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**National
Associations
Advisory
Committee**

Exploring trends and strategies to enhance spin-off process

**Data Report from National Associations Advisory
Committee (NAAC) survey**

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About NAAC

The National Associations Advisory Committee (NAAC) is one of ASTP's governing bodies, bringing together 33 National Associations from 28 countries. It serves as a vital link between European initiatives, regional Knowledge Transfer Offices (KTOs), and local innovation ecosystems.

By fostering collaboration across Europe, NAAC strengthens the European innovation system through knowledge exchange and synergy-building among national and regional stakeholders. It plays a pivotal role in shaping the future of knowledge transfer and innovation by:

- **EU representation** – Advocating for knowledge transfer at the European level
- **Knowledge exchange** – Facilitating staff exchanges and case study sharing
- **Regional capacity building** – Supporting expertise development in knowledge transfer
- **European surveys and impact measurement** – Enhancing data-driven decision-making
- **Professional development** – Offering training and capacity-building programs

Through these initiatives, NAAC enhances the efficiency and impact of knowledge transfer across Europe.

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Executive Summary

The creation of startups and spin-offs are effective strategies to fight the European Paradox. Technology Transfer Offices (TTOs) play a crucial role as intermediaries in the dissemination of research outcomes. The optimisation of the process of spin-off formation at public research organisations (PRO) is a key factor in order to foster more successful spin-offs in shorter time frames.

This report of the National Associations Advisory Committee (NAAC) sheds light onto the spin out process at ASTP member research institutions. It gathers insights into current strategies to support spin-offs from public research organisations in different European countries. The data and analysis provided may support European public research organisations in their efforts to improve and accelerate the spin-off process while respecting different setups between and within nations.

Introduction

Europe needs to close the innovation gap with the USA and China to drive growth and productivity as highlighted in Mario Draghi's recent report on the future of EU competitiveness¹. According to the report, Europe has a strong position in basic research and patenting: in 2021, it accounted for 17% of global patent applications versus 21% for the US and 25% for China. However, the innovation pipeline in the EU is weaker when it comes to commercialising fundamental research. Too much of the knowledge generated by European researchers remains commercially unexploited. For instance, a recent study² showed that US startups derive more benefit from high quality ERC funded research than European entities. In general, European public research organisations (PRO) play a more and more important role in Europe's innovation ecosystem as reported in a recent study published by the European Patent Office³. The combined number of direct and indirect patent applications originating from European universities has risen steadily in recent decades, from 6.2% of all European patent applications in 2000 to 10.2% in 2019. In this analysis, indirect patent applications have not been filed by a university but comprise inventors affiliated with a university. Over the entire period under review, universities appear to take more active control over patent protection of their research as demonstrated by the significant rise in patent applications filed directly by universities. This increase highlights also the strategic importance of universities' Technology Transfer Offices (TTOs).

Regarding the channels used by TTOs to commercialise the IP created at their research institutions, there is a clear trend towards the creation of spin-offs⁴ in parallel to traditional technology development routes such as licensing or industry collaborations. Spin-offs created from public research organisations play an important and increasing role in Europe's innovation system. Their impact in driving economic growth by translating research into commercial ventures is significant. Spin-offs not only bring innovative technologies to the market, but also create high-quality jobs, and contribute to long-term economic resilience and competitiveness.

Given the growing importance of spin-offs in the European innovation landscape, it is increasingly important to streamline the spin-off creation process within public research organisations. The spin-off route is often lengthy and complex, particularly for first-time entrepreneurs. Many public research organisations have neither defined nor communicated their policies for supporting spin-offs. Researchers and founders often lack knowledge of their institutions' commitment and services to support entrepreneurship. Without guidelines for IP transfer, negotiations can be inefficient, slow, and arduous. Strengthening the spin-off process would require building trust between all stakeholders and improving transparency. ASTP has recently published a white paper endorsed by NAAC about strategies to enhance the spin-off process in Europe. This paper provides insights into best practices and recommends that such best practices are used as a basis to build on⁵.

Awareness of TTOs is increasing, and various initiatives have been launched to enhance transparency, establish best practices, and promote stakeholder engagement⁶⁻¹³. Despite these efforts, there is still a need for a comprehensive overview of best practices related to transferring IP to spin-offs across European technology transfer. This gap is partly due to the diverse TTO landscape in Europe, with different IP policies, legal frameworks, and support mechanisms. In an effort to address already the best practices in supporting Spin-off creation, NAAC conducted a survey among its members (National Associations) to assess current policies, guidelines, and support for spin-offs. This report will delve into the working methods of major European TTOs, identifying trends, and serving as recommendations for a more efficient spin-off process.

Results

The NAAC survey was divided into two sections: the first section asked about general institutional guidelines and support offered for spin-off projects. In the second section, we conducted a more in-depth analysis about terms for transferring institutional IP into spin-offs. We received responses from 21 National Associations (respondents) revealing interesting results and trends. Major results are shown in Figures 1-9 in more detail, including the number of individual responses received for each question (n) from the total number of respondents (N=21).

Most public research organisations have a clear definition about spin-offs which are in most instances based on IP rights owned by the institution. Based on the survey results, it is evident that a significant proportion of spin-off companies are founded on intellectual property (IP) rights owned by institutions, with scientists or researchers playing a central role as founders. However, there are cases where no IP rights are in place yet and spin-offs are founded based on ideas or scientific expertise. Hence, some public research organisations make a distinction between "spin-offs" and "start-ups". They define "spin-offs" as entities based on their own licensed IP rights, while "start-ups" are initiatives launched by scientists or students without initial IP rights owned by the institution (Figure 1). Generally, spin-off activities based on IP of the organization and initiated by students are fewer than similar activities by researchers (including PhD-students).

