Secondary Valorisation:

Leverage your previous investments in IP

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Introduction: Valorisation

It is widely acclaimed that valorisation of Intellectual Property (IP) is of increasing importance for our society: the process of transferring the latent potential covered by technological patents into actual added value in new products, with benefits for economy, society and individuals [1],[2]. In general the term valorisation is mostly linked to (patented) knowledge from universities and research institutions; the current paper, however, introduces the concept of secondary valorisation with additional opportunities and challenges to achieve additional results from valorisation efforts.

From primary to secondary valorisation

The regular modus

Nowadays almost every university or research institute has its own valorisation office or program to support activities in this area. The objectives are creating licensing contracts, startups or spin-offs. As the scientific results vary as to technological maturity and commercial predictability, there is of course a wide range of success rates. Even for the most promising technologies there is a long and arduous path between invention and realization, requiring lots of resources, money and throughput time.

At the time that the technology is applied successfully into the first product, a lot of investments have been made in research, patent protection and application development. In this final phase the technology has to move from a relatively low technology maturity level to the highest level to be fit for commercial deployment; at the same time the probability that the resulting product will be commercially viable should increase. As this is the first time for the technology on hand to travel this path, I will call it 'primary' valorisation.

Leveraging investments

Talking about 'primary' immediately implies there is also a 'secondary' variant of valorisation: This is the process of transferring the proven potential covered by technological patents -with a first application- into added value in other new products, in product markets and domains that differ from the first application. For this process the phrase 'secondary valorisation' is coined.

The big difference between primary and secondary valorisation is the sunk cost and efforts that are required for research, patent protection and the first application development, including the necessary growth in technological maturity level; this is all part of the primary valorisation process. For the secondary valorisation process 'only' the specific application activities for the new product domain have to be executed. As a consequence, the break-even value resulting from the second application is much lower when compared to the first application, as illustrated below.

