

# GLOBAL THINKERS



## Investment, technology and data driven.

1st. edition

Think about the future. Question assumptions. **RAISE THE BAR.**

# #ConectingIdeas

“  
**Big risks can  
bring big  
rewards, and  
with them,  
progress and  
innovation**”

**Laura Bernal Vergara**

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*Laura's and Charlotte's views are their own  
and do not represent a UoE opinion.*

*Laura Bernal Vergara and Charlotte Waugh.*

**Edinburgh is a very special place - it's the place with the ambition to become the Data Capital of Europe!** That's why we contacted the Bayes Centre, the University of Edinburgh's Innovation Centre for Data Science and Artificial Intelligence and its Data-Driven Entrepreneurship (DDE) initiative, which aims to boost entrepreneurship and support its research across the world's economies.

**Welcome!** To a conversation where we discuss **investment, technology and innovation issues in the region and key performance indicators for Boards of Directors.** We are joined by *Charlotte Waugh - Enterprise and Innovation programme lead for Edinburgh Innovations and Laura Bernal Vergara - Venture Builder Incubator Programme Manager* which is delivered by the Bayes Centre in collaboration with Edinburgh Innovations.



**Considering that in Latin America political continuity is not long term, how could the public and private sector establish a strategy to benefit from public policies in order to increase investments in technology and innovation?**

**Laura:** In our opinion, an important part comes down to processes and how information and participation is produced; it requires a lot of relationship building and making sure that people know other people within important organizations who are looking and working to increase investment in technology and innovation. **Attracting investment into an ecosystem requires the involvement of different parties: public and private organizations, including academia.**

Networking events are a fantastic way to bring these conversations together.

Relationships will be the mechanism to identify and understand the strengths and desires that can help shape a strategy. Policy should be an enabler, but it doesn't happen overnight and often technology moves much faster than policy, so it is very important to keep the dialogue and methods of engagement open.

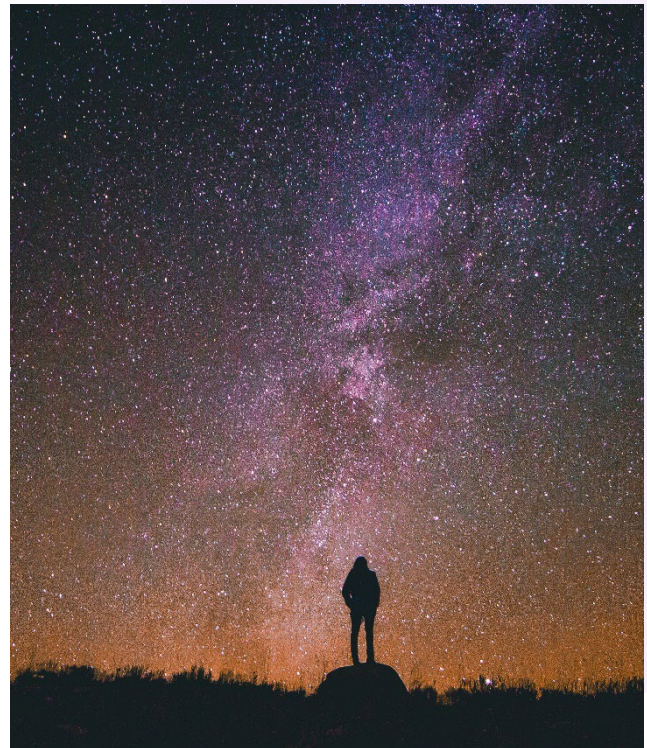
No country is perfect, and it will be very rare that policies fit well with a strategy from the start. The private sector is much more agile than the public sector, and this is a very important thing to bear in mind. Increased collaboration between public and private organizations can enable new developments in setting and implementing a strategy.

An exciting and rewarding part of innovation is that we don't know exactly what the outcome will be. Technology can be a disruptive factor and is a constant tug-of-war between policies and organizations.

Here at the University of Edinburgh, we have held events with investors in Parliament to show both Government and equity investors what we are doing at the University for start-up creation and technology development, and we have talked openly about the gaps and issues that policy and private organizations could support.

Another important aspect of creating an innovation and technology development strategy is to have a well-defined vision. Edinburgh has set itself the goal of being the data capital of Europe, and that vision, broader than that of each individual part of the ecosystem, helps each organization to think about how it can contribute to this and work together to make it work. That is also one of the reasons why the Data Driven Entrepreneurship activity was initiated.

One last aspect, to think about political continuity is to take into account political cycles. In Colombia there is a 4-year cycle. Organizations should have in their strategic planning built in these cycles.