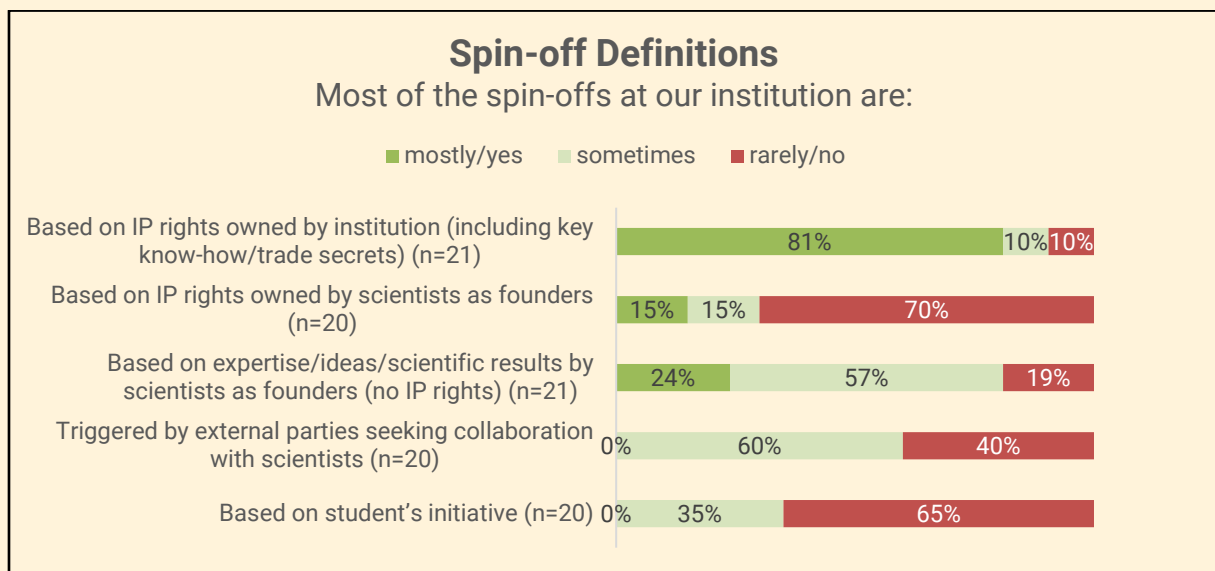


Figure 1: Spin-off Definitions
In public research organizations (n= the number of respondents) a substantial proportion of spin-offs are established based on intellectual property (IP) rights owned by institutions. In these ventures, scientists or researchers typically play a pivotal role as founders (green=mostly/yes; light green=sometimes; red=rarely/no).

Regarding existing support of spin-off projects, the results suggest that most public research organisations have various forms of support in place including administrative resources and collaborations. This support encompasses infrastructure access, advise ab out public funding opportunities, coaching and mentorship, networking, and specific programs tailored to the needs of spin-off projects. While a majority of TTOs offer such support, there is a clear lack of available internal funding opportunities either in the form of specific grants tailored to spin-off pre-incubation projects or financial investment in spin-off companies (Figure 2).