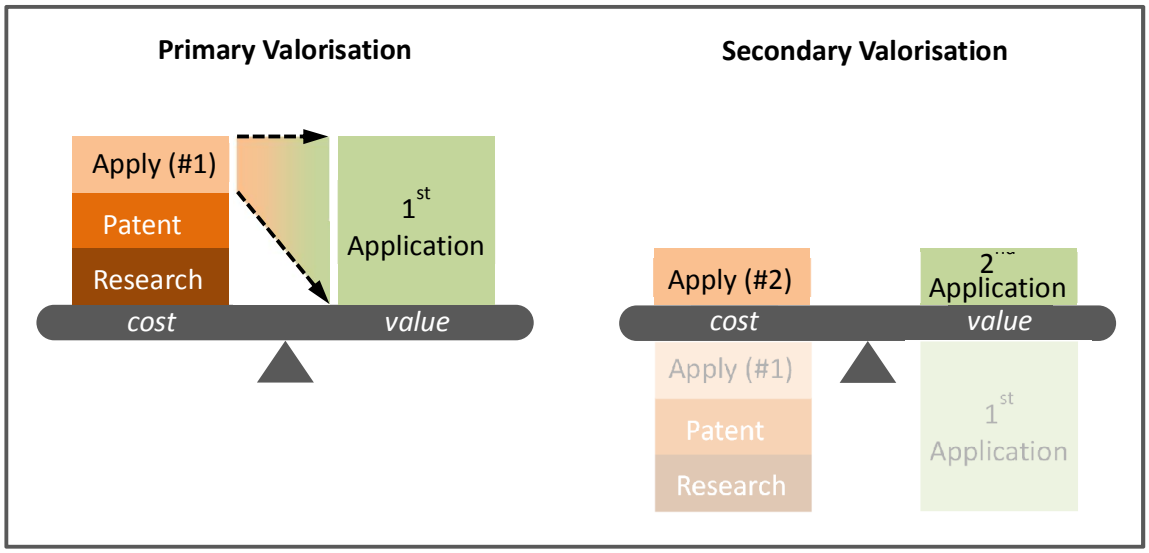

Fig. 1 The sunk cost advantage of secondary vs. primary valorisation

Risk mitigation

The basis for the difference in resources required for the secondary vs. the primary process is risk (or uncertainty) mitigation when moving from a low technological maturity level to a high maturity level. As a rule, the secondary process will start from a higher maturity level, profiting from all the efforts already conducted for the primary application. As an indicator the well-known technology readiness level (TRL) [3] can be used. In most cases it is not realistic to assume that the technology can be applied right away in a new product/market domain; some additional effort will always be required. However, this will be significantly lower compared to the effort for the first application.

Apart from the maturity of the technology, it is also crucial that the resulting product will be commercially viable; this is indicated by the commercial application probability (CAP). The higher this value, the higher the probability that the resulting new product will be commercially feasible. Along this axis only a modest difference might be expected: although the successful primary application will act as support for the estimation of the second application, it cannot guarantee its success.

As a result the areas for primary and secondary valorisation can be visualized along the risk (TRL) and reward (CAP) axes in the next graph.

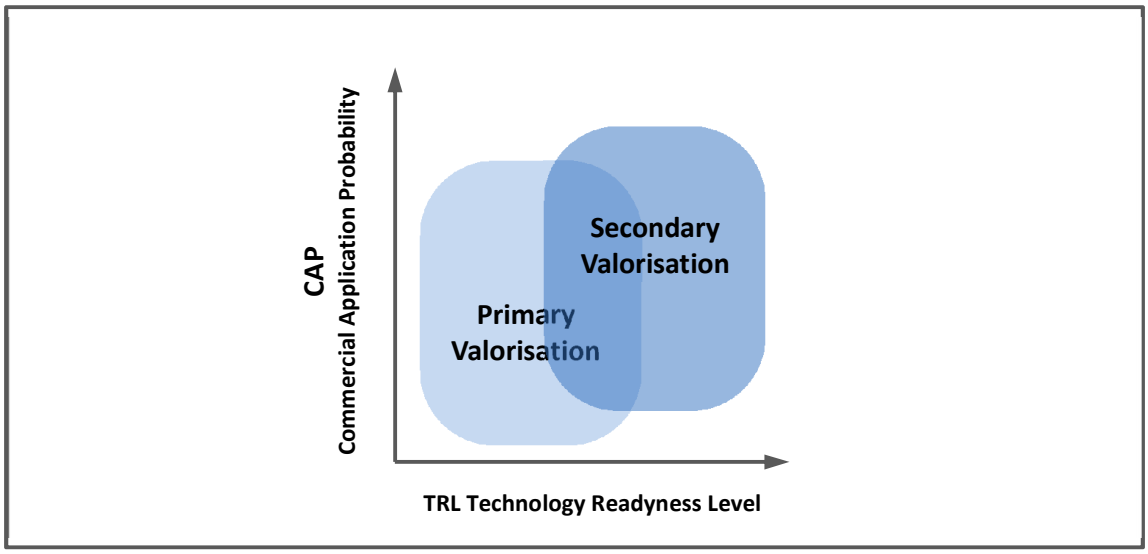

Fig.2 Both valorisation processes in the risk-reward graph

Drivers for secondary valorisation

So who should care about secondary valorisation? Obviously there is still the societal need for transferring knowledge into value, regardless of the labeling.
And of course, universities and knowledge institutes – the default sources of knowledge- might as well take a second step after a first successful application.

But the most logical environment for secondary valorisation is industry. In knowledge intensive industrial companies there is already a lot of technological know-how that is applied into existing products and processes. All these applications have passed at least the full primary valorisation cycle, with all investments in effort and money involved. When that knowledge is codified and protected, it would be a logical next step to look for other application areas.

