TTGV

REACT

Rethinking Valorization of Transformative Technologies

2025

The Value of Knowledge, Systemic Innovation and Transformative Technologies

REACT is a technology valorization focused event series, organized by TTGV

TTGV ÖNCÜL PROJE PROGRAMI-**TOHUM**
#İklimÖncüsü

OPENING SPEECHES

Vision and Community Building

Hanzade Sarıçiçek - TTGV Secretary General

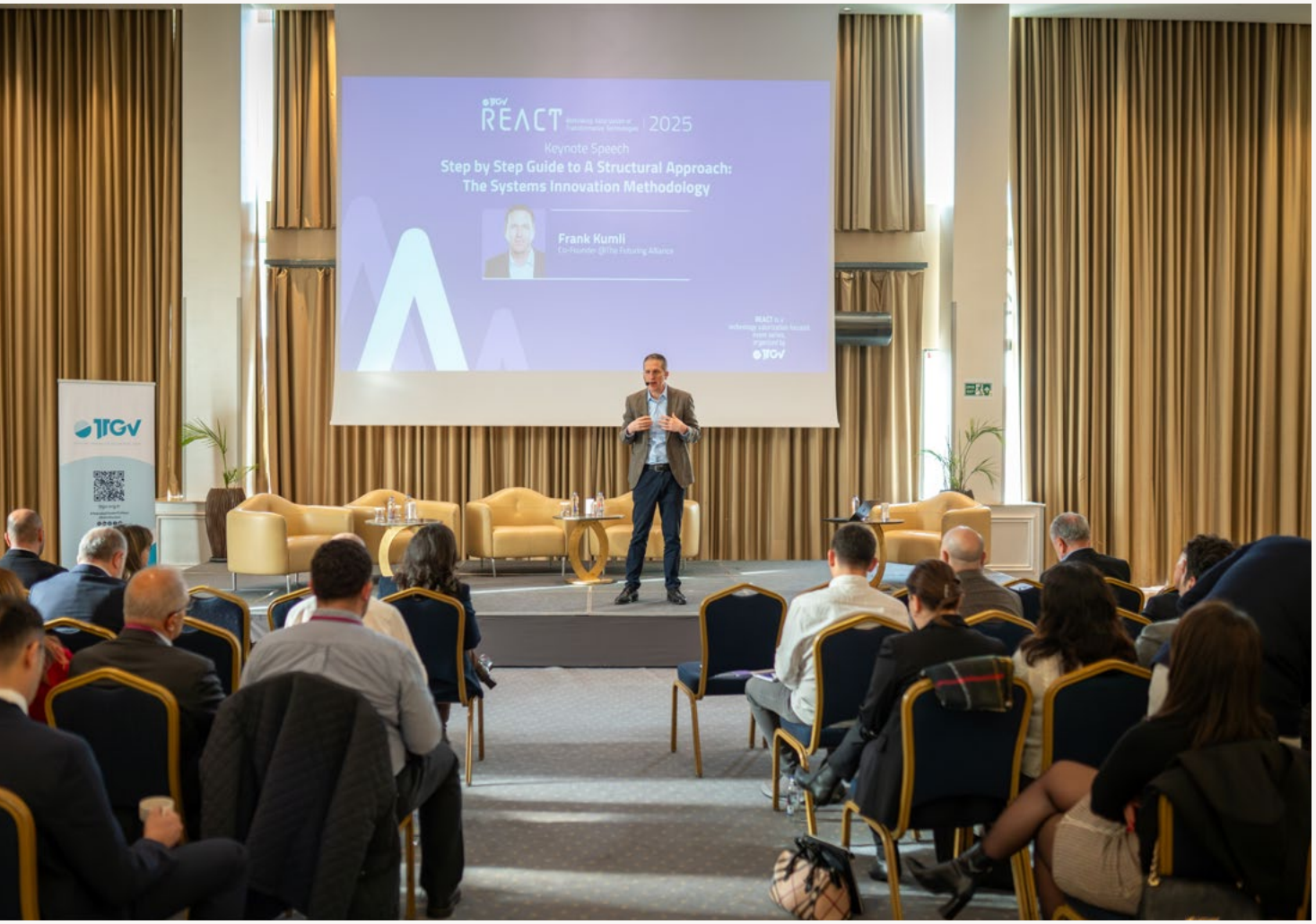
TTGV's mission is to support technology development and innovation activities in Turkey's private sector. Since 1991, TTGV has been exploring and applying new ways to accelerate and scale these efforts. It focuses on challenging areas such as systems innovation and transformative technologies, which require looking at problems from multiple angles and working across disciplines. For this reason, TTGV creates platforms that bring different stakeholders together to think jointly, develop solutions collaboratively, and build forward-looking insights. In this context, REACT is an important event for TTGV.

