HEC PARIS

Case study : Neovacs

Please send any questions on this case study to the author via the mail box on the web site www.vernimmen.com

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Description of Néovacs (taken from its web site)

Neovacs is a French biotechnology company focused on active immunotherapy for autoimmune and inflammatory diseases and cancer. Neovacs is a spin-off from Université Pierre et Marie Curie in Paris, founded in 1993 by the French immunologist Daniel Zagury, MD-PhD.

Still in a research phase, Neovacs is revenueless and employs 24 people.

Mission:

Become a major player in the treatment of severe chronic autoimmune and inflammatory diseases, with targeted active immunotherapies developed using our Kinoid technology. The goal of Néovacs is to provide treatments that address patient needs along the course of their disease and provide a superior quality of life.

Strategy :

Néovacs has a proprietary technology, protected until at least 2023 by five patent families, and is directing its resources to the research and development of products based on this technology, the Kinoids. Neovacs product candidates neutralize over-expressed cytokines by inducing the patient's own immune system to generate polyclonal antibodies to the target cytokine.

The Company's business model is to generate income via partnerships on the Kinoids under development and to pursue research and development activities on other high potential cytokine targets.

As of today, Neovacs' efforts are focused on the development of two Kinoids, the TNF-Kinoid and the IFNα-Kinoid. These products target major commercial opportunities, estimated at over $24bn for the TNF-Kinoid and $1-to- $5bn for the IFNα-Kinoid in 2011.

Major milestones to date:

April 1993 - April 2003

Creation of Néovacs, a spin-off from the l'Université Pierre et Marie Curie, by Professor Daniel Zagury, one of the most eminent French immunologists and AIDS experts.

University research.

In 2003, Neovacs began preclinical testing of its first product candidate : TNF-Kinoid, in a model of rheumatoid arthritis. Truffle Capital, an investment fund specialized in biotechnology, becomes Neovacs majority shareholder.

In December 2006, Neovacs published the initial results achieved with TNF-Kinoid In the prestigious scientific journal - The Proceedings of the National Academy of Sciences- (PNAS**)**.

In 2007, Neovacs completes a Series A round of funding through Truffle Capital, Novartis Venture Fund and OTC AM. Truffle remains Neovacs' majority shareholder.

October 2008: Neovacs initiates first human clinical trials with the TNF-Kinoid, a Phase I/II study in patients with Crohn's Disease

In 2009, Neovacs initiates a Phase IIa clinical study of TNF-Kinoid in patients with rheumatoid arthritis.

April 2010 : listing of Neovacs on NYSE-Alternext in Paris. The company raises €10 million.

Neovacs initiates a Phase I/II clinical study of IFNα-Kinoid in lupus patients. Two Kinoids are in clinical testing, in Phase I/II and Phase II studies: TNF-Kinoid and IFNα-Kinoid

December 2010: Initial proof of concept for the TNF-Kinoid in Crohn's Disease is achieved. Neovacs publishes encouraging results from its Phase I/II trial, TNF-K-001, and initiates a Phase II study in 66 patients.

April 2011 : Neovacs raises €2,2 million through Debioinnovation (Debiopharm group), Truffle Capital et OTC Asset Management. In June 2011, Neovacs completes another round of financing (€8 million) through a private offering.

November 2011: Oral presentation at the American Congress of Rheumatology-Chicago for the full phase I/II data with IFN-Kinoid in lupus patients.

January 2012: Neovacs presents full results of Phase IIa clinical study of TNF-Kinoid in patients with rheumatoid arthritis. Follow-up study results (at month 6) were published in November 2012.

November 2012: Neovacs presents full results of Phase IIa clinical study of TNF-Kinoid in Crohn's Disease.

February 2013: Néovacs announces a €6.3m right issue to accelerate Neovacs' strategic development goals, by initiating in the very short term a phase IIb/III study of TNF-Kinoid in Rheumatoid Arthritis.

Questions

1. Carry out a financial analysis of Néovacs. In particular, you could look at the relevance of working capital at the company and comment on the capital structure.

2. Carry out a stock market analysis of Néovacs. You could note and comment on the fact that the shareholders have contributed equity of €43m since the creation of the company and until early 2013.

3. Taking into account a last share price before detachment of the preferential subscription right of €3, compute the value of the preferential subscription right and that of the Néovacs share just after the detachment of this right.

4. By how much will a shareholder who subscribes the exact amount of his/her stake in the capital increase be diluted? Consequently, how many preferential subscription rights should he/she sell, exercise or acquire? Why?