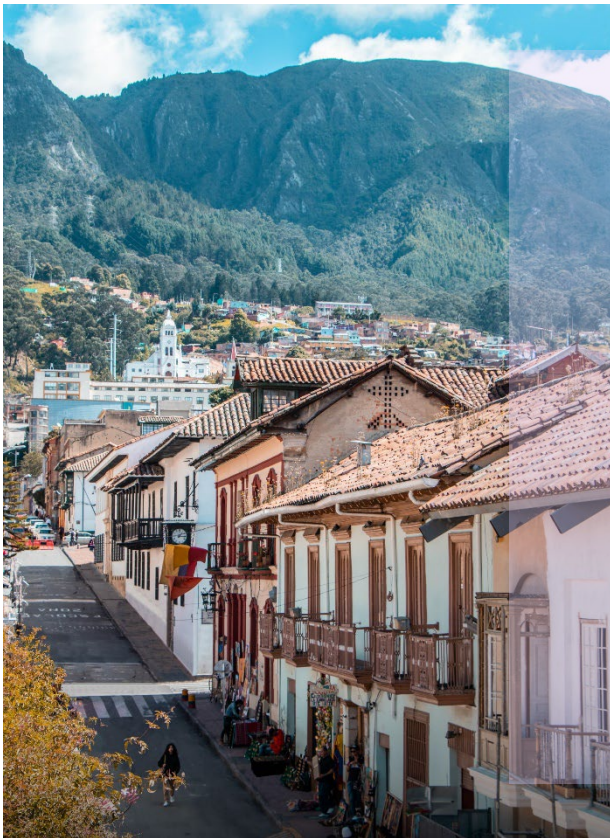


As part of our business, we work with other charities and government organizations. Understanding their decision-making process changes our strategy. From time to time I know that my business must be to re-establish relationships and develop solid case studies to show the work we have done. Political continuity in Latin America may not be long term, but it is predictable, which is a variable to consider.

**Charlotte:** The political landscape in the UK is also short-term, so we also suffer the consequences of short-term decision-making. However, **there are global goals that can help shape private decision-making on technology support - the UN Sustainable Development Goals are a good example. A CSR that reflects these goals will guide long-term investment and technology development in key areas.**

Short-term policies can be quite supportive of technology and investment depending on political cycles: they can be legislative and funding to "kick-start" activity in certain directions. Tax breaks for investors are a good example: they need not be long-term, but can simulate technology investment in key areas to enable future growth. However, it is important for policy makers to keep in touch with market needs and investment flows for this to be effective.

**If we review, the gap that exists in Latin America compared to other continents in R&D investments is very low compared to each country's GDP, how do you think this gap can be closed in an accelerated manner, and how can the return on these investments be measured in tangible KPIS for Boards of Directors?**



**Laura:** I would start by looking at why the gap exists. One of the issues is the type of challenges that Latin American countries face compared to challenges in other continents. **R&D projects are high-risk, high-reward gambles.** It's like investing in cryptocurrencies, you don't have the certainty that it's going to go anywhere, but it has the potential to transform entire industries and quickly provide higher returns on investment, that can be seen in many different ways, such as international investment, accelerated process of new innovations, new industries, new jobs.

Some countries have a higher risk tolerance than others. The real question is how to de-risk the outcomes of R&D projects and how to design projects that attract international investment from the outset, aligning projects with global challenges. Each country has its own agenda, but when it comes to levelling investment, collaboration is key.



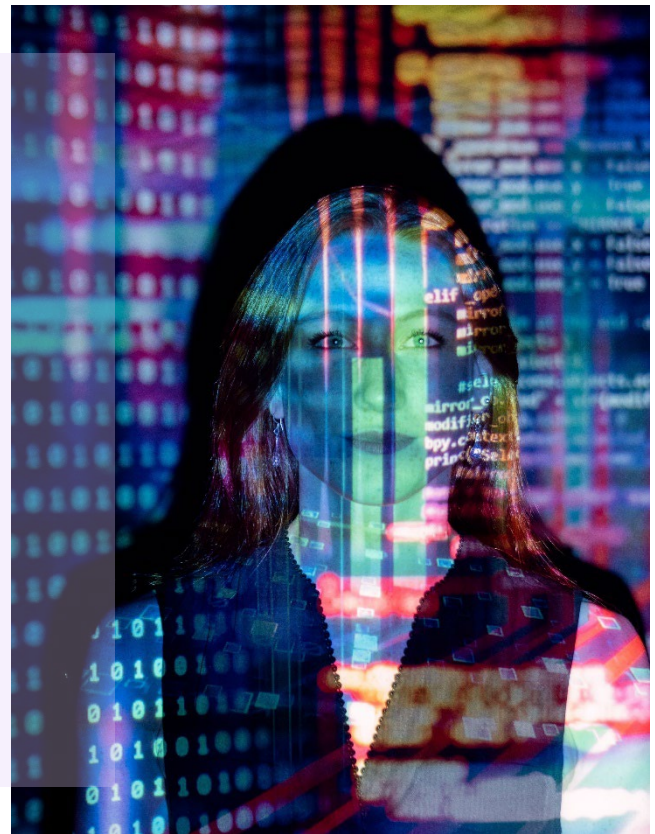
There are common problems around the world, such as energy poverty, climate change, the future of finance, and so on. **A Latin American country alone may not be able to invest a larger proportion of its GDP in R&D projects. However, if the projects are aligned with problems that need to be solved in industry and the world at large, the investment need not be 100% public. Private companies also have a responsibility to fund R&D. We see this a lot with the companies with which we work.**

We see this a lot with the companies we work with. R&D and innovation in the UK is not only funded by government bodies, but also by private investment. In fact, the government has adapted with new policies and programs to make this relationship more effective and to leverage private investment with mechanisms such as tax incentives or support for private companies with matched funding to create R&D.