Evren Bükülmez - TTGV Program Director

For many years, TTGV has been striving to contribute to the deep tech ecosystem. However, in the last three years, and especially with an increased emphasis on climate technologies, a set of recurring, systemic issues has become evident. In sectors such as health, life sciences, and climate technologies, uncertainties persist, particularly around hardware and enabling infrastructure. Greater investment in infrastructure is needed to help innovations bridge the "valley of death." While these challenges are well recognized, strengthening capacity in this domain remains a priority. Through targeted programs, we aim to address critical "valleys of death." Delivering measurable impact requires sustained, multi-year effort and coordinated action across industry, public institutions, and intermediary platforms. Accordingly, a diversification of the program portfolio is being pursued.

KEYNOTE SPEECH 1

Step by Step Guide to A Structural Approach: The Systems Innovation Methodology



Frank Kumli (Co-Founder of Futuring Alliance) shed light on the event's main theme by providing a step-by-step look at the system innovation methodology.

> *Europe is not lacking ideas; it's lacking coherence. There is a terrible misalignment around energy, politics, skills, talents, and the regulatory framework. Nothing is aligned.*

Kumli emphasized that this misalignment is the biggest obstacle to transitioning from isolated experiments to real system change. He stated that multiple, reinforcing crises such as climate, health, and geopolitics, which he termed 'polycrisis,' are 'wicked problems' that cannot be solved with linear approaches. He explained that transformative innovation aims to change an entire system, not just a single project.

Transformative Innovation Process: A Step-by-Step Approach

Frank Kumli outlined a process specifically designed for system change: Form, Word, and World. This approach combines strategic foresight and systems thinking, offering a comprehensive framework for understanding and transforming complex ecosystems.

1. Form (Creation): Understanding the Ecosystem

This stage focuses on a deep understanding of the system being worked on. Who are the stakeholders, and where are the key leverage points? This stage draws a clear picture of emerging trends, future trajectories, and multidisciplinary approaches.

- Three Horizons Framework
- Systems Thinking and Mapping
- Thinking About Futures (Preferred Future, Plausible Future) Causal Layered Analysis

2. Word (Alignment): Alignment for Transformation

This stage aims to bring stakeholders together around a common, ambitious goal. The concept of "Mission-Oriented Innovation" plays a central role here; it is important to establish a shared objective and a portfolio of various approaches to achieve it.