5. By how much will a shareholder who sells all of his/her subscription rights and who doesn't participate in the capital increase be diluted? Does this correspond to the strict definition of dilution? Why?

6. What do you think of the advertisement broadcast on the radio by Néovacs for its capital increase: “Take advantage of a 40% discount on the last share price to become a Néovacs shareholder”?

7. What do you think of the fact that Professor Daniel Zagury, founder of Néovacs who holds 4.21% of the capital, a manager of the company and Chairman of its Scientific Committee, took a decision to subscribe to the capital increase for €5,000 and to sell the balance of his rights on the market? What financial theory can be used to analyse this fact?

8. The 3 largest shareholders of Néovacs are the private equity firm Truffle Capital (35% of the share capital), specialising in biotechnology and a shareholder since 2003, Novartis Venture (21%), venture capital subsidiary of the pharmaceutical group Novartis, shareholder since 2007, and OTC Management (9%), shareholder since 2007.

   They decided to sell 20% of their preferential subscription rights for a total amount of €1 to four financial investors who would become shareholders of Néovacs at the time of this capital increase by subscribing shares for €1.5m.

   Show how financially, this was a good deal for the latter.

9. What do you think of the fact that the equity capital firm Truffle Capital and OTC Management decided to sell 80% of their preferential subscription rights on the market and to guarantee[1] 21% of the amount of the capital increase?

[1] In case existing shareholders and new investors would not subscribe enough new shares to make the right issue a full success, Truffle Capital and OTC Management have pledge to subscribe for up to 21 % of the share issue.

10. Will this capital increase modify the cost of capital of Néovacs? Why?

11. Under which conditions can this share issue create value for the shareholders of Néovacs ?

12. Compute the amount of Néovacs' book equity after the capital increase, assuming the capital increase took place on July 1, 2012 (date of the latest accounting documents available). Compare this increase with the dilution resulting from this capital increase. State your views. What is the explanation for this?

13. Why wouldn't it have been easier for Néovacs, instead of carrying out 17 capital increases since 1993 for a total amount of €42.6m, to carry out a single capital increase for €42.6m right at the outset?

14. Personally, if you had had enough cash, would you have subscribed to Néovacs capital increase? Why?

15. Post mortem: The share issue of Néovacs has been a success and there was no need to implement the warranty given by Truffle Capital and OTC Management.

    One month and a half after the completion of the share issue, the share price was quoted at €1.84. What do you think of the timing of this share issue? In the short term, who is the winner and who is the looser? Is this a surprise for you given you previous thoughts?

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APPENDIX 1: Financial statements of Néovacs

Income Statement

(Closing at December 301st)

In € thousands	2008	2009	2010	2011	H1 2012
Sales	-	-	-	-	-
- Consumption of raw materials	1 094	687	639	464	154
- Other external expenses	4 259	6 161	6 784	7 606	2 801
= Value added	**(5 353)**	**(6 848)**	**(7 423)**	**(8 070)**	**(2 955)**
- Staff costs	1 595	1 661	2 514	2 397	1 312
+R&D subsidies and sundry items	1 720	196	(24)	358	72
- Taxes	27	25	30	35	18
= EBITDA	**(5 255)**	**(8 338)**	**(9 991)**	**(10 144)**	**(4 213)**
- Amortisation and depreciation	36	38	47	59	24
= EBIT	**(5 291)**	**(8 376)**	**(10 038)**	**(10 203)**	**(4 237)**
+ Financial Income	101	(32)	(238)	5	(7)
+ Non recurring items	155	(14)	(22)	488	(66)
= Pre Tax Income	**(5 035)**	**(8 422)**	**(10 298)**	**(9 710)**	**(4 310)**
- Corporate income tax	(404)	(1 532)	(1 316)	(1 596)	(660)
= Net Income	**(4 631)**	**(6 890)**	**(8 982)**	**(8 114)**	**(3 650)**