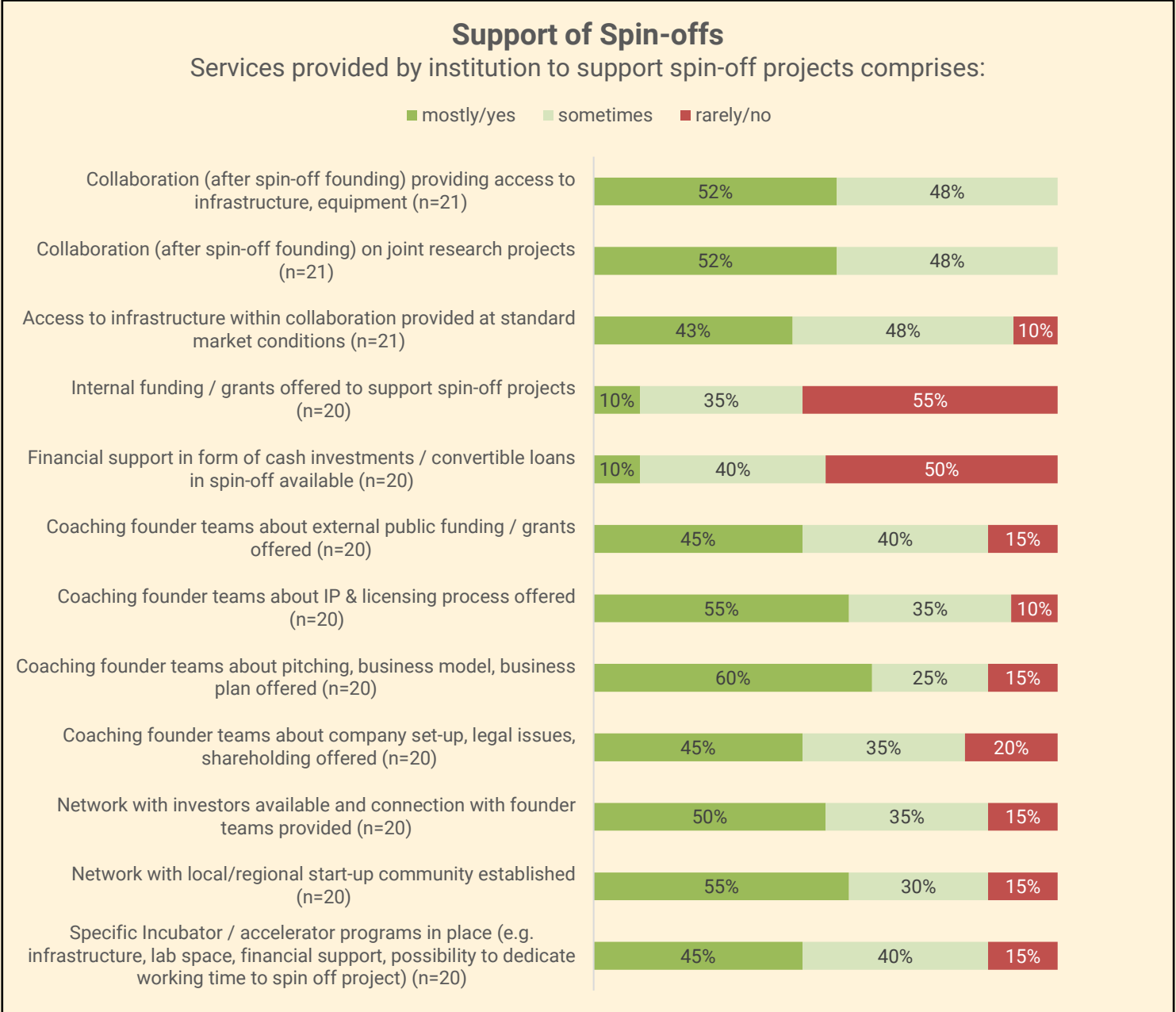


Figure 2: Support of Spin-offs
 Most public research organizations (n= the number of respondents) offer various forms of support, providing resources and fostering collaborations that are commonly made available to spin-offs (green=mostly/yes; light green=sometimes; red=rarely/no).

In line with support offered to encourage spin-off activities, most public research organisations require founders to prepare and present a business plan or at least a pitch before embarking on a spin-off journey. Additionally, it is generally requested that specific intellectual property (IP) rights must be in place. Hence, most public research organisations will not initiate the process without some effort and commitment from the spin-off team (Figure 3).

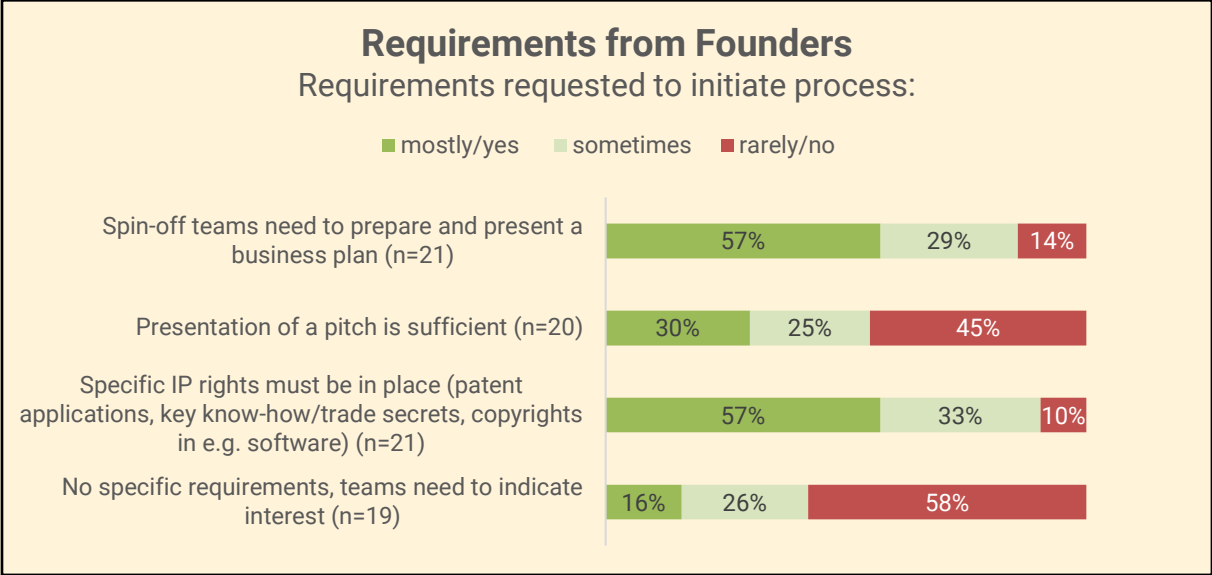


Figure 3: Requirements from Founders
Most public research organizations (n= the number of respondents) either require founders to present a business plan and establish intellectual property (IP) rights beforehand, or impose no specific requirements at all (green=mostly/yes; light green=sometimes; red=rarely/no).

Transparency regarding the spin-off process at the TTO is an important factor. The NAAC survey shows that the majority of TTOs have implemented general guidelines, with published contacts and defined responsibilities. Typically, term sheets are used to initiate and document the negotiation process. However, basic deal terms are less frequently defined, established and published. Only about one third of TTOs commit to predefined time frames within which they will manage and finalise the spin-off process (Figure 4).