- Defining the Preferred Future Backcasting
- Forming Cohesive Coalitions

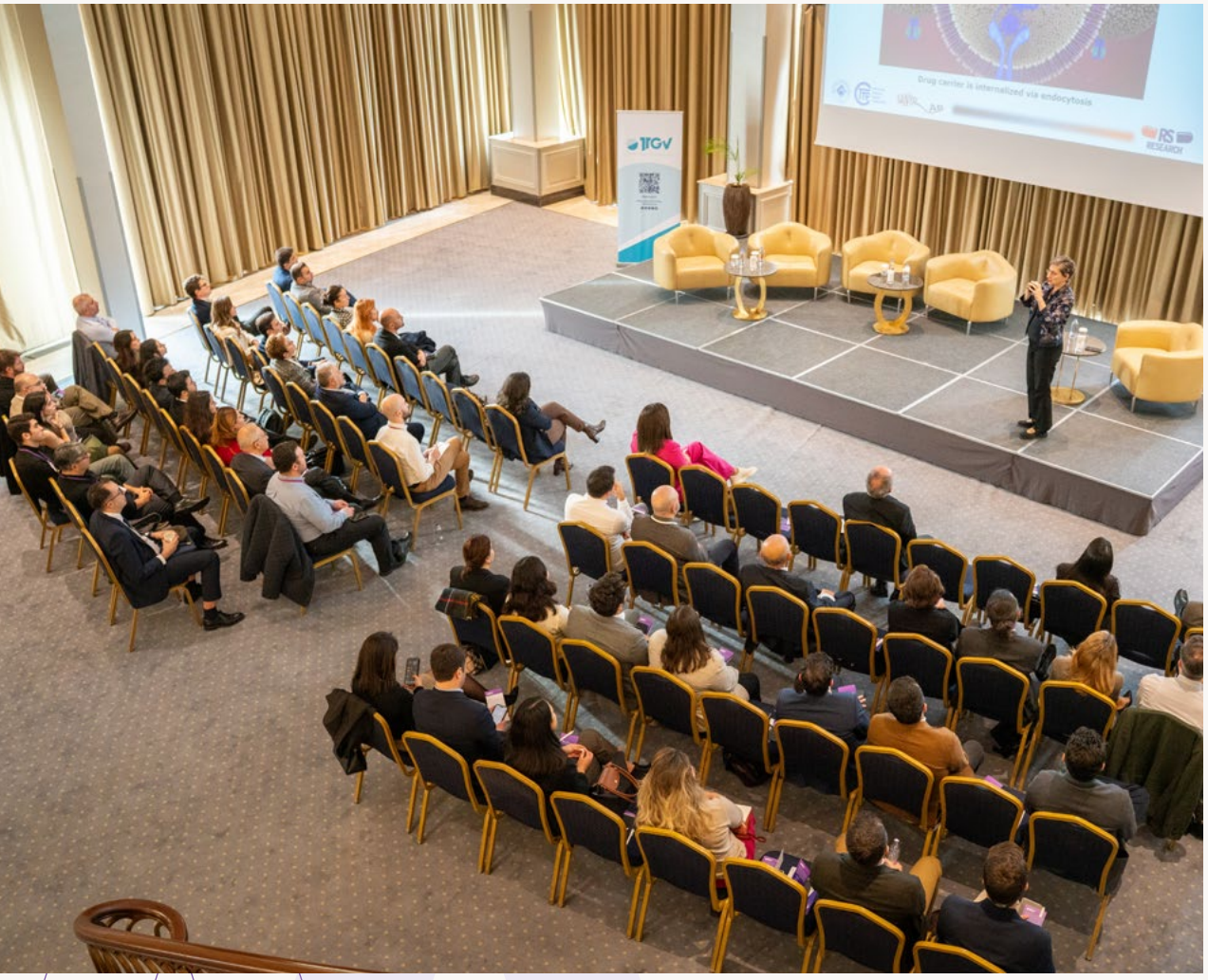
3. World (Implementation): Prototyping and Application

This stage involves implementing experiments, pilot projects, and prototypes to achieve the defined goals. Managing a portfolio of experiments and scaling those that are effective ensures that system change occurs.

- Experiment Portfolio Management Theory of Change
- Ruthless Experimentation Institutionalization and Scaling

KEYNOTE SPEECH 2

The Ups and Downs of Knowledge Valorization: First of A Kind Success Story



Prof. Dr. Rana Sanyal (CSO of RS Research) shared her experiences on the process of transforming knowledge into innovation, and the challenges and successes encountered along this journey. She illustrated the "valleys of death" that scientific knowledge traverses from the laboratory to the patient, and how these valleys can be overcome.

System innovation, thanks to Rana's leadership and framework, created a viable ecosystem for drug development in Turkey to transform its ecosystem.

Basic Research and Discovery

Pushing the boundaries of new knowledge and patenting discoveries.

Preclinical Development

Validating the product candidate through chemical synthesis, biology, and animal studies.

Clinical Studies

Testing the drug's safety and efficacy in humans through Phase 1, 2, and 3 trials.

