CRITICAL CHALLENGE:

Disruptive technologies – risky or fundable? Is it all about AI?

Facilitator:
Ana Wolsztajn, Investor Ecosystem Digital and Tech Lead, Innovate UK Business Connect

Panellists:

Ben McClure, Venture Capital & Acceleration, Wingman Partners

Musty Rampuri, Business Director, Duality Quantum Photonics

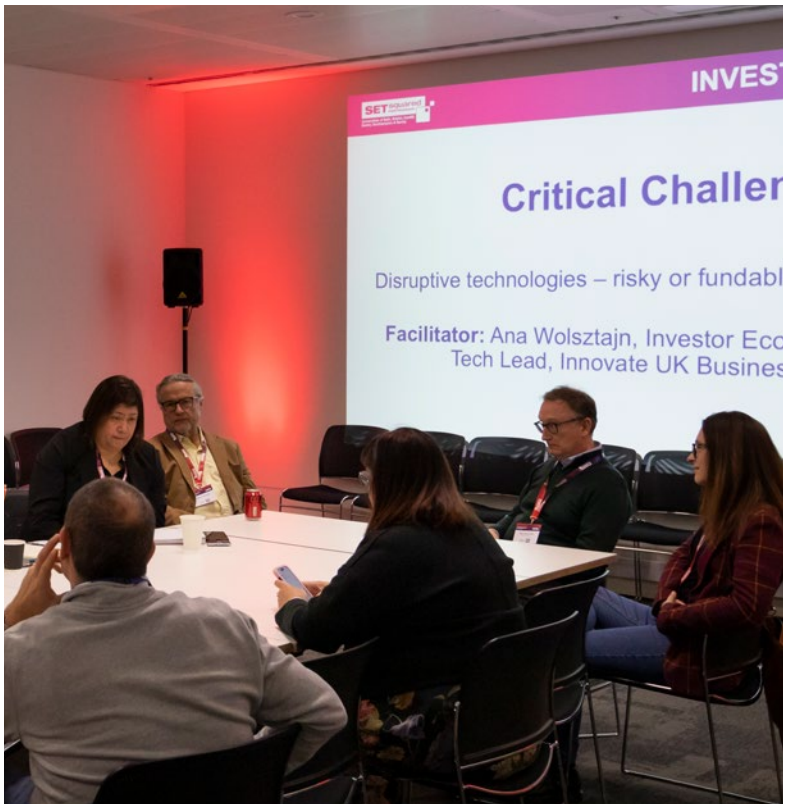
As we enter an era of rapid technological advancements, the UK finds itself at the heart of a disruptive tech revolution. From artificial intelligence (AI) and quantum computing to photonic chips and cutting-edge innovations in green energy, the nation's landscape of deep tech is thriving.

AI has garnered significant attention in recent years, as reflected by the UK government's unveiling of its AI Opportunities Action Plan in January, which aims to position the UK as a global leader in AI innovation.

The impact of that AI plan is yet to come to fruition, and in 2024, the global investment landscape shifted, with rising interest rates and geopolitical uncertainties making investors more cautious. This has led to questions about the financial risks associated with disruptive technologies, the sustainability of the AI boom and whether the bubble has burst.

Are disruptive technologies too risky for investors, or are they fundable? Is it all about AI, or are other disruptive technologies vying for attention? To answer these questions, SETsquared's Investment Futures brought together experts to explore the landscape of disruptive technologies and what they mean for investors. They also examined the role of universities and the government in fostering innovation and creating an environment conducive to investment in disruptive technologies.

Leading the panel, **Ana Wolsztajn, Investor Ecosystem Digital and Tech Lead at Innovate UK Business Connect,** has seen first-hand how the land lays for technology and investment, and she posed the questions and helped steer the discussion.



What are the most promising disruptive technologies beyond AI?

Beyond AI, several other disruptive technologies are making significant strides and attracting investor interest. One such field is quantum computing, which promises to revolutionise industries by offering unprecedented computational power.