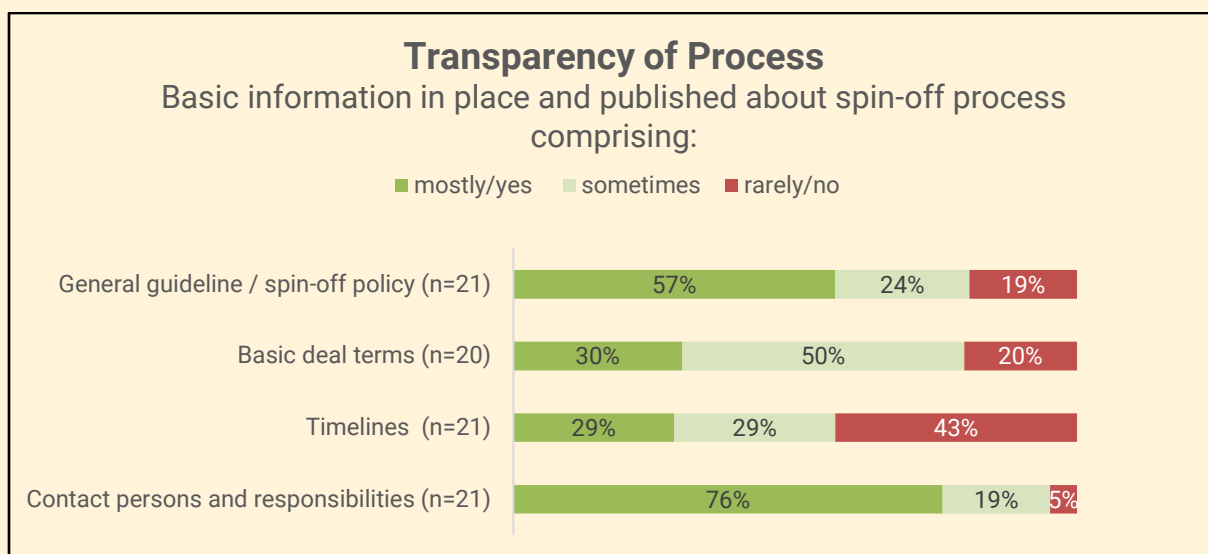


Figure 4: Transparency of the Spin-off Process

The majority of research institutes (n= the number of respondents) have general guidelines in place, including basic deal terms, timelines, published contacts and defined responsibilities (green=mostly/yes; light green=sometimes; red=rarely/no).

Conflicts of interest are among the common challenges arising during the founding process or in subsequent collaborations. It is not uncommon for founders to be simultaneously employed by both the spin-off and the research institution, sometimes with a requirement to reduce their working time at the institution. Conflicts of interest may become a concern once collaborations are established between the spin-off and the laboratory of scientists who have an interest in the spin-off, either as founders or employees. Generally, research institutions do not appear to have implemented and published guidelines for managing these conflicts of interest. In most cases, term sheet negotiations may be led by the key founders employed at a research institution. The majority of public research organisations does not provide founders the option to return to their original positions at the research institution.

The increased level of standardisation of deal terms is a hot topic of debate. We investigated which deal terms for the transfer of IP into spin-offs are commonly applied and whether any trends can be identified thereof. One section of the questionnaire focused on preferences between licensing or assignment of IP and the general structure of deal terms. For a clear majority of the respondents, assignment is not the preferred way to transfer IP to the spin-off. Only few favour assignment over licensing, while a large majority clearly indicated that licensing is the preferred way (Figure 5). Some individual responses indicated that IP assignment may be negotiable in case the spin-off is in a more mature stage or during an exit.

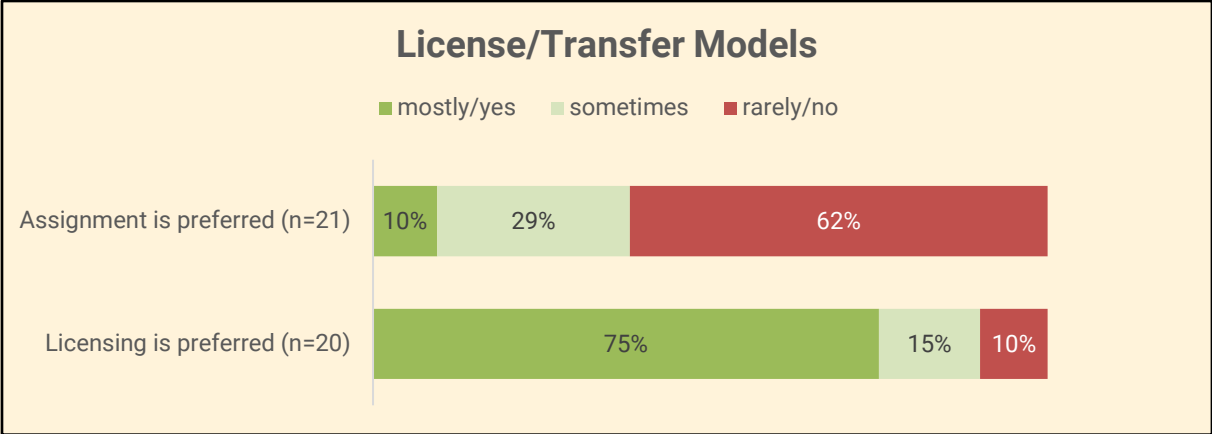


Figure 5: License/Transfer Models

Few research institutes (n= the number of respondents) favour assignment over licensing of IP to spin-offs, while the majority clearly indicated that this is not the preferred way (green=mostly/yes; light green=sometimes; red=rarely/no).

