation – or both: How does innovation occur?

Innovation emerges from ideas only when they are implemented in new products or services that are successful and penetrate the market. The road there can be troublesome. The breakout session of the Climate and Energy Fund examines how much cooperation with consumers is needed in order to integrate innovative (energy) technologies permanently, and how much conflict innovation is able to withstand. How important are legal requirements and how can market research help? Can we perhaps learn from military strategies how conflicts between innovation and consumers can be solved?

Chair: Theresia Vogel, Managing Director, Climate and Energy Fund, Vienna

Coordination: Katja Hoyer, Press Officer, Climate and Energy Fund, Vienna

Schedule

13.00-13.20 WELCOME AND INTRODUCTION
Theresia VOGEL and Markus MOOSLECHNER

13.20-13.30 INTRODUCTION OF PANEL GUESTS
Markus MOOSLECHNER

13.30-13.40 OPENING REMARKS
Theodor ZILLNER, Deputy Head, Department of Energy and Environmental Technologies, Austrian Federal Ministry for Transport, Innovation and Technology

13.40-14.40 Harald KATZMAIR (Lecture and discussion)

14.40-15.20 Susanne MICHAELIS (Lecture and discussion)

15.20-15.40 Coffee break

15.40-16.20 Siegrun KLUG (Lecture and discussion)

16.20-17.00 Roland WERNER (Lecture and discussion)

17.00-18.00 SUMMARY & FURTHER DISCUSSION
Theresia VOGEL with all panel guests
Abstract

Disconnected Worlds – on bridging the technology gap between the local and the global scale in climate policy

The new is the domain of inventors and early adopters who are most of the time not part of existing power zones. Inventions and disruptive new ideas are born at the (semi-)periphery of networks. Watching the current stage of many new ideas in the field of energy- and climate related technologies we are witnessing the prototypical chasm between inventors and early adopters at the one side and the early majority at the other, typically manifested in a gap between local solutions at the regional scale and ignorance or active resistance at the national/global scale.

In order that inventions become actual market innovations the new has to cross the chasm from the stage of being local, peripheral, subcultural, prototypical to the stage of being adopted by opinion leaders and the early majority of existing elites and power cores. Innovation, as A. J. Schumpeter pointed out, triggers frequently a manifest power struggle between the social group representing the old status quo and the network of newcomers and challengers. By capturing more and more share of mind and share of market the newcomers weaken the established center through “sucking energy and attention from the core” (A. J. Schumpeter). That’s how new power centers emerge, that’s how disruptive new ideas overcome established paradigms and the networks that reinforce those paradigms. Power centers that are disconnected from their periphery and blind towards it’s emergent ideas and technologies sooner or later will be replaced, due to lack of openness and adaptability. Hence power centers who are capable of surviving many cycles of “creative destruction” show an openness towards activities of the (semi-)periphery and are capable of integrating the new again and again.

To overcome the chasm between the early local adopters and the national/global majority is a multidimensional, complex enterprise. Obvious factors, as the perception of the amount of relative advantages, compatibility, complexity, trialability and observability of the new solution are in resonance with much more fundamental factors, as cultural values and their deeply rooted frames in the consciousness of people (G. Lakoff). Egocentric, ethnocentric and world centric views are clashing in climate policy and are overshadowing and limiting the perception of the manifold local solutions and blocking their diffusion. A completely new approach is required to help local solutions succeed faster at the global scale: to create “bridging stories” need to be created to link the issue of climate change and existing inventions with the deeply rooted moral frames of different groups. Effective bridging and communication between the local and the global, the pioneers and the mainstream of adopters not only requires robust networking strategies, linking the periphery with the open and adaptive segments of the core, but also profound knowledge about values and frames of target groups as well as people capable to address and translate the “climate solution story”.

Harald Katzmair
Managing Director FAS-Research Sozialwissenschaftliche Forschungsgesellschaft mbH
Overcoming top down technocratic-scientific approaches seems to be mandatory. Without innovation in the cognitive-cultural realm, bridging moral frames in a different way, the current deadlock in climate policy will not be changed. The concept of resilience could be a robust frame to broker between egocentric, ethnocentric and world centric views and might provide a more relaxed context for negotiations between vested interests at the local and global scale.
Susanne Michaelis  
NATO - Energy Security Section, Emerging Security Challenges Division (ESCD)

Abstract

NATO Smart Energy – From Conflict to Innovation

The need to improve the energy efficiency in the military (Smart Energy) was brought to the attention of the Alliance in 2011 via the Emerging Security Challenges Division (ESCD). This division was created a year earlier with the mandate to address a growing range of non-traditional risks and challenges through a holistic approach, including civil-military interaction.

Following a series of expert briefings that the ESCD organised to explain the significant risks that the high energy demand in operations present, the Heads of State and Government declared in 2012 “We will improve the energy efficiency of our military forces”.

To achieve such a shift in thinking, the “NATO Smart Energy” initiative was launched bringing together a multi-disciplinary stakeholder community to raise awareness, to share information and best practices, to support research and innovation, and to transfer technologies from the civilian to the military sector.