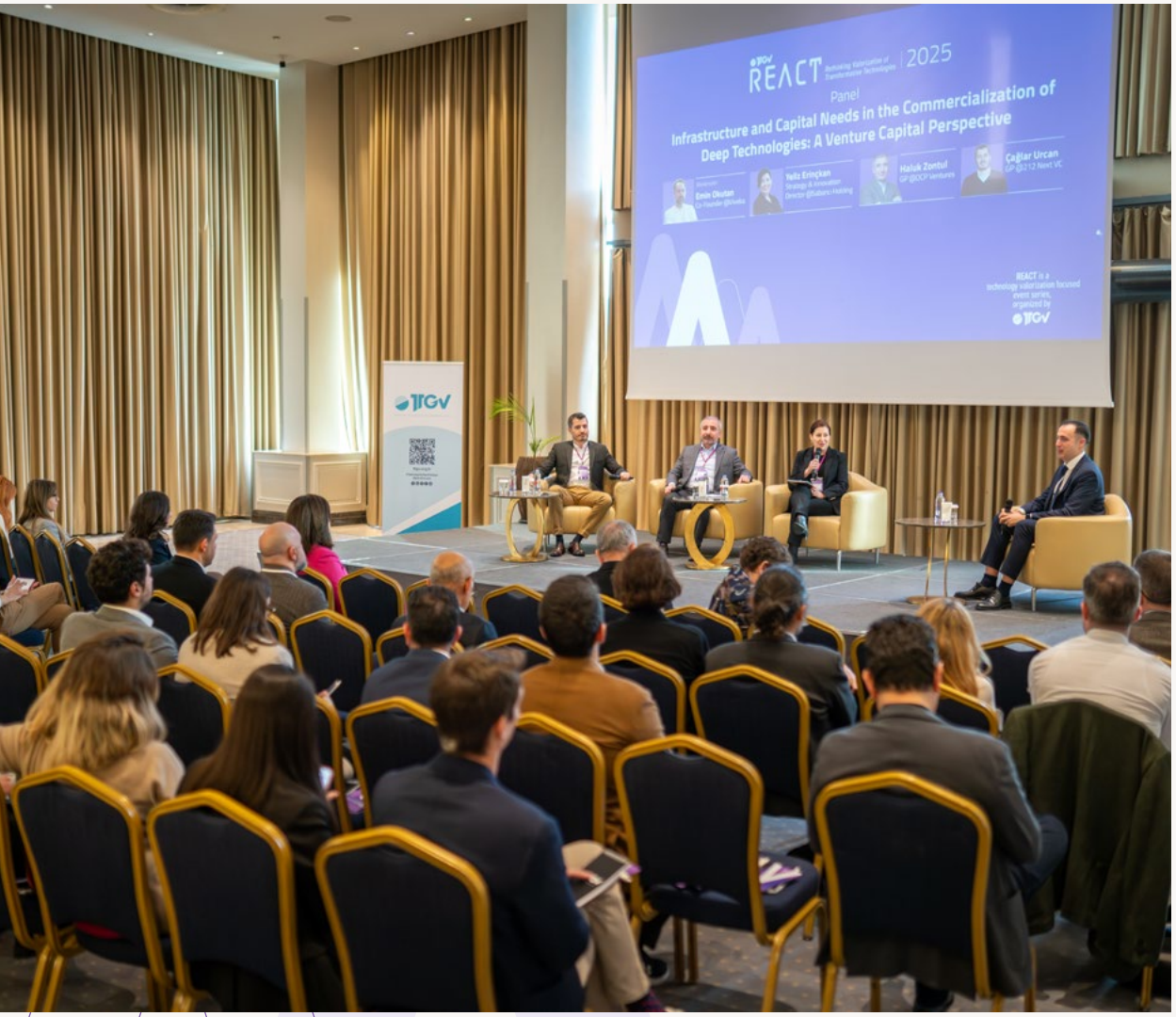
Manufacturing and Market Launch

Production in GMP-certified facilities and regulatory approval processes.

