



Businessplan Example for a Hightech Startup

Lyncée Tec SA

The solution for fast micro and nano imaging

Planjahre 2009 - 2013

WARNING

It is expressly acknowledged that all the information enclosed in this BP are only indicative in the frame of a case study of venturelab. They are not representative of the real Business Development Plan of Lyncée Tec SA.

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1 MANAGEMENT SUMMARY

Business idea / Background

The "Digital Holographic Microscopy" (DHM) is developed for more than ten years in the Swiss Federal Institute of Technology ("Ecole Polytechnique Fédérale de Lausanne" - EPFL) and in the University of Lausanne (UNIL). The researchers who developed the technology have benefited and are still supported by several federal grants to develop the technology. They received several awards for their research.

They have realized that DHM has a large potential in both life science and material sciences and could be a replacement instrument for several current microscopy technologies. In addition, there are potentially numerous specific applications with very promising economic perspectives, proteomics for instance.

In 2007 an experienced team of six people started to work full time on the instrument development, on the definition and visit of customers, and on the business strategic development.

The company « Lyncée Tec SA » has been created May 6th 2008 with a share capital of kCHF 125. It is a limited company owned by its founders, domiciled rue du Bugnon 7, 1005 Lausanne whose missions are:

(1) to develop, and market new imaging systems based on DHM (manufacture and distribution will be mainly outsourced) and (2) to provide its customers with images containing the most pertinent and complete information by bringing innovative solutions in the R&D and quality control domains.

The « Digital Holographic Microscopy » (DHM) is developed for more than ten years in the Swiss Federal Institute of Technology ("Ecole Polytechnique Fédérale de Lausanne" - EPFL) and in the University of Lausanne (UNIL).

The innovative concept of DHM lies in two main processes:

(1) access to a more complete information of the sample than other current imaging systems by recording holograms instead of conventional images and (2) the intervention of numerical methods at a level never reached so far by imaging systems.

Vision / Market position

Lyncée Tec SA, created May 2007 is a limited company. Its mission is to develop, manufacture and market innovative imaging systems based on a new technology called « Digital Holographic Microscopy » (DHM).

This Unique Selling Proposition (USP) makes out of it unrivalled tools for numerous application for R&D and for quality control in manufacturing environments. It opens new market opportunities for early customers, and then progressively should replace existing system, in particular interferometers.

Market / Competition

The high resolution microscope market is \$1'500 millions; it has a small annual growth of a few percent. The unique specifications of the DHM systems should definitely extend this market. On one hand they offer to public and private laboratories new and unrivalled possibilities for innovative R&D both in Material and Life Science. On the other hand, they enable industrial customers to increase their product quality, their yield and decrease their production costs.

A market study has identified a strong potential in more than fifteen different market segments, ranging from semiconductor and printing technologies to other "Life Science" segments such as high throughput screening in pharma and cellular biology.

Considering criteria's such as competition, technological fit, entry barrier, and economical potential, Lyncée plans to first focus on four segments: Micro-optics, MEMS&MOEMS, surface analysis, and Microtechnique.

Lyncée products are in competition with high-resolution microscopy systems: Interferometers, Atomic Force Microscopes, Scanning Electronic Microscopes, and Optical Microscopes, in particular Laser Scanning Confocal Microscopes. They are also in competition with other systems such as Contact Probe Systems and some specific Measurement Sensors. It includes a few Holographic Based Systems. Although some of those systems have one or several specifications close to or sometime better than Lyncée Tec products, none of them offers simultaneously 3D, non invasive, high resolution and real time measurements. In addition, due to their opto-mechanical complexity and the presence of moving parts, competitor systems are most of the time more expensive to produce, their sales price is higher, and they are more cumbersome to use, especially for production operators.

Services / Customer benefit

Lyncée Tec SA masters two innovative concepts which distance the company from its competitors:

- 1 Access to a more complete information of the sample by recording of holograms instead of conventional images
- 2 Digital processing of the hologram in real time to reconstruct 3D high resolution measurements

(1) Actually, hologram records the phase of the wave front and not only the intensity as other imaging systems. DHM team has the know-how to produce holograms of both transparent and reflective samples for a large variety sample sizes, ranging from a few microns to several centimeters.