Musty Rampuri, Business Director of Duality Quantum Photonics, is developing photonic chips that use light instead of electricity for information processing, offering significant advantages in speed and efficiency. “Quantum computing has the potential to solve complex problems that are currently beyond the capabilities of classical computing,” explained Musty. “We’re seeing increasing interest from pharmaceuticals, logistics, and cybersecurity sectors.” He emphasised the importance of scaling production and collaborating with large businesses to drive adoption. “Ultimately, it’s largely going to be big businesses who will buy into and absorb new technologies.”

Another promising area is sustainable and clean technologies, which are gaining traction as industries strive to meet ambitious net-zero targets.

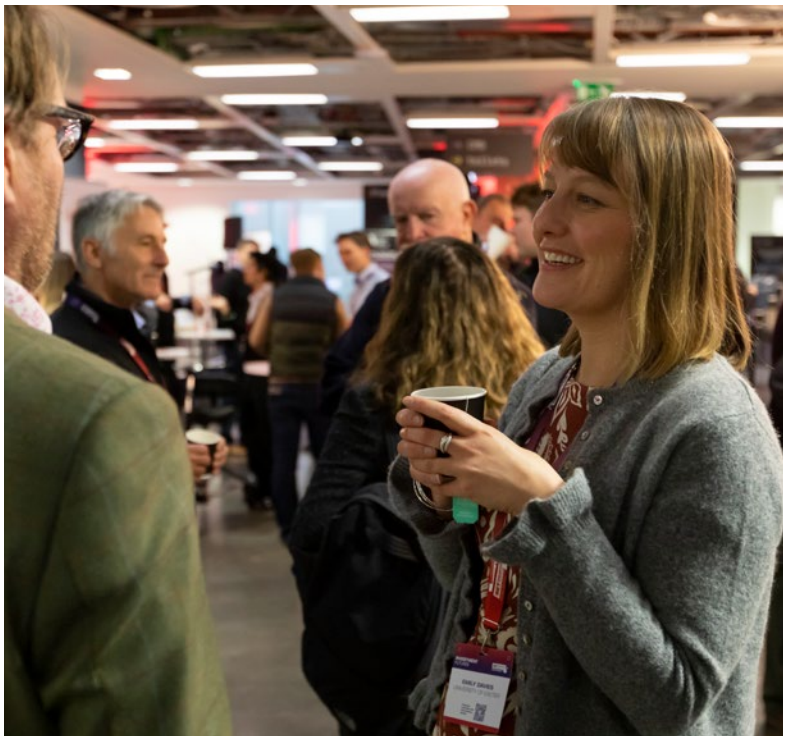
> *“Investors are actively looking at cleantech solutions that focus on energy efficiency, carbon capture, and circular economy models. Technologies like next-generation batteries and green hydrogen are particularly exciting,”*
> ***Ana Wolsztajn***