Prof. Dr. Sanyal emphasized the importance of strong leadership, "VUCA leaders," and radical optimism at every step of this long and costly process. Through her own experiences, she proved that it is possible to create a drug development ecosystem from scratch in Turkey and to be competitive in the international arena. RS Research's success with the ARG001 molecule in cancer treatment became a concrete example of this journey.

PANEL

Infrastructure and Capital Needs in the Commercialization of Deep Technologies: A Venture Capital Perspective



In a panel moderated by Emin Okutan (Co-founder at Viveka), Yeliz Erinçkan (Strategy & Innovation Director at Sabanc1 Holding), Haluk Zontul (GP at DCP Ventures), and Çalar Urcan (GP at 212 Next VC) discussed the challenges and opportunities of deep technology investments. The panelists debated the current state of Turkey's deep technology ecosystem and areas that need improvement.

Turkey's Strengths and Areas for Development

Advantages

- Young and engineering-focused population
- Ability to adapt quickly to regulations
- Strong institutions like TÜBİTAK, KOSGEB, Technoparks, and universities Deep technology culture developed in fields such as the defense industry

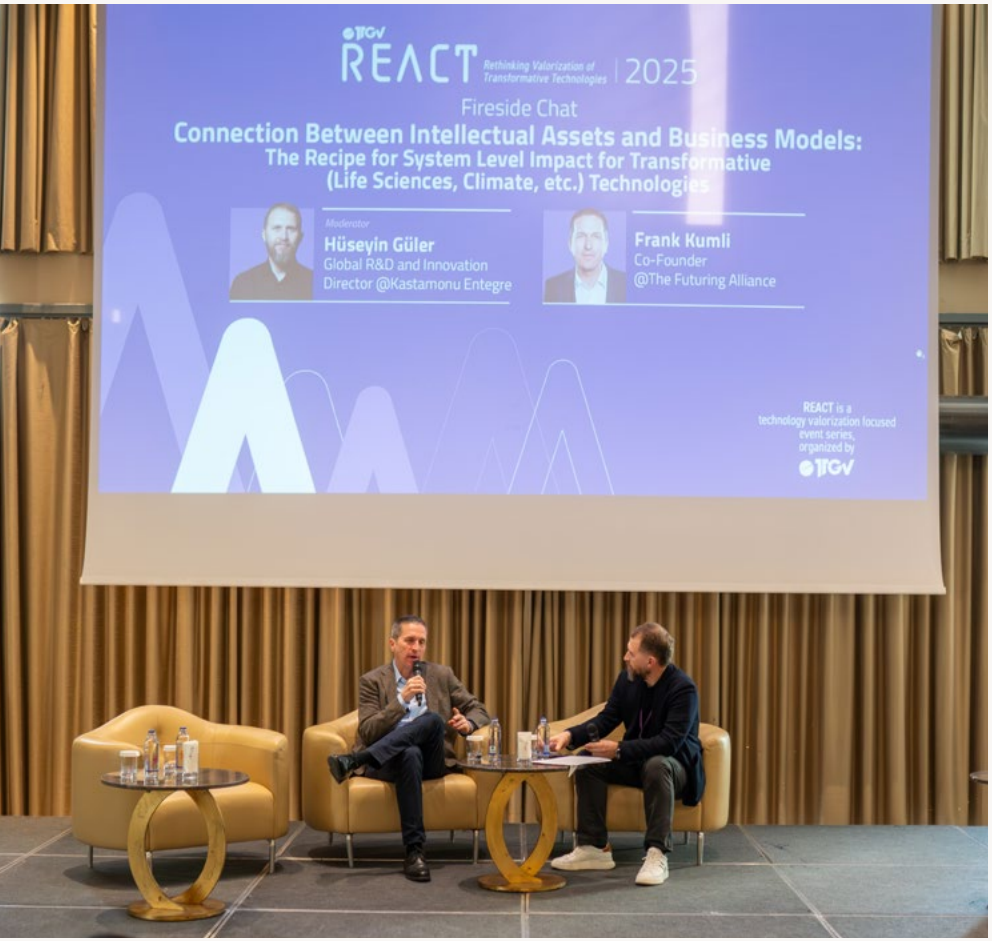
Areas for Development

- Inadequacy of early-stage deep technology funds
- Slowness of PoC processes in corporate-startup collaboration difficulties in commercializing university IPs
- Lack of regulation and limited sandbox structures