To this end, the conference & exhibition “Innovative Energy Solutions for Military Application” (IESMA), which took place in Vilnius for the third time in 2016, has drawn an increasing number of experts from academia, the private and the military sector. IESMA events are supported by NATO’s Science for Peace and Security (SPS) Programme.

An important milestone was reached when ESCD integrated a Smart Energy unit in the military exercise “Capable Logistician 2015” that took place in Hungary. Fourteen companies, the German Bundeswehr and the U.S. Army contributed innovative technologies and expertise for efficient energy production, storage, consumption and management. Several prototypes were showcased as integrated components of smart micro grids or as a mobile island power solutions. Furthermore, innovative technologies were used for efficient tent insulation, lights, climate conditioners and water purification. The Smart Energy unit responded successfully to scenarios, such as main power cuts, diesel contamination and a flood crisis.

The exercise concluded that new standards are needed for more efficient, sustainable, mobile and autonomous capabilities for future multinational military forces.

The next phase of NATO Smart Energy has started under the NATO Smart Defence project “Smart Energy Training and Assessment Camp (SETAC)” that serves as an umbrella to bring willing nations together for advancing best practices and technologies, as well as for developing standards to ensure the innovative technologies will become interoperable.

More information on NATO Smart Energy can be found at www.natolibguides.info/smartenergy
Future customers should be involved in innovation processes beforehand. Customer centricity in the innovation process leads to better solutions by identifying and understanding underlying customer needs as a starting point for innovation. Client involvement in innovation can be better addressed with reference to a formalised, structured process with separate and sequential stages, which is likely to characterise larger companies that allocate dedicated resources to research and development programmes.

Energy consumption is not an isolated activity, it is part of a higher level every-day task. In order to complete this task energy-related solutions tend to become part of a higher-order solution platform – smart (home) products and services. Smart solutions are facing the same market entry challenges as all other offers. To understand the underlying customer needs is therefore also crucial for energy innovations.

There are psychological structures that influence the adaptation of innovative technologies or products like emotions, motives, knowledge, behaviour routines, opinions and personal values. Values stay the most stable over a longer period of time. Values are an important part of personal lifestyle and sociocultural affiliation. Understanding the underlying values of different types in a population provides valuable input for sustainable innovation development.

All these key factors are considered and implemented in the research design of the research project described below.

**Case Study "User Integration/Seestadt Aspern":**

In this ongoing project research focuses on flexibility options in electricity systems, the active management of the low-voltage grid, and the investigation of ICT options to interlink buildings and the low-voltage grid. The involvement of occupants living in a new energy efficient multi-unit residential building is a key component of the project as well as researching the effects of innovative control and monitoring functions available for the users.

User-Interaction activities are part of the entire project. At the beginning, residents are assigned to various user groups. This method serves to divide the rich variety of individual users’ behaviour into manageable behavioural patterns as a basis for the subsequent development of communication measures as well as technical solutions, especially in the field of building automation control systems. On the one hand, users are being regularly tested by means of social-scientific methods regarding their changes in knowledge, information behaviour and user behaviour. On the other hand, measures are being implemented during the entire progression of the project, in order to enable the residential users to actively utilize the control features of the intelligent building technologies.
The results are currently integrated into the development of the user interfaces for building controls and user feedback systems. After the implementation of these technical features, users’ acceptance will be researched in upcoming surveys. The focus will be on the impact of the user interfaces, the user feedback systems, and the effects of the increasing knowledge through various communication measures on user behaviour.
Roland Werner
Head of Government Affairs & Policy, UBER

Abstract

Future of urban mobility
Innovation needs change and flexible structures

The challenge of Uber is not new

- More than one hundred years ago LP Draper invented the Jitney
- Why? He saw people waiting in long lines for the trolley car and wanted to offer another way to ride across town
- He put a sign in his window and offered rides for a Jitney (slang for a nickel)
- not long and people jumped in – not just in LA but across the country

The Jitney didn’t survive. This is why:

- Streetcars, the monopoly of the day, got worried about their business
- They lobbied city governments across the US to regulate ride sharing → Jitney License
- By 1919 the Jitney was regulated out of existence
- During the next hundred years, cities all over the world introduced regulations to protect transportation incumbents from ridesharing competition

The displacement of a market participant had a very public cost:

- People couldn’t share cars, so they each bought their own ones
- That led to MEGA traffic jams and pollution
- Today: 95 % of more than 1.2 billion cars are most of the time unused

Consumers want change, but some are afraid to lose business

UBER is part of the solution

1. reduction of individual traffic
2. lower fuel consumption
3. lower emissions

But there is one problem!

- Talk about the need to reduce greenhouse gas emissions vs. flexibility to allow intelligent tech solutions
- The regulatory framework vs. innovation

Conclusion: Innovation needs some friction to break up old structures and build up new possibilities, but it also needs cooperation to develop these innovations further. Without modernization of laws to allow new technologies and businesses, we won’t have real innovation. Think about the Jitney!