In most cases, deals based on assignment of IP are structured similarly to license agreements and contain typical license components such as milestone payments or royalties. Single one-time payments as compensation for IP assignment are not found in practice. A large majority apply market standard conditions in assignment deals (Figure 6). The data does not provide a clear trend about application of backloaded deal structures for assignment deals, meaning postponement of early payments to a later stage to protect spin-off liquidity and investors’ interest. Rather more often, this appears to be implemented on a case-by-case basis.

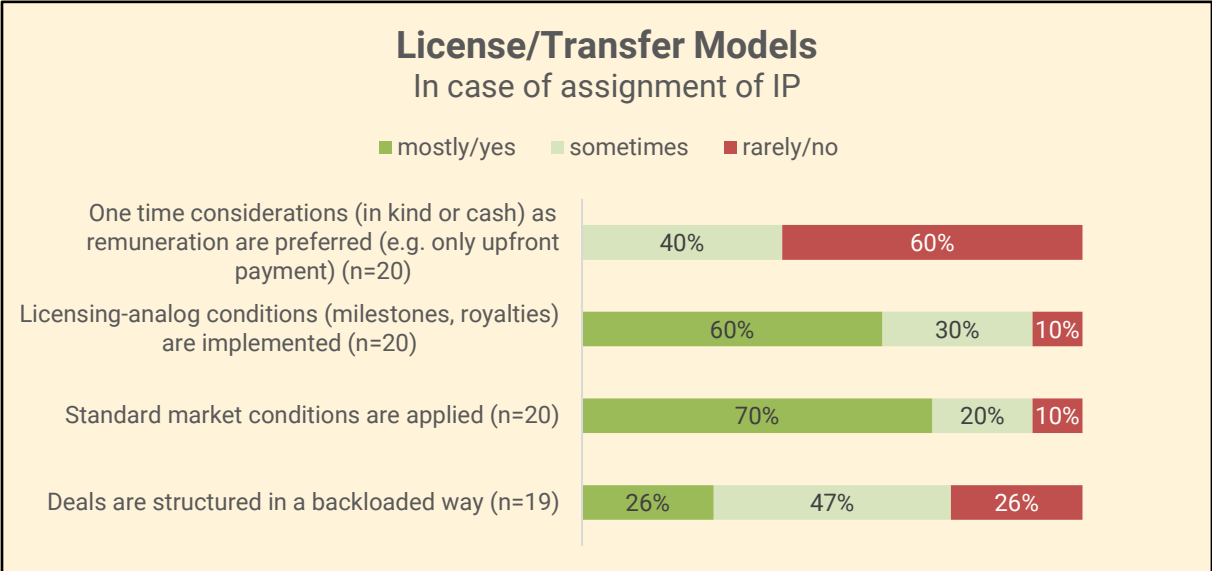


Figure 6: Deal Structure In Case of IP Assignment

In public research organisations (n= the number of respondents), deal structures based on IP assignment are mostly structured similarly to licensing agreements, including milestones and royalties. In the majority of the institutions assignment is a more individual case-by-case decision (green=mostly/yes; light green=sometimes; red=rarely/no).

For the large majority licensing of IP to spin-offs is common practice with license agreements comprising typical licensing terms like milestone payments and royalties (Figure 7). Single payments as sole remuneration are very rare. License terms based on standard market conditions are applied by the large majority of the respondents, while only few state that this is not the case for their institution. Backloaded deal models are more commonly applied in licensing deals compared to assignment of IP. About half of all public research organisations adopt such models in the majority of their licensing deals, while only a minority rarely or never structure a deal this way. Overall, the trends regarding licensing practices are more streamlined over the different national associations compared to assignment practices. Both mechanisms aim to restrict unnecessary cash out during the early, critical phase of a spin-off. However, both approaches conform to market conditions.