**Universities also play an important role in creating innovation and technology, research is often an undervalued enabler. Academia and industry must maintain a constant dialogue. Universities are the home of knowledge that should not be forgotten.**

In the UK, in the framework of the DDE program and the Incubator that we lead, one of the big components is how to create a cultural change in academia to encourage the translation of research to the market and increase its impact. There is research that has already been funded and most of the time its importance is not seen because universities and organizations work in silos.

In terms of key performance indicators, international investment is relevant, talent creation and attraction, company formation and growth are important issues, which need to be followed up. At the university we monitor investment levels and follow companies as they move from seed to series A, B and so on. Developing a strong R&D capability takes time and a source of innovation. D requiere tiempo y una fuente de innovación.



### **In your experience, what has been the key to selling the investment in these technologies internally to sponsors?**

**Laura:** Understand the motivations and show the opportunity aligned with them. Anything that can make a company solve a problem or increase revenue is part of a motivation to invest. Showing what the opportunity is and the value it brings is key.

When a VC invests, they know that in a portfolio of ten companies, eight may fail, yet the possibility of each investment is so high that if only two companies return the investment, they will be able to compensate for the eight that failed.

When it comes to securing investments in technologies, you need to be able to demonstrate how that technology has the ability to offset investments that will not work. The most important thing is to have a clear understanding of the problem being solved or how a technology can increase wealth creation and create value. To get to this point, the development of a technology cannot be isolated.

### **From your point of view, how have the ethical and data privacy aspects worked in the implementation of artificial intelligence?**

**Laura:** Regulation has definitely raised companies' awareness of data privacy and increased ethics in AI models. There is still a lot to do when it comes to ethics in artificial intelligence, because the models are trained by humans and their biases and sometimes data can be analyzed in a way that might not be beneficial to a sector of the population or might have a dangerous outcome. There are many issues and considerations to think about that we have not yet discovered.

Ethics is definitely something that has been increasingly embraced by organizations and we see this with the creation of companies specializing in looking at the ethics of artificial intelligence models, there is also a lot of new research being generated, however, as the technology evolves this is an area of expansion and discussion that will need the rapid development of regulations and policies to make it as ethical as possible.

If we leave it to the goodwill of humans and their ethics, we don't think it will be given the importance it deserves, it is not natural for organizations and individuals to ask themselves some questions to be more ethical. It is similar to climate change, individuals need to understand and acquire a mindset to mitigate potential negative outcomes.

**Charlotte:** There is also a need to build "trust" around artificial intelligence. People need to be confident that data is being used correctly and that artificial intelligence is a good thing, not a danger. Regulation and legislation are, therefore

its important to help build that trust and enable AI to be used; without such a framework, AI could have negative outcomes.

### **What role do startups play in the maturity of data-driven processes and open data?**

**Laura:** Big responsibility, startups are agile and as technology advances data will continue to grow in importance. Universities also have a big responsibility here and that is why we support the creation of new startups that have data as one of their main assets.

Data means knowledge and the more we learn to work with it, the greater the benefits and the fewer the drawbacks. Startups are excellent at spotting opportunities and, because they are agile, they have a greater capacity to be disruptive compared to large, established corporations that have a lot to lose if something goes wrong. Startups are risky by nature, but again, big risks can bring big rewards, and with them, progress and innovation.

**Charlotte:** Making open data available to startups and industry looking to meet market needs is a good thing and is only now maturing. The entrepreneurial mindset of founders is necessary to turn data into innovation, so they have a lot to say in helping to shape how data is used. It is also important how this data is collected, stored and made available, so that innovative companies and founders have the access they need.

## What are the keys that Boards of Directors must take into account in order to ensure that the implementation of *Data Driven* models is sustainable over time?

**Laura:** What data do you need and for what purpose. A relevant point of the legislation (General Data Protection Regulation (GDPR)) is to be able to explain why you are collecting a specific set of data and for how long. Collecting data for the sake of collecting data can raise ethical issues, as there is no rational reason behind it. So why collect more data than necessary?

The sustainability of data-driven models will depend on the strategy that is designed and how it is monitored. Having a plan or strategy does not mean that things cannot be changed, it just means that the strategy must be flexible.

Data usage performance analysis and agile iterations will make Data Driven models sustainable. An important part of

when biases can occur, how the data is collected and how diverse and complete it is.

**Charlotte:** You have to consider how and why you give access to data. **Managers have a responsibility to use data ethically and to ensure that their organizations remain at the forefront of the industry, so it is recommended to regularly review legislative and internal harmonization.** Also, be aware of joint collaborations on data models where there is an opportunity for wider benefit. **Data models provide the opportunity to make existing activities more sustainable and efficient.**





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