From Technology Transfer Office (TTO) to Knowledge Transfer Hub: the key role of open source software

Ana Rita Rego Lopes e Daniel Fernando Marques de Vasconcelos

INESC TEC's future depends on growth—in capabilities, interdisciplinarity, visibility, and knowledge valorization—rather than simply sustaining current practices. Our position between science, technology, and society means long-term relevance and impact stem from progress, not stability. Growth requires institutional maturity, stronger cross-domain ties, and deeper organizational integration. Like the brain, our strength is in branching and interconnectedness, promoting adaptability and sustainability.

At the heart of this transformation lies the evolution of the Technology Transfer Office (TTO) into a true **Knowledge Transfer Hub**. The TTO must move beyond its traditional role in negotiating intellectual property agreements. It should become a channel (hub) fully focused on impact and open to a wider range of R&D results, such as open source software, apart from patentable technologies. The goal is to be an internal partner who maximizes the impact of any results, such as discovering new users.

Protecting institutional assets is part of that responsibility. Public investment in research must return to society not only as publications but also through economic, social, and technological impact. Intellectual property management is not about limiting freedom; it is about balancing rights and responsibilities. Freedom carries a price: ensuring knowledge is preserved, valorized, and made impactful.

RTOs across Europe face similar challenges. Benchmarks conducted with TTO Circle members indicate that managing the high productivity of open-source software is particularly challenging in large, complex scientific organizations, such as RTOs. Software development underpins INESC TEC's work, with Open Source Software (OSS) being a key element. OSS is not a business model itself but a platform enabling various business strategies and greater impact. Yet it is legally complex, combining copyright, patents, trademarks, and trade secrets. Effective OSS engagement, therefore, requires informed choices, institutional guidelines, and specialized expertise to ensure solid and rational strategic decision towards to impact.

The rise of Open Source Program Offices (OSPOs) in leading institutions like CERN sets a valuable precedent. INESC TEC should adopt a similar approach by integrating an OSPO function within its Knowledge Hub, aligning it with the TTO, SAS, the Board, and selected research centers that actively use or are interested in open-source software (OSS). Effective OSS governance requires clear KPIs, enhanced visibility, robust post-project management, and community building. Principles of continuous improvement, responsiveness, autonomy, empowerment, and responsibility guide this collective initiative. Additionally, new metrics should be established to measure the impact of OSS.

OSS also plays a unique role as a demonstrator, by lowering barriers to collaboration, piloting new approaches, and building communities. INESC TEC already has examples — from dual licensing strategies to the integration of INTERCONNECT results into the Linux Foundation — but challenges remain: managing OSS–patent interfaces, developing ethical models like CAITE, and balancing proprietary IP cultures with openness. These are not contradictions, but opportunities.

Moving towards a Knowledge Hub and an OSPO are not ends in themselves, but means to ensure that INESC TEC delivers societal and economic impact, remains a leader in knowledge valorization, and evolves into a more resilient, future-ready institution.