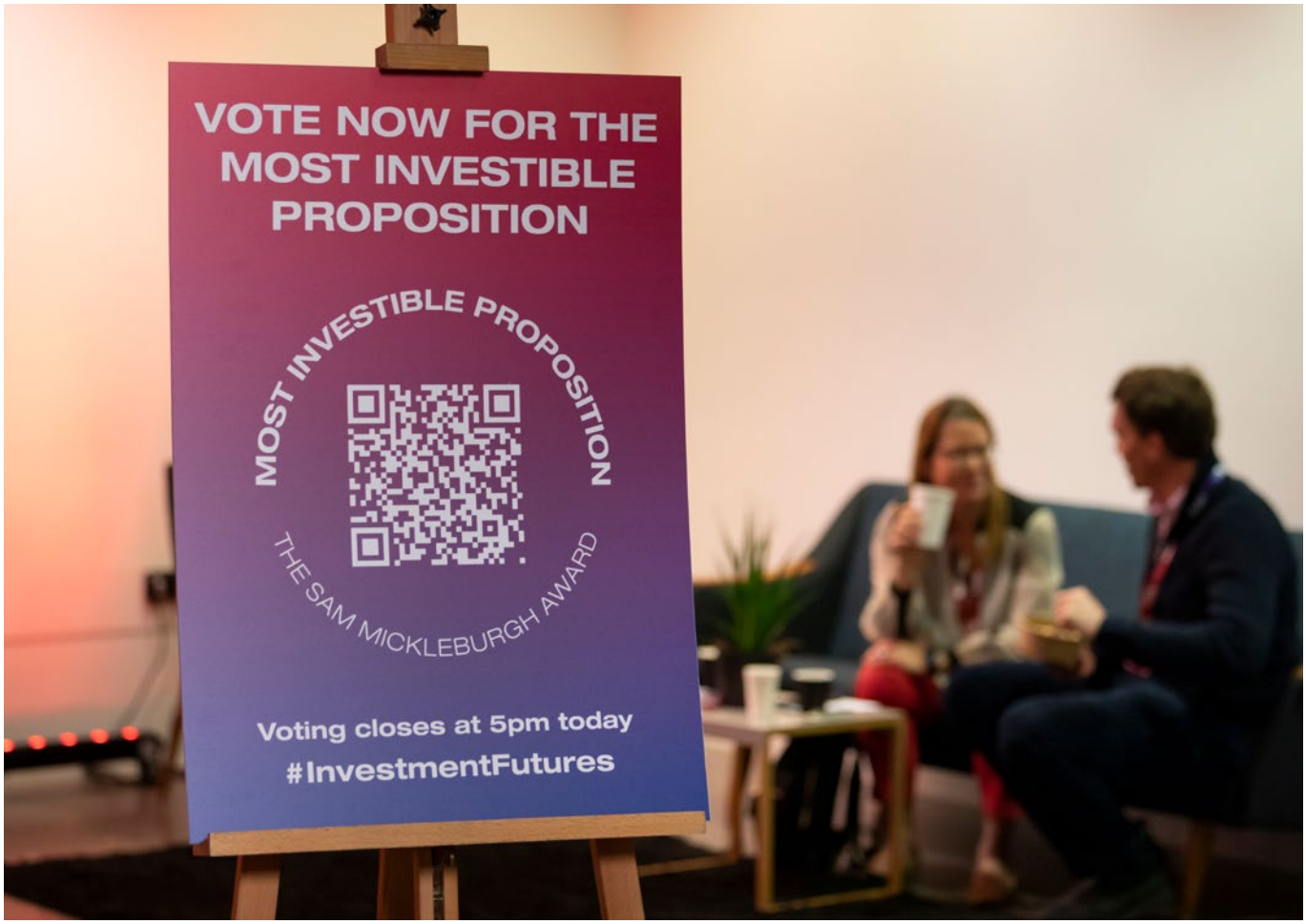
Advanced materials and nanotechnology are poised to transform manufacturing processes and product development. These technologies offer enhanced durability, lightweight properties, and improved performance across various industries, including aerospace and healthcare.

Finally, biotechnology and life sciences continue to show great promise, with breakthroughs in personalised medicine, gene editing, and synthetic biology. These advancements have the potential to revolutionise healthcare, making treatments more effective and tailored to individual patients.

These technologies hold significant promise, and the true disruptors of tomorrow may emerge from unexpected areas. Ben McClure, a venture capital fundraiser with EIT Digital, focusing on deep tech companies seeking Series A and Series B funding, said: “True disruption often comes from unexpected quarters; they are the ones that come out of left field and completely change the game.”

The panel concluded that it is essential to remain open to new ideas and to evaluate technologies not just on their technical merits but also on their potential to solve real-world problems and create value, as Ana Wolsztajn explained: “The most promising technology depends heavily on the specific problem it aims to solve. Disruptive technology needs to be matched with a real-world need. It’s not just about the technology itself, but about its potential to address a significant challenge or create a new market.”





How can deep tech companies navigate the current investment landscape?

Ben McClure provided a comprehensive overview of the current fundraising climate for tech start-ups. According to Ben, while investment volumes have decreased in the last 18 months, the market is returning to a "normal" level compared to the exuberant highs of 2021 and 2022. "Raising money has always been hard, and what we're seeing now is a return to typical levels of deal activity," he explained. "The unusual investment boom we experienced during the pandemic, where interest rates were low and venture capital poured into start-ups, has corrected itself."

Ana Wolsztajn also weighed in, emphasising the need for strategic positioning in today's investment climate. "It's not just about having an innovative product anymore; investors want to see a clear pathway to scalability and market adoption," Ana said. "Companies that can effectively articulate their value proposition and demonstrate tangible market demand stand out."