Donors and receptors

Benefits of secondary valorisation for industrial parties can be identified at both sides of the transaction: knowledge supplier and knowledge receiver. The knowledge supplier can be regarded as the 'donor' and the knowledge receiver as the 'receptor', using the analogy of the medical world. This analogy stresses the importance of the 'transplanted knowledge' for the receiving company but also the need to make sure this transplanted knowledge is successfully integrated and accepted in the existing body (the receiving company). There is a positive shortcoming to this analogy, however: In contrast to a medical transplant the donor is left behind with the same amount of 'knowledge material' or even with more; the new application will only increase the technological knowledge.

The most important benefit for the donor company is increased R&D efficiency through additional leverage of R&D investments. This benefit can take the form of license fees or other transactional income. Also for the receptor company the benefit is obvious: The value of its products can be increased using the new knowledge while avoiding the risk and efforts associated with the difficult first steps in the primary valorisation cycle.

Obstacles for secondary valorisation

Considering this potential for a win-win situation, one should expect that secondary valorisation is widely adopted in the industrial market. For large enterprises this is -in general- indeed more or less the case, but especially SME's still have a large valorisation potential to exploit. Five obstacles can be indicated:

High transaction costs

There is wide agreement on the fact that transaction costs for valorisation are high. The 2012 European study on patent valorisation [1] identifies screening costs, information costs, contracting costs and aggregation costs.
These costs are relevant for all types of companies but especially for SME's with their often limited ability for financing long-term opportunities.

Lack of capacity and skills

Also the lack of capacity and skills is especially relevant for smaller sized companies that have less skilled professionals in business development, finance and legal disciplines, whereas large enterprises often have established substantial departments dedicated to IP management and licensing.
Generally, the obstacles mentioned thus far are widely accepted and discussed as they are rather straightforward and can even be measured to a certain level.

Lack of awareness

What is mentioned in literature less frequently but easily observed in practice, is the lack of awareness that additional value could be extracted from existing technology and knowledge by applying it in completely unrelated product domains. The existing awareness is mostly limited to the value for one's own, well-known product and market. This emerges from discussions with CEO's and industry managers when addressing the topic of secondary valorisation.

Lack of focus

Even if awareness is present, in most cases there is not much management focus on realizing the benefits of valorisation in new markets. This can in fact be considered as a management strength: unwavering focus on your present target market, products and processes. Scarce resources, finance and management attention should not be scattered over a wide diversity of opportunities with widely varying business feasibility. Of course this reasoning holds only for the –often unspoken- assumption that you should do all the work yourself.

No personal incentives

Apart from drivers or barriers from a company perspective as discussed above, perhaps the largest hindrance to action is the lack of personal incentives for professionals and managers. The research and development engineer is totally absorbed in current projects with deadlines and will not be awarded for spending time to find new applications for technologies outside the product range of the company. The R&D manager is well aware of the fact that his department will have to absorb the capacity costs for looking into new opportunities, but that future revenues will only improve the general profit and loss account without raising the departmental budget. The financial manager will be focused primarily on sales income, controlling cost components and managing tangible assets; the value of intellectual assets are not visible on the balance sheet (as a rule).

Finally, the legal manager –a position not always existing in the SME- has a professional preference for defensive action in the area of IP, trying to minimize the legal vulnerability of the company while controlling expenses needed for protection.
Concluding, one might say that 'below' the level of the general manager there are no individual incentives to look proactively for valorisation opportunities outside one's own company and market.

Key considerations

To address the above challenges and effectively convert existing technological, industrial IP into new value in 'alien' domains, new avenues should be explored.
In this exploration the potential value of the additional applications should play a central role while mitigating the risks and obstacles that hinder deployment. This leads to the following five key considerations when looking for alternative routes towards secondary IP valorization:

Value awareness

Everything starts with a new awareness of the value that is hidden in the technological assets of the industrial company. Not only an initial level of awareness about the value for one's own product, but also a wider awareness of the fact that there might be a lot of value in other products and domains. To paraphrase a well-known open innovation quote [4]: "Because not all the smart applications are sold by you". Combined with the insight that the investment (sunk costs) in the development of the technology is often quite substantial, this should trigger interest in ways to leverage these investments.