The panelists emphasized that deep technologies require a long-term and patient investment culture, thus necessitating a different approach than traditional venture capital models. They particularly highlighted the vital importance of internationalization and opening up to global markets for deep tech ventures. Additionally, it was noted that Turkey's incentive systems and the functioning of technoparks need to be re-evaluated with a focus on deep technology.

FIRESIDE CHAT

Connection Between Intellectual Assets and Business Models: The Recipe for System Level Impact for Transformative (Life Sciences, Climate, etc.) Technologies



Defining Transformative Technologies

This session was moderated by Hüseyin Güler (Global R&D and Innovation Director at Kastamonu Entegre) and featured a conversation with Frank Kumli on the systemic impact of transformative technologies. Frank Kumli stated that transformative technologies are not just technological advancements, but also need to change how value is created, how society organizes itself and compel institutions to reinvent themselves. Citing Rana Sanyal's cancer drug example, he explained that an innovation might not be transformative on its own, but its ability to transform the ecosystem constitutes its essential transformative power.

Measuring System-Level Impact

Kumli highlighted the difficulty of measuring system-level impact, emphasizing that it should be a population-level outcome and necessitate changes in existing structures. He also stressed the importance of a mechanism that allows the system to continuously learn. He added that models are being developed to measure impact in these complex systems, but they are still in a learning phase.

Competencies

Developing the talents that will shape the future.

Understanding Systems

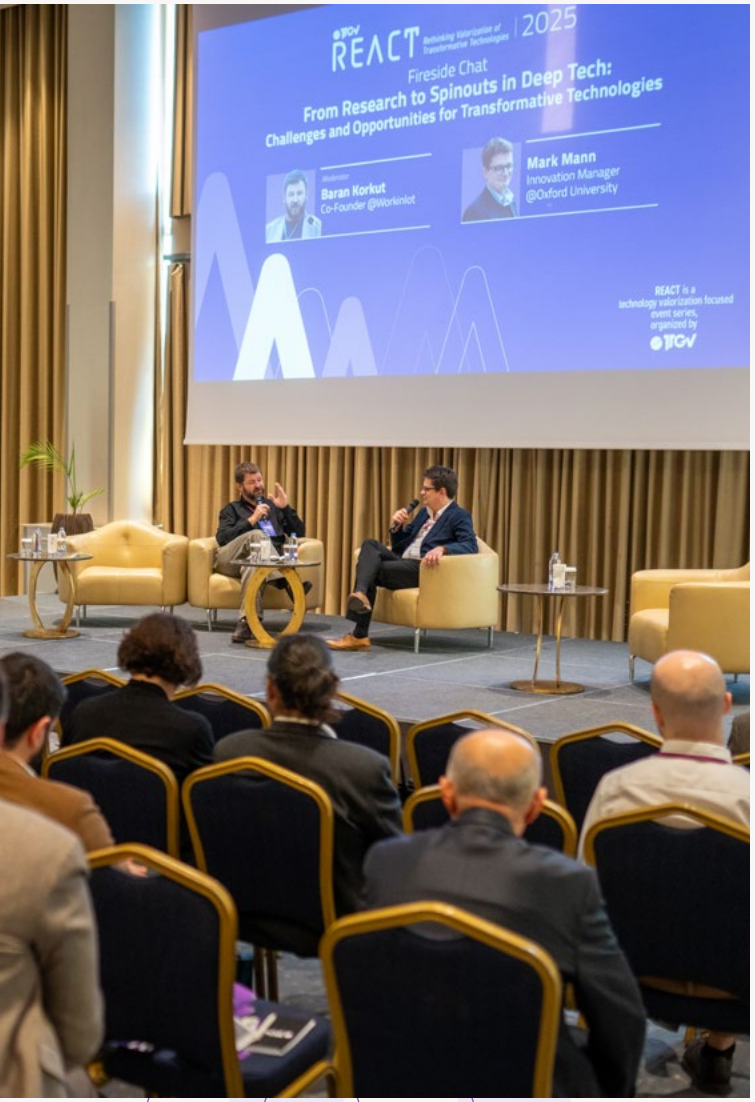
Grasping how things are interconnected.