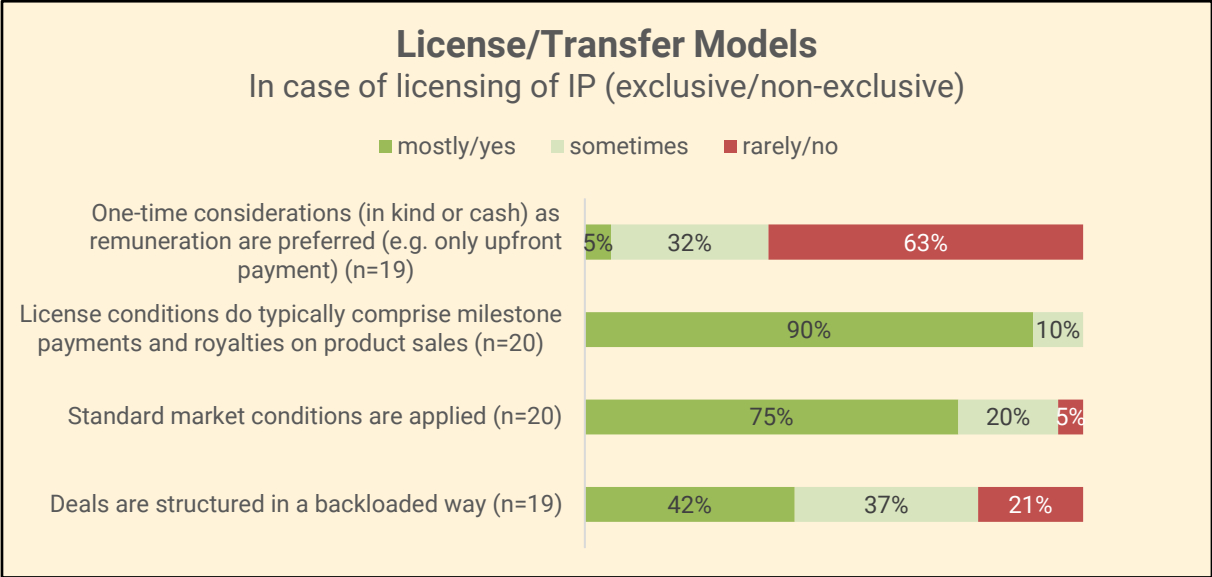


Figure 7: Deal Structure in Case of Licensing of IP
 In public research organisations (n= the number of respondents), deal structure for IP licensing is based on standard market terms, including milestones and royalties. Backloaded payments are also commonly used (green=mostly/yes; light green=sometimes; red=rarely/no).

Ranges for licensing terms such as royalties or milestone payments are rarely predefined and accordingly only few public research organisations have published ranges in their internal guidelines, while about one third have not and about half of respondents state that such terms are published sometimes.

Equity is commonly involved in licensing deals to spin-offs: only few public research organisations have the policy of not taking equity for their institution (Figure 8). About half of all respondents commonly include an equity component, while about 40% indicated that they do so sometimes. About one third of all public research organisations manage their shares via an external partner such as a separate legal entity or a service provider. This means that it is common that equity is not managed directly by an institution. Virtual share models are also applied but are much less frequently applied. Only very few public research organisations use such models

instead of equity and a few employ both equity and virtual share models. However, virtual shareholding models seem to be a bit more common where public research organisations are also considering equity as a deal component. Whether deals are a mixture of license fees with an equity component or only based on license fees seems to vary. About one third uses mostly both deal components in the majority of their spin-off cases, one third uses this model on a case-by-case basis, while one third responded that they do not include both components in the deal. However, deals comprising only equity are rather rare.

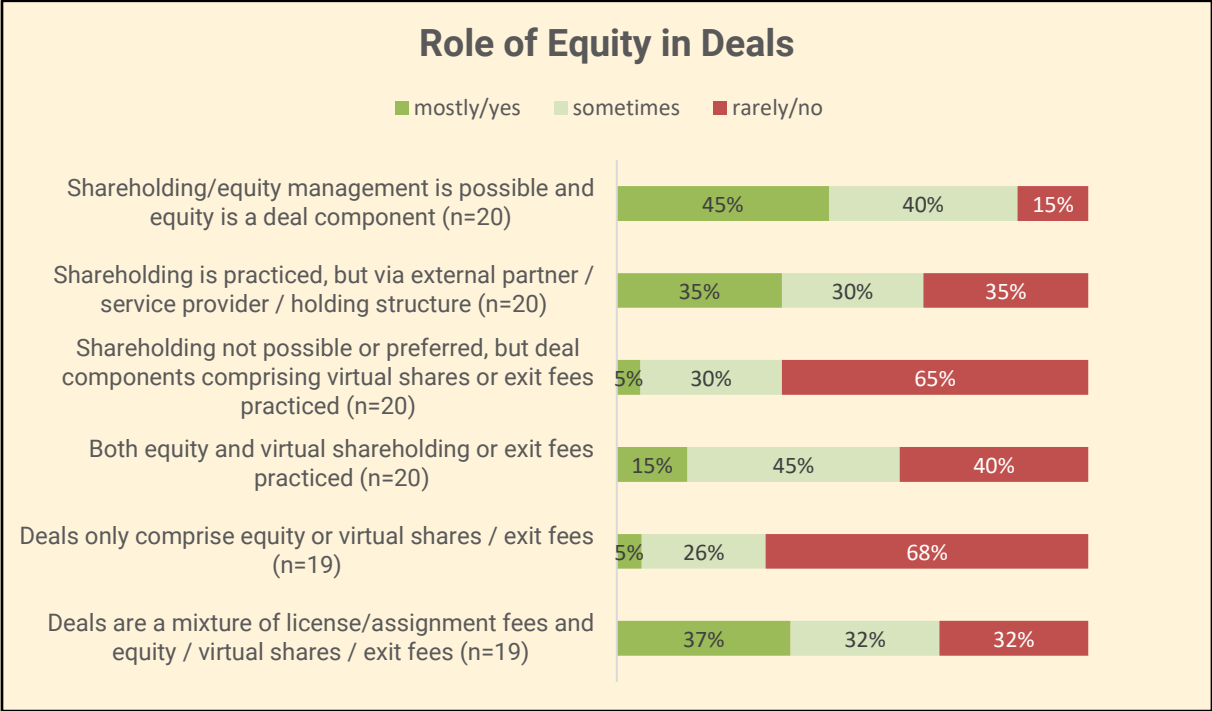


Figure 8: Role of Equity in Deals

In research institutions, an equity component is mostly included in spin-off deals. However, in the majority of cases, equity is not the sole term of the agreement (green=mostly/yes; light green=sometimes; red=rarely/no).

Respondents in the survey were also asked to provide typical equity ranges where equity is a component of the deal. The reported figures showed ranges from about 5% at the low end and up to 25% at the high end. Nonetheless, the majority of reported figures fell within the 5-15% range.

