**PANEL 3: Innovative projects connecting the UK**

Moderator:

- Barbara Ghinelli

Panelists:

- Darius Hughes
- Sam Adlen
- Nelly Phillips
- Holly Ellis

**BARBARA GHINELLI:**

Well, it's great to be here again, third year in a row at this very successful event, and thank you for having me. I'm here with a very distinguished panel of experts from various industry sectors. One of the key points we're going to discuss is innovative projects connecting the UK. We've heard in previous panels how important collaboration is to achieve our goals, foster growth, and leverage our strengths across the science base, as well as in humanities and social sciences.

As we also heard in the first panel, the UK has many strengths but also many barriers. We've discussed regulatory frameworks, policy, and other challenges like skills innovation, commercialization, access to funding, and navigating an unstable global geopolitical environment. Breaking down barriers between science and technology areas is crucial and must be done locally, regionally, and pan-regionally across the UK, and internationally.

Initiatives like the supercluster board, the Oxo to Cambridge pan-regional partnership, the Midlands Engine, and the Northern Powerhouse are already helping. We've heard about exciting ideas and examples of translating key technologies into various business areas, such as site quantum. But our main discussion is about collaboration. Surveys from our campuses in Harwell and Daresbury Science Innovation campuses show that about 70% of successful businesses collaborate.

Collaboration is a big driver for businesses. I'm interested in hearing your individual experiences, how collaborations have helped you, and how ecosystems like innovation clusters enable new and better collaborations. Let's start with Darius. Let me introduce our panelists: Darius Hughes, General Manager of Moderna; Sam Adlen, Co-CEO of Space Solar; Nelly Phillips, Head of Space System Strategy UK at Airbus; and Holly Hellis, AWS Director of UK Public Sector Technology.

**DARIUS HUGHES:**

Thank you, Barbara. Good afternoon, everyone. At Moderna, we are all about collaboration. We're an innovative biotech company specializing in mRNA medicines and vaccines, like the COVID-19 vaccine. We've signed a ten-year collaboration deal with the UK government, which is the foundation of our operations here. We chose the UK as our second home outside of Boston because of the receptive government and collaborative ecosystem.

Our collaboration has three parts: pandemic preparedness, building a manufacturing plant, and research and development. For pandemic preparedness, we're working with the ecosystem here, including the NHS, to get a molecule from inception to manufacture and delivery quickly. Our manufacturing plant in Harwell, Oxfordshire, will have a biomarker lab and scientific research facilities, joining other British companies and scientists. For research and development, we're partnering with institutions like Oxford University on mRNA access projects, working on infectious diseases like Ebola.

**BARBARA GHINELLI:**

That's really exciting, Darius. Holly, your organization has grown massively over the last decade. What has been the biggest driver for your success and how have collaborations played a role?

**NELLY PHILLIPS:**

Coming from a different lens, AWS, part of Amazon, acts as an enabler for collaboration by providing the right technology for the right outcomes. Our success is driven by a culture of innovation and a relentless focus on customer outcomes. For example, with University College London, we co-created a Central Digital Innovation partnership. We support researchers with ideas by focusing on outcomes and providing the necessary technology and advice.

We enable customers to experiment and innovate, remove barriers to technology adoption, and help them connect and collaborate. This approach has supported many health tech and edtech startups, driving our growth by focusing on customer needs and outcomes.

**BARBARA GHINELLI:**

That's fascinating, Holly. Sam, can you give an example of how innovation clusters have supported your business growth?

**SAM ADLEN:**

At Space Solar, we develop space-based solar power, leveraging the sun's energy by launching large solar arrays into space and transmitting the energy to Earth wirelessly. The Harwell space and energy clusters have been crucial for our growth, providing access to talent and facilitating the Space Energy Initiative, a coalition of 90 organizations across space, energy, and government. Clusters enable rapid scaling and innovation by bringing together diverse sectors.

However, the challenge is leveraging these clusters for scalable growth. We need to move quickly to capitalize on our strengths, create UK businesses that build houses instead of just developing bricks, and ensure robust government support and investment.

**BARBARA GHINELLI:**

Thank you, Sam. Nelly, as part of the largest prime in the UK space sector, how have ecosystems facilitated collaboration for Airbus, and what more needs to be done?

**NELLY PHILLIPS:**

Airbus, well-established in the UK space sector, collaborates with over 1,000 SMEs. The rapidly changing space sector requires us to navigate between traditional and new technologies. Collaboration is crucial, and clusters help provide solutions, coach startups, and create neutral environments for co-creation. For example, the Fit for Space program helps startups become operational, and Pivot into Space identifies terrestrial technologies suitable for space.

To navigate this evolving landscape, clusters need to be focused, provide clear visions, and ensure that collaboration translates into actionable outcomes. Government, industry, and clusters must work together to create a conducive environment for innovation.

**BARBARA GHINELLI:**

That's an excellent list, Nelly. Now, thinking outside the box, what transformative technology outside your comfort area could make a difference in the future? Darius, would you like to start?

**DARIUS HUGHES:**

As a digital biotechnology company, we're excited about artificial intelligence. AI can supercharge our research, development, and manufacturing processes. For example, AI helps us design personalized cancer vaccines by sequencing tumors, identifying potential therapies, and optimizing treatment plans quickly. Collaborating with AI research centers and leveraging AI in clinical trials and data sharing with the NHS can drive significant advancements.

**BARBARA GHINELLI:**

That's fascinating. Holly, your thoughts?

**NELLY PHILLIPS:**

AI and machine learning have immense potential. Our customers are experimenting with these technologies, aiming to turn time and cost savings into reinvestment for innovation. Success lies in clear focus, productivity, and reinvesting savings. Collaboration across disciplines and leveraging AI can transform operations and drive significant change.

**BARBARA GHINELLI:**

Sam, your perspective?

**SAM ADLEN:**

Robotic assembly in space is key. It will enable large-scale projects like space-based solar power and other space applications, creating new industries. Collaborating with robotics clusters can unlock this potential, making space assembly efficient and scalable.

**BARBARA GHINELLI:**

Great insights, Sam. Nelly, any additional thoughts?

**NELLY PHILLIPS:**

In-space robotics and biotech, like growing materials in space, could revolutionize our sector. Autonomous space assets could self-diagnose and optimize data collection, saving time and resources. Collaborations in AI and biotechnology can drive these advancements.

**BARBARA GHINELLI:**

Wonderful discussion. We have a question about cluster development and support as a key theme of the new industrial strategy. How do you make a case for this? Nelly, let's start with you.

**NELLY PHILLIPS:**

Clusters need to be focused, accessible, and clear in their goals. Government should provide a vision and anchor customers, while industry should offer a clear view of investable technologies. Clusters must connect, complement each other, and align with national strengths.

**SAM ADLEN:**

Clusters are vital for innovation and growth. They need to integrate technologies, businesses, finance, and demand. The government should leverage clusters to create significant vehicles for UK growth, ensuring comprehensive support and investment.

**NELLY PHILLIPS:**

Clear success metrics and prioritization are essential. Organizations must collaborate with a focus on outcomes and provide the space to deliver. A culture of innovation and focus can drive significant change.

**DARIUS HUGHES:**

We need to operate with urgency, akin to a pandemic response. Government should set up frameworks and then step back, allowing industry and academia to innovate and collaborate effectively.

**BARBARA GHINELLI:**

Excellent points. We need to learn from crisis responses to foster collaboration and focus on key steps for future initiatives. Thank you all for this insightful discussion.

**Closing:**

Thank you very much to our panel. Please join me in appreciating their contributions.