

Accelerating business development in public research: “Transforming nanotech into economic good”

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The University Twente, the local Province Overijssel and a group of five private investors have agreed to work together in a public-private partnership to commercialize inventions at the micro- and nanotechnology research institute MESA⁺. This partnership will take the legal form of a private limited company with the name “MESA⁺ International Ventures” (MIV).

Micro- and nanotechnology are promising new technologies that have the potential to revolutionize existing industries with new products and services. Due to the high-tech multidisciplinary character and sometimes disruptive impact, implementing micro- and nanotechnology is difficult without the right partners and environment. Having MIV based around MESA⁺, which is specifically designed for micro- and nanotechnology-based solution platforms, brings together the right partners, environment and approach to successfully scout and implement micro- and nanotechnology.

Screening technologies for market potential

MIV will work with the MESA⁺ scientists to identify and rank technologies that may have commercialization potential. To this end, a screening tool is used to give scores to individual technologies. The screening tool takes various commercial aspects of a given technology into account such as potential market size and growth expectations, potential profitability, time to market and the anticipated costs to produce a technology demonstrator (prototype) and an end product, the estimated probability of success, the intellectual property rights (IPR) and last but not least whether enough relevant man power will be in place for the forthcoming period to be able to develop the technology towards a product of service.

Developing the technology towards the markets

Developing the technology is only one part of the equation, but in order to really reap the economic fruits of the technical developments, they must be - after having been identified as potentially commercially viable - marketed with vigour. Once a

technology has been identified as potentially commercially interesting, the actual successful commercialization starts with a process that addresses:

- securing the necessary intellectual property rights;
- conducting market analyses to understand the market and the players in terms of potential customers, partners, competitors and suppliers of a particular technology;
- approaching potential off-takers to determine with them the exact specifications of a particular product and/or application that is based on the MESA⁺ technology;
- pushing the technology forward according to market demands (from the lab table to a technology demonstrator or prototype);
- determining the optimal distribution strategy for a given technology; and
- identifying at least one lead customer who needs to be convinced to show a keen interest in the product and/or application at hand.

These elements are embarked upon within a so-called “stealth project”. Thus, once a particular technology has been initially scored and ranked as interesting from a market and financiers’ perspective, the scientists are invited to work together with MIV in a stealth project. The term “stealth” has been introduced, because the project will not be embedded within a dedicated limited company at the very start of the project.

Whereas in general the chances of a commercial success for an (early stage) technological discovery are substantially less than 50%, the actual incorporation of a company is postponed and the purpose of the stealth project is to enhance the overall probability of success of commercially exploiting a technology such that a thorough, financially attractive proposition can be made to the markets on which basis venture capital can be mobilized and a MESA⁺ spin-out company can be initiated. In case the technology would eventually prove not to be commercially interesting enough, the stealth project can be silently aborted without having to liquidate a company.

Albeit not a company in the legal sense, every stealth project will be run as a virtual company under the MIV umbrella. The stealth project will get its own virtual balance sheet, virtual profit and loss account and a dedicated budget. A project manager will be assigned to the project and the people working on a particular stealth project will experience this as if they were already part of a dedicated company. In this way, scientists will get commercial experience and exposure.

For each stealth project, MIV will enter into a contract with the scientists involved. This contract covers the basis on which the scientists will participate in and work with MIV on a stealth project and it covers the future role of the scientists in the spin-out company, were it to emerge. In the same contract, MIV agrees with the scientists how future revenues will be split.

Spinning out

Once the specifications that are demanded by the market are clear and the necessary IPR (patents) have been secured, once potential customers have been identified, approached and persuaded to show commitment on a certain product or application and once the market size and distribution strategy has been determined, an investment case can be presented to the financial community such to spin out a dedicated venture with the highest possible probability of success. The preparation of a convincing business plan, determining the optimal legal and fiscal structure for a spin-out and the selection of and contacting of private investors are other tasks of MIV.

Private investors include categories such as venture capitalists and corporate venture organizations. MIV will negotiate with or on behalf of the scientists involved what terms and what share percentage will be offered to the private investor(s) in return for a financial injection. Moreover, together with the interested private investor(s), MIV will also identify and prepare a proposition to a future chief executive officer (CEO) of the aspired spin out. The initialization of a spin-out company completes MIV's tasks.

It is the aim that MIV will initiate two to three stealth projects per year and it is expected that a stealth project will run for a period of approximately two years. In the third year after MIV has started, the first spin-out company is anticipated. MIV will become self-funded once exit money from selling shares in spin-out companies becomes available.

By so doing, MIV and the scientists involved bridge the gap between technology and markets and put in place a strategy and a dedicated vehicle that enhance the chances of success for the commercialization of a particular technology from the day that the technology emerges.

The mission, vision, strategy and goals of MESA⁺ International Ventures are summarized in Figure 1 below.

Integrated Micro Nano Systems

MIV Mission	Transform knowledge into economic good by exploiting and strengthening the MESA ⁺ technology platforms			
MIV Vision	Strong positioning at the forefront of the coming nanotech revolution, creating an entrepreneurial environment by bridging the gap between technology and markets			
MIV Strategy	Technology	Market	Operations	Finance
	<ul style="list-style-type: none"> •Scout /mine •Screen •Develop •Public science grants 	<ul style="list-style-type: none"> •Analyse •Screen •Develop •Capture •Brand •Distribute 	<ul style="list-style-type: none"> •Define specs •Quality and time •Management •Qualified personnel •Customer satisfaction 	<ul style="list-style-type: none"> •Investment in MIV •Third party finance for spin-out ventures •Subsidies •Value creation
MIV Goals	Screen	Stealth	Spin-out	Funding
	<ul style="list-style-type: none"> •Market data acquisition •Technology ranking •Feasibility study with proposal to investment committee 	<ul style="list-style-type: none"> •At least 2 per year •Tech demonstrator •Client •IPR secured 	<ul style="list-style-type: none"> •CEO •Find investors •First spin-out in year 3 •First exit in year 5 •Job creation 	<ul style="list-style-type: none"> •Find investors •Premium returns •MIV self-sustainable

Figure 1 MESA⁺ International Ventures