Another objective of the survey was to create an overview of the terms considered as essential for licensing IP to spin-offs (Figure 9). The most important term is to retain rights to use the IP for research, considered essential by nearly all participating institutions. Patent costs are also often a prominent part of negotiations. For the vast majority, the spin-off has to bear the patent costs associated with the IP transferred to the spin-off.

However, reimbursement to the research institution of past patent costs (sunk costs) is not widely spread. While only a small proportion of respondents regard reimbursement of such costs to be essential, about one third do not, and about half of respondents do not seem to have a clear policy in place. Binding provisions to develop

the technology in the form of development milestones is seen by most organisations as an essential term and only few do not see this as mandatory.

Access to future improvements of the licensed technology generated by the research institution is often brought up by founders’ teams during negotiations. For various reasons such as state aid, or problems with pre-valuating new technologies, many public research organisations are cautious of including such improvements in the license to a spin-off right away. Hence, it was not surprising that only a minority of organisations see this as an essential term and a larger proportion do not regard it as key.

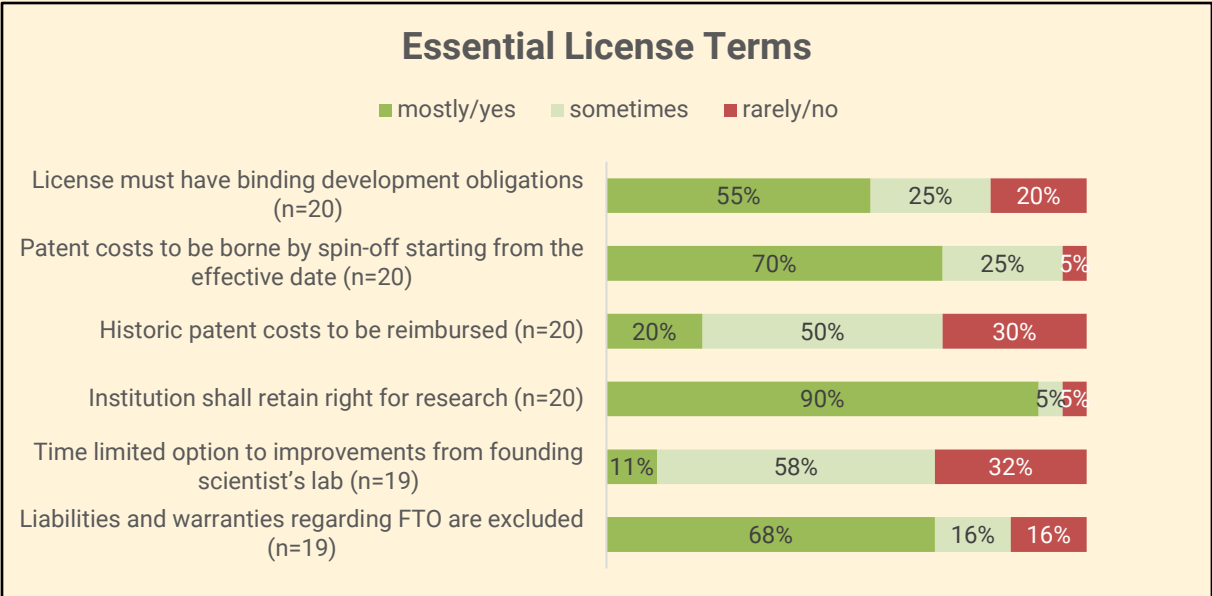


Figure 9: Essential License Terms
In public research organisations (n= the number of respondents), the most important term is retaining the rights to use the IP for research purposes. For the vast majority, it is mandatory that the spin-off covers the patent costs associated with the IP transferred to it. However, the reimbursement of past patent costs is less commonly requested. (green=in most cases/yes; light green=sometimes; red=rarely/no).

Finally, the large majority of research institutes have a Key Performance Indicator (KPI) related to spin-offs. However, most institutions only report the number of spin-offs and not the amount of investment secured by the spin-off.

Discussion

Spin-offs, as defined by most respondents, are based on IP-rights owned by a research institution. They are recognized as an attractive vehicle for commercializing innovations developed within these public research organisations underlining the importance of leveraging institutional knowledge and proprietary technologies to foster innovation and entrepreneurship. Public research organisations are key contributors to the creation of spin-off ventures by owning and developing valuable intellectual property assets that form the basis for the development of commercial products or services resulting from scientific expertise, research findings or innovative ideas. Furthermore, the involvement of scientists or researchers as founders highlights the critical role of domain-specific knowledge and technical expertise in the formation and success of spin-off ventures. Their deep understanding of the underlying technology or market-needs often positions them as catalysts for translating scientific discoveries into viable business opportunities.

The survey data suggest that most public research organisations have implemented instruments in order to support spin-off activities indicating a supportive ecosystem for entrepreneurship and innovation within the institutions surveyed. This support encompasses infrastructure access, coaching and mentorship, networking, and specific programs tailored to the needs of spin-off projects. Encouragingly, many of the tools listed in Table 1 below have become common practice across institutions. However, it is evident that public research organisations face significant challenges, particularly the lack of internal funding to support research projects aimed at commercialization through spin-offs, as well as the absence of financial instruments to provide seed investments for spin-off companies. When pre-incubation funding is available, it is often directed toward increasing the Technology Readiness Level rather than enhancing the Commercial Readiness Level strengthening of the spin-off founder team. Funding is a major hurdle for spin-offs in Europe where the volume of VC-funding is significantly smaller than in the United States. Institutional investment vehicles could serve as an attractive tool to support spin-offs in the very early stage. By investing in infrastructure, covering legal costs, and retaining key talent, such tools could facilitate company formation and bridge the gap until seed funding is secured. Additionally, they could attract or match seed funding and potentially generate returns by participating in the success of spin-offs e.g. in the form of equity.