Identifying and evaluating disruptive technologies requires a keen understanding of the technology and the market. Ben McClure emphasised the importance of looking beyond the hype: "Investors are interested in businesses that will grow and make them a lot of money. It just so happens that there's a tendency for tech companies to grow fast." He stressed the need for disruptive technologies to solve real problems and have a clear path to commercialisation: "Start-ups need to show they've got traction, ideally evidence of sales – investors like sales, and a strong founding team that's motivated and intelligent."

What are the biggest challenges and opportunities in funding disruptive technologies?

Funding disruptive technologies presents a unique set of challenges and opportunities. Despite growing investor interest, securing sufficient and timely funding remains a significant hurdle for many start-ups.

> *"The biggest challenge is the high-risk nature of deep tech. Investors are often hesitant due to long development cycles and uncertain returns, which can deter traditional venture capital,"*
> ***Ben McClure***

Musty Rampuri highlighted the challenges of scaling up production: "Scaling up production requires significant investment in infrastructure. Moving from a prototype in a university lab to mass manufacturing can cost tens of millions of pounds. Doing this in the UK adds another layer of complexity, but it's crucial for translating research into real-world impact."

Another challenge is navigating regulatory complexities, particularly in industries like healthcare and finance, where compliance requirements can slow innovation. Musty Rampuri pointed out: "Many deep tech start-ups face significant regulatory hurdles that can delay time-to-market and deter potential investors who seek quicker returns."

On the opportunity side, the growing recognition of deep tech's transformative potential has led to increased interest from both private and public sector investors. Ana Wolsztajn highlighted the UK's commitment to supporting disruptive technologies through various funding initiatives: "Government-backed grants and accelerator programmes are creating pathways for start-ups to access non-dilutive funding and connect with investors who understand the sector's long-term potential."

Furthermore, corporate venture capital (CVC) and strategic partnerships offer promising opportunities for start-ups to secure investment while gaining access to industry expertise and market channels. "Partnerships with established industry players can provide not just capital, but also mentorship, resources, and credibility," Ben McClure added.

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How can disruptive start-ups connect with the right investors?

Securing funding is crucial for any disruptive technology start-up's success, and they must connect with the right investors who align with your vision and long-term goals.

Musty Rampuri acknowledged the challenges of finding investors: "You've got to kiss a lot of frogs," he joked, referring to the often-arduous process of pitching to numerous investors. "You end up going to many events trying to engage with investors. If you're outside of London, there are often fewer events around. Inevitably, you travel around the UK or go globally to find the types of investors who have the appetite and, I guess, the longevity of their funds and the depth of the funds to see you through."

Ben McClure emphasised the importance of building relationships with investors early on: "It's about cultivating those connections. Don't just reach out when you need money. Engage with investors throughout your journey, share your progress, and build trust. It's about finding the right investor and is not just about securing funding – it's about finding a partner who understands the long-term vision and can provide valuable guidance and support.

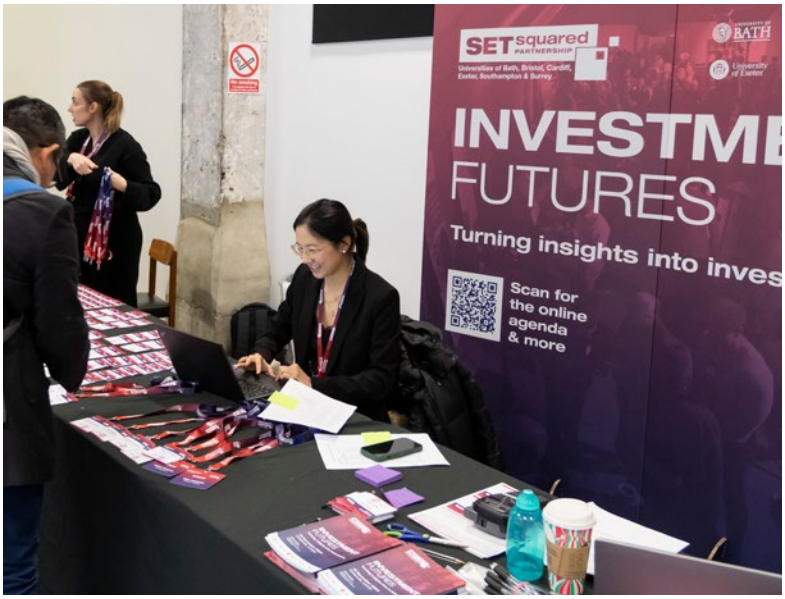
"It's important to be selective and remember it's a two-way street. Investors want to see a compelling vision and a well-defined path to commercialisation. Start-ups that can clearly articulate their mission, market potential, and differentiation stand a better chance of securing funding," he added.