(2) By using numerical methods at a level never reached in the microscopy domain, object focusing, fine alignment, and optical aberration corrections are performed digitally, avoiding expensive mechanical stages, optics and objectives. It results in a lower production cost more reliable, and robust system compared to competitors.

The imaging systems are composed of a microscope and of a powerful software. They enable for the first time in 3D high resolution microscopy and simultaneously:

- 1 Real time imaging enabling to analyze samples very quickly or to study object movements, vibrations or deformations of very small amplitude
- 2 Strictly non invasive observation, i.e. the measurements do not disturb the sample
- 3 Easy to perform measurement which does not requires any controlled environment or sample preparation

This Unique Selling Proposition (USP) makes out of it unrivalled tools for numerous application for R&D and for quality control in manufacturing environments. It opens new market opportunities for early customers, and then progressively should replace existing system, in particular interferometers.

December 2008, more than hundred potential customers have been visited, several hundreds of investigation phones have been made. Lyncée has nine orders for a total amount larger than CHF 1 Mio.; more than 10 offers are open. There are several opportunities for industrial strategic partnering and one of them has been signed in a niche application. The potential of DHM is confirmed.

Protectability / Market entry barriers

DHM technology is protected by two patents in the USA, Europe and Japan:

- 1 First patent, registered in USA, Europe and Japan
- 2 Second patent registered in PCT for USA, Europe and Japan

Legal form

	Legal form	HR entry
To date	Aktiengesellschaft AG	2008
Planned	Aktiengesellschaft AG	no change

Team / Network

Among the five founders, four are the inventors of the DHM technology and are owners of the patents. They are a multidisciplinary group of engineers, physicists, physician, and biologists from the EPFL and UNIL. The last founder has a strong experience in R&D, production, and management. He joined the group in 2007. The director of the board is the head of a company of lawyers, financials and tax specialists.

The company, focused at present mostly on sales and product industrialization, is managed by a group of two directors: a Managing and Sales Director, having a large network of potential customers, and a R&D Director, both founders of Lyncée Tec SA. The team will be reinforced as soon as possible, with a marketing manager and with board members with experience in industrialization and business development.

The company benefits from the large support of several organizations, in particular from the governmental initiatives "TopNano 21" and "Nano Micro" (CTI) which finance the transfer of technology of promising projects in the nanotechnology domain and give access to internal resources of the EPFL and UNIL. Lyncée strategy has been validated and matured with external experts of the CTI start-up, CIMARK-CCSO network, and by Vendbrige.

The administrative financial structures of the company have been made with the help of PriceWaterhouseCoopers who is also the organ of revision.

Growth targets

Lyncée Tec aims to grow and targets following goals:

Profile SBA	Current year: 2009			Planning period: 2013		
	Turnover	Gross profit	Employees	Turnover	Gross profit	Employees
DHM Systems for Microtechnique / Optics / Micro-Optics	1'175	405	9	29'600	14'135	13
DHM Systems for Surface Analyses / Biochips	0	0	0	17'100	9'900	10

Company	Current year: 2009				Planning period: 2013			
	Turnover	Cashflow	Net profit	Empl.	Turnover	Cashflow	Net profit	Empl.
Lyncée Tec SA	1'175	-1'762	-1'270	13	46'700	10'842	15'300	31

Amounts in CHF 1'000, staff in Full Time Equivalents.

Thanks to its technology which simplifies the microscope and its production, it benefits from gross margin of around 51% after 5 years of operation. The strategy enables a progressive development and brings revenues on a short term.

We target revenues of CHF 46 Mio. within 5 years, reaching break-even in 2010.

Milestones / Action plan of measures

Present status and milestones:

Achieved steps / milestones	Date
EPFL has grant Lyncée Tec SA a worldwide and exclusive license for the development and commercialization of measuring and imaging devices based on digital holography (two patents)	2006
Lyncée has a marketable product and an industrial version of software	2007
Lyncée has been granted with the CTI Start-up Label November 2007	2007
More than 100 different customers have been visited	2008
CTI R&D grant support research for 6 people at EPFL and UNIL until June 2010	2008
Lyncée has been granted with the De Vigier 2008 award	2008
First strategic partnering signed: roughness measurement in industrial metrology	2008
Currently, several offers are open and 5 orders have been closed for a total amount of CHF 0.7 Mio.	2008
With the support of the CTI and the first incomes, Lyncée Tec SA is presently auto financed, but seeks external funds to speed up its development	2008