Radical Optimism

Believing that a better future is possible.

FIRESIDE CHAT

From Research to Spinouts in Deep Tech: Challenges and Opportunities for Transformative Technologies



Mark Mann (Innovation Manager at University of Oxford) and Baran Korkut (Co-founder at Workinlot) discussed the challenging path from research to commercialization in the deep tech sector, addressing it from both academic and private sector perspectives. Mark Mann, drawing from his rich career experience, shared the obstacles encountered and successful strategies in this process.

Challenges of Academic Entrepreneurship

Lack of Customer Focus ⟶ Insufficient Market Research ⟶ IP Management and Speed

Academics excessive attachment to their products can lead them to stray from market needs. Understanding the problems of the market and the customer before developing a product is vital.

Universities often conduct market research internally, through consultants, avoiding direct communication with actual market players. The lack of a reliable consultant network exacerbates this situation.

The slowness of patent processes and universities excessive control over intellectual property slow down the commercialization process and hinder the growth of startups. The perception of every technology as a "golden egg" leads to a waste of resources, even though most patents do not generate income.

The Role and Development Areas of Technology Transfer Offices (TTOs)

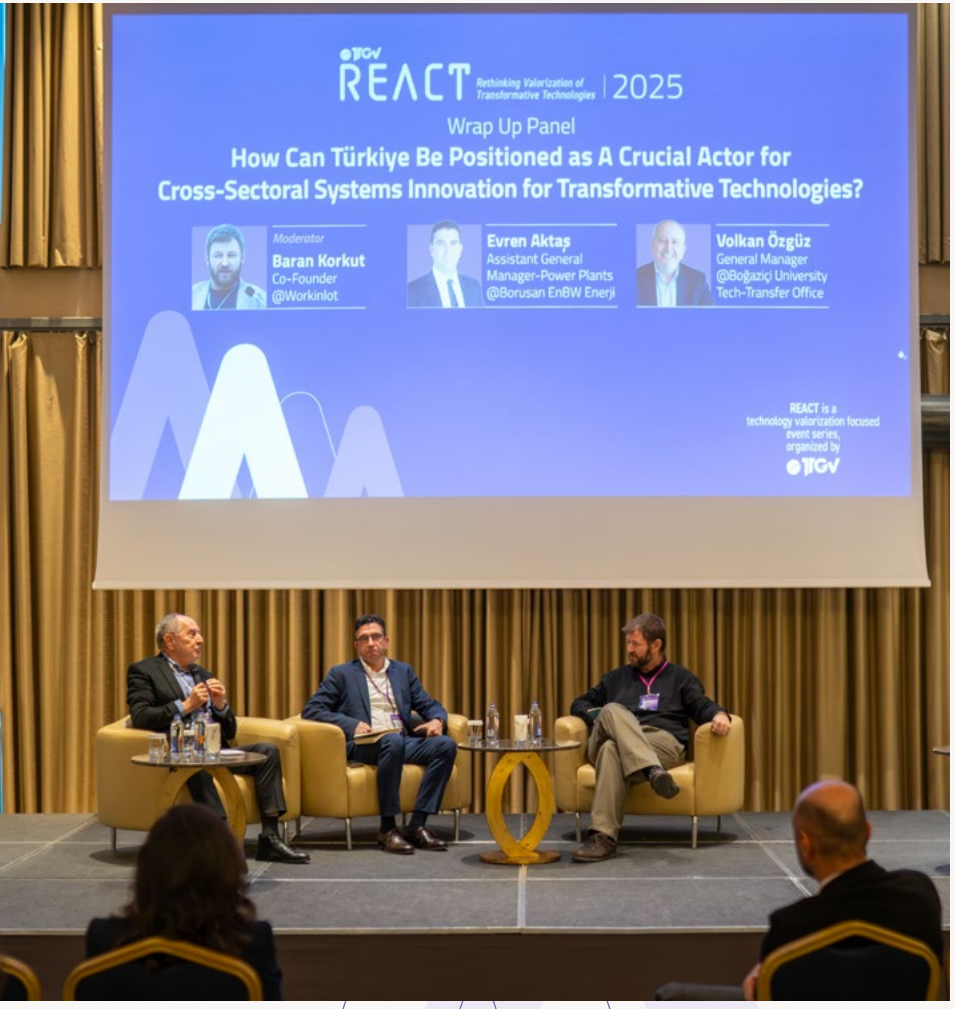
Mark Mann stated that large universities like Oxford have specialized TTO teams of 90 people, but this kind of expertise is not found in smaller universities. He emphasized that TTOs could create more value by focusing on mid-level ventures that need a little help, rather than "superstar" startups. He added that universities should take practical steps to reduce their equity stakes in early-stage companies and increase speed and flexibility.