Ana Wolsztajn supported the importance of maintaining a dialogue with investors:

> *"Engaging with investors early and keeping them updated on milestones and developments builds trust and increases the likelihood of investment when the time is right."*

Start-ups can also benefit from joining incubators and accelerators that provide access to a network of potential investors and mentorship opportunities. Musty Rampuri shared his experience: "Being part of an accelerator programme helped us at Duality Quantum Photonics to refine our pitch, connect with key stakeholders, and ultimately secure the funding we needed to scale."

Ana Wolsztajn highlighted the role of networks and intermediaries in connecting start-ups with investors: "Start-ups need to focus on connecting with investors with a track record in their specific sector. Attending industry events, leveraging accelerator programmes, and engaging with government-backed initiatives can significantly increase visibility." She signposted organisations like Innovate UK and SETsquared, which provide platforms for start-ups to showcase their technologies and connect with potential investors: "Resources are available to help start-ups navigate the investment landscape. It's about tapping into those networks and leveraging their support."



Is it all about AI, or has the AI investment bubble burst, or is it just evolving?

Ben McClure pointed out that the 'gold rush' mentality surrounding AI has cooled significantly over the last couple of years, as investors have become more selective about where to place their bets.

> *"A few years ago, it was all FOMO – fear of missing out – around AI. Investors were throwing money at anything that had 'AI' on the front page of the pitch deck, but that's no longer the case. Now, they're taking a closer look to see what the business model looks like and asking, 'What is the real problem this AI is solving?'"*

Ana Wolsztajn provided insight into the evolving investor mindset: "We're seeing a more pragmatic approach now, where investors are scrutinising AI start-ups with a finer lens. They want to ensure AI solutions have a sustainable business model and are not just riding the hype."

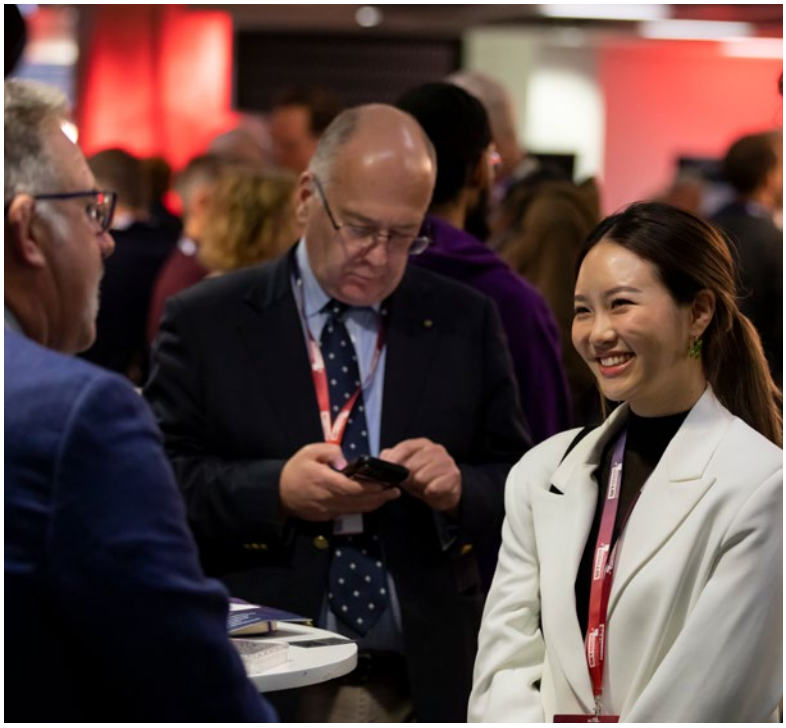
She added: "A few years ago, you were very likely to be first to market. Right now, it's a red sea; everyone is doing something with AI, and there's been a shift in the pace and nature of investment decision-making.

