Roadmap for Science Development towards Innovation and Economic Impact

From Science to Economic Development: The Integrated Cycle

Science-driven technological development is one of the main pillars for the economic prosperity of a country or region. Yet, its impact only materialises when there is a clear and effective articulation between **knowledge generation, applied innovation, and business adoption**.

Science should not be perceived as a linear or opportunistic process, nor as a stable sequence of isolated outputs. Instead, it requires **strategic, bold, and forward-looking planning**, while remaining flexible enough to adapt to a constantly evolving context.

A Roadmap for Science Development

In the software industry, product management has gained a decisive role, becoming a strategic function in the success of technology companies. Inspired by agile project management methods, the roles of product owner or product manager act as **enablers between the needs of final customers and the capabilities of development teams**, ensuring that applications are conceived to deliver real value and respond directly to users' expectations.

This logic — centred on **value creation and impact** — must also be applied to the domain of **science and innovation**.

We should therefore **inspire and enable our teams** to identify and promote new functional profiles capable of foreseeing, driving, developing, and overseeing the evolution of **research lines**, from fundamental science to market transfer. This requires **strategic planning that is transparent, coherent, and aligned across the organisation**.

Just as companies often face functional silos with conflicting expectations and interests, so too must INESC TEC ensure that science and innovation do not grow apart. To bridge this organisational gap, it is essential to foster **ambidextrous leaders** — individuals who can look at current research opportunities while building bridges for their future adoption and transfer. These leaders must establish the bridge between science and innovation-oriented teams and promote a bidirectional channel of communication.

In other words, **visionary managers of research lines**, able to design and implement integrated roadmaps of science and innovation, guided by agile strategies and oriented towards impact.

Conclusions

This model redefines science from a siloed and isolated process into a dynamic system that interconnects research, innovation, and the economy. By positioning the roadmap as a medium-term strategic asset of INESC TEC — rather than a yearly planning exercise — we establish a forward-looking vision that ensures knowledge is consistently transformed into applicable solutions with tangible impact on industry and society, while continuously opening new pathways for research. In doing so, we promote a **sustainable cycle of scientific development, technological innovation, and economic growth**.

Author: António Almeida