Shared TTO Model

The "Shared TTO" concept, pioneered by Mark Mann, aims to reduce bureaucracy in universities and significantly shorten time-to-market by accelerating the commercialization of particularly low-value IPs. This model fosters trust with universities and offers them financial upside potential, enabling more innovation to be commercialized.

WRAP UP PANEL

How Can Türkiye Be Positioned as A Crucial Actor for Cross-Sectoral Systems Innovation for Transformative Technologies?



In a panel moderated by Baran Korkut, with Evren Aktaş (Assistant General Manager-Power Plants at Borusan EnBW Enerji) and Volkan Özgüz (General Manager at Boğaziçi University Tech Transfer Office) the discussion focused on how to develop cross-sector system innovation in Turkey.

TTO Models and Collaborations

Volkan Özgüz stated that the TTO model in Turkey is a classic "funnel" model and needs to be opened up to the outside. He expressed that the sustainability of the "Shared TTO" model mentioned by Mark Mann is a significant question mark for Turkey. He emphasized the critical importance of creating a trusting environment and periodic meetings among TTOs in Turkey. Özgüz, who said "The commercialization of intellectual property is a very new concept in Turkey," argued that TTOs need to find a balance between transfer and commercialization.

Borusan EnBW Enerji: Innovation in the Energy Sector

Evren Aktaş explained that Borusan EnBW has been building renewable energy plants for 16 years and also develops its own technology. He specifically mentioned developing predictive maintenance and forecasting models using artificial intelligence and machine learning. He stated that while developing in-house talent, they also collaborate with external startups. Aktaş added that Borusan Ventures corporate venture capital unit (CVC) accelerates critical process steps by investing in energy and electromobility startups, but these structures maintain their internal independence.

Startups in Turkey shouldn't have to find a cure for cancer just to gain a foothold.

Aktaş emphasized the importance of communication between large companies and startups, stating that startups need to thoroughly understand companies needs and business models. Referring to the challenges of the investment environment in Turkey, he noted that startups can achieve success not only by solving major problems but also by having the right business model and access to finance.

Future-Oriented Solutions and Expectations

The general expectation from panelists and speakers was that collective intelligence, a trustworthy environment, and strong leadership are needed to develop Turkey's deep technology ecosystem. It was emphasized that systemic changes are required in many areas, from education to finance, and from regulation to culture.

Collective Intelligence and Trust

Regular and trust-based collaborations among TTOs, academics, industry, and investors.

Early-Stage Funding

More early-stage funds and incentive mechanisms for deep technology ventures.

Strong Leadership

Visionary and fast decision-making leaders to guide cross-sector collaborations.

Internationalization

Structures that will support deep technology ventures in opening up to global markets.

Training and Competency

Integration of academics into commercialization processes and development of VUCA leadership competencies.

TTGV React 2025 has taken significant steps to shape Turkey's future innovation ecosystem by offering a valuable platform for knowledge valorization, system innovation, and transformative technologies.

REACT 2025

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