"I remember in 2021, everyone was on Zoom, we hardly slept, and we were chasing those deals like there was no tomorrow. Now we have time; we review, there's less FOMO, but there's more well-informed decision-making," she added.

Ben McClure acknowledged that there was indeed a degree of 'bubble' behaviour in the AI investment space and a tendency for companies to overstate their AI capabilities to attract funding. He agrees that investors have become more discerning, recognising that not everything labelled as AI is truly disruptive or commercially viable. "Businesses must show evidence of real-world problem-solving, that their aims are achievable and scalable and demonstrate that customers are waiting to pay for their technology."

Musty Rampuri added another layer to the discussion, pointing out that the economics of AI are still in flux. The cost of infrastructure, particularly for computationally intensive tasks like training large language models, remains a significant hurdle. He argued that alternative computing architectures, such as the photonic chips his company is developing, could offer a more sustainable and cost-effective solution in the long run.

Overall, while the initial hype for AI technologies may have diminished, the long-term potential of AI remains undeniable, and it will continue to evolve. Investors are more strategic, focusing on infrastructure, sustainability, and real-world applications that can deliver tangible value.



What is driving the shift towards AI infrastructure?

While AI continues to capture the attention of investors, the focus has shifted from consumer applications to the infrastructure that supports AI systems. Ben McClure highlighted that vertical AI solutions, which are built on proprietary datasets and target specific industries, are now viewed as having greater long-term value:

"We've seen a lot of excitement around applications like ChatGPT, but now investors are realising the potential in vertical AI and the infrastructure needed to sustain them. Investors are more cautious and recognise that AI infrastructure, such as data centres and computing power, will underpin future innovations."

Musty Rampuri reinforced this point by highlighting AI's environmental and financial implications. As AI systems grow in complexity, the energy demands of data centres and computing operations become increasingly significant.

"The operational costs for AI infrastructure are huge," said Musty Rampuri.

> *"We're seeing AI data centres built next to power stations because of the sheer energy required to run them. It's not just about developing the technology; it's about making it scalable and sustainable."*

Ana Wolsztajn added: "Sustainability is becoming a key factor for investors. Companies that can align their AI infrastructure with green initiatives will have a competitive edge."

What role should universities and the government play in fostering disruptive technology development?

The success of disruptive technologies in the UK is not solely dependent on private sector investment; universities and government initiatives are crucial in nurturing innovation. Universities serve as incubators for cutting-edge research and act as a bridge between academia and industry. Many groundbreaking technologies, including AI and quantum computing, have their roots in university research labs.

"Universities provide the foundation for deep tech innovation by offering resources, talent, and research capabilities that start-ups can leverage," said Ana Wolsztajn.

"Through collaboration with industry partners and government-backed programmes, these institutions create a thriving ecosystem for emerging technologies."

Government support is also critical in providing the necessary funding and infrastructure to scale deep tech innovations. Initiatives such as Innovate UK's grant programmes and the Catapult Network provide vital resources that help companies transition from research to commercialisation.

"The UK government is committed to fostering an environment that supports disruptive technologies," said Ben McClure. "Through funding schemes and policy frameworks, they ensure that deep tech start-ups have the runway they need to succeed."

The collaboration between universities, government, and the private sector will be essential in addressing challenges such as access to capital, regulatory hurdles, and market entry barriers. A unified approach can ensure that the UK remains competitive in the global deep tech landscape.

IN SUMMARY

The discussion provided valuable insights into the evolving landscape of disruptive technologies in the UK. While AI continues to dominate the conversation, the importance of supporting infrastructure, government backing, and collaboration with universities cannot be overstated.

Investors are becoming more selective, seeking businesses that offer tangible solutions and long-term growth potential. The role of sustainability and the need for scalable, energy-efficient technologies are key factors shaping investment decisions.

The future of disruptive technologies lies in strategic partnerships, strong regulatory support, and continuous innovation. With the right mix of policy support, investment, and innovation, the UK is well-positioned to harness the potential of disruptive technologies and create a thriving ecosystem that benefits both businesses and society.

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