Instruments	Description
Tools for direct investments into spin-offs	⇒ Establish investment vehicles specifically for investing in institutional spin-offs, offering seed funding or convertible loans.
Infrastructure Access Programs	⇒ Offer spin-offs dedicated access to institutional infrastructure (labs, equipment, etc.) and collaborations on specific projects.

	⇒ Create shared facilities, innovation hubs or incubators with a collaborative environment.
Comprehensive coaching and mentorship programs	<ul style="list-style-type: none"> ⇒ Mentorship programs with experienced entrepreneurs and industry experts as coaches. ⇒ Offer regular workshops or bootcamps on specific topics such as pitching, business model development, securing funding, and IP.
Networking and partnership development	<ul style="list-style-type: none"> ⇒ Establish networks with investors and experts from industry to connect and interact with spin-off team. ⇒ Leverage alumni networks with successful entrepreneurs. ⇒ Organise business plan competitions and partnering events
Spin-off formation process	<ul style="list-style-type: none"> ⇒ Establish and publish a comprehensive institutional spin-off policy ⇒ Provide guidelines for the conditions for the transfer of IP into spin-offs

Table 1: Key instruments that public research organisations can implement or enhance

A solid business plan, the definition of a unique selling point (USP) or an effective pitch are considered by many public research organisations to be fundamental elements for spin-off success. Also, the presence of specific IP covering the core technology of the spin-off is key for most institutions. It is therefore important to most institutions that founders have a well-defined business idea and contact the TTO as soon as possible. Although most TTOs require some kind of business plan before initiating the process of spin-off creation, the bar to get into contact with the TTO should not be put too high in order to participate in early stage discussions with potential founders and in order to advise them about their business ideas. Generally, in the long run, it is evident that when establishing a spin-off company, having a well-thought-out business plan or a compelling pitch is crucial to gain investor’s interest. Successful spin-off ventures are often characterized by a clear strategy, comprehensive market understanding and a persuasive presentation of the value proposition to potential stakeholders. These elements not only attract investors but also help to secure the necessary resources and partnerships that are essential for the growth and sustainability of the spin-off.

The internal support structures in the public research organizations with mature systems to support spin-off formation (whether or not in partnership with external programmes) are often directed at these ingredients. “

Regarding the general spin-off formation process, having clear institutional policies, designated responsibilities and key principles regarding IP transfer facilitate smoother and more transparent negotiations between all stakeholders involved with the spin-off process. This is also reflected by individual responses from the survey where participants were asked about specific measurements to enhance trust and commitment between stakeholders. Institutional guidelines are mostly readily available on a general level, though a few detailed policies including basic deal terms are published and searchable online. Nevertheless, the data show that there is already

widespread consensus among most public research organizations on best practice for a number of key terms.

Licensing is the predominant practice of transferring IP to spin-offs, particularly when patents are an essential part of the deal. License terms are commonly based on standardized market conditions and typically comprise components such as milestones and royalties. Backloaded deal models are common in licensing to spin-offs and many of the public research organizations offer such models comprising reduced license rates in the early stage and higher royalty rates in later stages of development. Interestingly, when assignment is chosen as the model for IP transfer, deals appear to be structured largely similar to license deals. Singular lump-sum payments as compensation for IP assignment are rare. There is a clear trend that public research organisations are more committed to structure license deals in a backloaded manner though the assignment of IP may seem like a faster and less complex way to transfer IP.

The majority of public research organisations use equity or virtual share models to balance license terms. There is a distinct preference for equity over virtual share models. This preference may be due to the contractual complexity associated with virtual share models. Furthermore, unlike equity, virtual shares often provide limited insight into company progress and further funding rounds. In addition, virtual shares are only contractual obligations. Therefore, virtual share models can be easily challenged in subsequent financing rounds. The percentage of equity varies, but from the information collected in this survey, the range concentrates between 5 and 15%. These figures need to be looked at carefully since a crucial factor is whether such equity is dilutive or non-dilutive. In the US, numbers for equity tend to be lower in the single digit range anti-dilution provisions are often applied. Such provisions are used less frequently in Europe and equity is in many cases fully dilutive.

This data report identifies trends across different national jurisdictions and R&D frameworks, highlighting a growing consensus on basic best practices. These practices are well aligned with recently published guidelines. A promising way to accelerate the spin-off process would be to widely adopt the establishment of institution-specific guidelines and spin-off policies. These should include clear conditions for the transfer of IP into spin-offs and ensure transparent communication of these conditions. While standardization of license terms is not yet common practice, there is a growing consensus in favour of its adoption. Since it would be challenging to find a one-fits-all solution such terms should be developed individually for different technology sectors. Within these terms, research organisations may carve out a set of essential terms which are non-negotiable in order to streamline negotiations. The ongoing debate aims to encourage the implementation of standardised terms into institutional spin-off policies, thereby promoting a more consistent and efficient approach to spin-off creation.

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