Fearless outlook

When discussing protected knowledge with industrial partners, the default reflex is to act on the defensive; protection against outside infringement is one of the key motivations for patenting. This is very relevant for competitors or suppliers in the same value chain but at the same time completely unnecessary for other parties in unrelated markets. With an appropriate demarcation of market segments, the basis for such fear can be removed, leaving only the psychological resistance to be dealt with.

Efficiency

New methods should be applied to minimize the transaction costs, and especially the effort and the time spent in the match making process. Here an analogy from the 'dating business' can be applied. Only decades ago singles in search of a partner depended heavily on chance when visiting a limited number of cafés or discos, for a limited time period with a limited 'supply' of potential partners. Nowadays, there are virtual dating sites abounding with advanced profile matching capabilities, that reduce the 'transaction costs' for the searching individual drastically. Also the IP matching process could benefit from a much more focused approach, leaving behind the 'café hopping' approach with its ad hoc meetings within one's own network. However, the analogy is not perfect as current valorisation websites with technology databases do not seem to fill the gap. A targeted, knowledgeable approach seems indispensable for optimum efficiency.

Controlled involvement

To ensure an effective transfer of knowledge between collaborating partners, it should be possible to take a step by step approach in which uncertainty decreases at the same pace as investments increase. This requires a controlled and gradual process that allows both partners to proceed or to quit during the matchmaking and development process. This prevents the need for one of the partners to make commitments that are not realistic in the early phases of investigation, such as approving high licensing fees upfront without being certain about the viability of the new application.

No DIY kit

As normal business practice requires focus on the core market and products, it is highly unlikely that staff members from the donor company will take the lead in the search for new applications. This will have to be done by skilled people from outside the company with full focus on this process. This outside effort can be financed by varying the mix of risks and rewards associated with the new application.

Proposed approach

A practical approach to achieve results in secondary valorisation combines the benefits of a small dedicated core team of professionals with extensive networks and some dedicated tools and processes.

Preparation

Members of the core team with backgrounds in management, engineering sciences and open innovation take the initiative to explore opportunities for secondary valorisation within selected companies, based on an initial relationship with one of the management representatives of the donor company. The relationship based approach is essential to address the issues of value awareness and fear-based defensive attitude. Initial talks should convince donor company management of the attractiveness of an externally sourced initiative to leverage their previous investments in R&D and IP development. A preliminary agreement will have to describe the desired distribution of upfront costs (mainly external team resources) and resulting revenues.

Selection

As a first step the knowledge portfolio of the donor company will be evaluated with specific attention for the usability of knowledge in other domains. A specific point of attention will be the availability of key professionals within the donor company to support the transfer of knowledge to the receptor company. Although only a limited amount of time will be required from these people, it is indispensable for a successful transfer as most IP will not be fully covered by the patent text only.

Matchmaking

The most promising IP buckets –typically 2 to 4- will then be analyzed in greater detail, using for example the TiP® methodology [5],[6] to find potential new applications in a structured way. Using the combined networks of the core team a limited number of target receptor companies are approached to check if a potential match exists.

Development

After a positive evaluation a development phase will start to enable a more detailed evaluation of the applicability of the technology into the proposed product of the receptor company. To enable the gradual transfer of IPR in this joint explorative phase, the Protancy® method [7] can be used, covering all managerial, financial and legal aspects.

Exploitation

At the end of this phase the actual viability of the combination technology-product will be clear and exploitation of the new product can commence, supported by final licensing agreements.

Future outlook

It is recognized that the huge area of secondary valorisation is still largely unexplored and that a lot can –and will- be done in the near future to define best practices and alternative approaches. However, it is my firm belief that exploiting this potential can be started today by applying the proposed approach in this paper. If you are involved in this topic –be it from a donor or a receptor point of view- you are kindly invited to request support or information from the author.

References:

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