Cash Flow Statement

In € thousands	2009	2010	2011	H1 2012
Net income	(6 890)	(8 982)	(8 114)	(3 650)
+ Amortisation and depreciation	38	47	59	24
+ Non cash items	-	-	(488)	-
= Cash flow	**(6 852)**	**(8 935)**	**(8 543)**	**(3 626)**
- Change in working capital	1 171	(709)	153	634
= Cash Flow from Operating Activities (1)	**(8 023)**	**(8 226)**	**(8 696)**	**(4 260)**
Disposal of fixed assets	-	-	488	60
- Capital expenditure	25	264	127	-
= Cash Flow from Investing Activities (2)	**(25)**	**(264)**	**361**	**60**
Free Cash Flow after financial expense (1)+(2)	**(8 048)**	**(8 490)**	**(8 335)**	**(4 200)**
+ Proceeds from share issues	3 268	14 578	10 402	176
- Dividends paid	-	-	-	-
= Increase (decrease) in net debt	**(4 780)**	**6 088**	**2 067**	**(4 024)**

Balance sheet

In € thousands	2008	2009	2010	2011	H1 2012
Intangible fixed assets	25	23	19	16	14
+ Tangible fixed assets	92	86	127	140	120
+ Financial fixed assets	63	58	238	296	234
= Fixed Assets (1)	**180**	**167**	**384**	**452**	**368**
Inventories	-	-	-	-	-
+ Accounts receivable	-	-	-	-	-
+ Other current assets (mainly tax credit on R&D expenses)	1 210	2 068	2 024	2 022	2 716
- Accounts payable	705	312	846	694	900
- Other current liabilities	469	549	680	677	531
= Working capital (2)	**36**	**1 207**	**498**	**651**	**1 285**
Operating assets = (1)+(2)	**216**	**1 374**	**882**	**1 103**	**1 653**
Equity (3)	**6 566**	**2 944**	**8 539**	**10 828**	**7 354**
Long term debt	-	-	-	-	-
+ Short term debt	422	179	78	205	271
- Cash & equivalents	6 772	1 749	7 735	9 930	5 972
= Net Debt (4)	**(6 350)**	**(1 570)**	**(7 657)**	**(9 725)**	**(5 701)**
Capital employed = (3)+(4)	**216**	**1 374**	**882**	**1 103**	**1 653**

Working capital turnover

	2008	2009	2010	2011	H1 2012
Operating Working Capital/Sales (days)	nm	nm	nm	nm	nm
nm: not meaningful					

Profitability

	2008	2009	2010	2011	H1 2012
After tax ROCE	**-2450%**	**-610%**	**-1138%**	**-925%**	**-256%**
ROE, excluding non recurring items	**-73%**	**-234%**	**-105%**	**-79%**	**-49%**
Gearing ratio (Net Debt / Equity)	-97%	-53%	-90%	-90%	-78%

APPENDIX 2: Stock market data for Néovacs

Stock market data

	2010	2011	2012	as of 2013/2/11
Highest stock price in €	4.34	5.05	4.50	3.00
Lowest stock price in €	2.17	3.05	1.34	2.43
Last price in €	2.33	3.60	2.39	3.00
Number of shares in millions	13.0	15.5	15.6	15.6
EPS in €	-0.53	-0.58	-0.52	na
PER	nm	nm	nm	nm
DPS in €	0	0	0	0
Dividend Yield in %	0%	0%	0%	0%
Payout Ratio in %	0%	0%	0%	0%
Stock market capitalisation in € millions	30.3	55.8	37.3	46.8
Shareholders' Equity (group share) in € millions	8.5	10.8	3.7	nd
Market capitalisation / book value of equity	3.5	5.2	10.1	nd

n.m. : non meaningful n.a. : not available

Early 2013 :

Risk free rate	: 3.1 %
Equity market premium	: 9.5 %
Beta of the share	: 1.5 %

Néovacs share price and transaction volume since IPO (April 21st, 2010 at €4.80)

APPENDIX 3: Breakdown of Néovacs share capital

Truffle Capital	35 %
Novartis Venture Fund	21 %
OTC Asset Management	9 %
Founding shareholders	8 %
Public	27 %
Total	100 %

APPENDIX 4: Characteristics of the 2013 right issue

PRESS RELEASE

NEOVACS LAUNCHES €6.3 MILLION CAPITAL INCREASE TO FINANCE CLINICAL PROOF-OF-CONCEPT FOR THE TNF-KINOID

◆ Capital increase with preemptive subscription rights ("Rights") for existing shareholders ◆ Subscription ratio of 2 new shares for 9 existing shares ◆ Subscription price: €1.80 ◆ Amount targeted €6.265m ◆ Subscription period : February 19, 2013 to March 1, 2013 ◆

Paris, February 15 2013 – NEOVACS (Alternext Paris: ALNEV), a biotech company focused on the development of active immunotherapies to treat autoimmune and inflammatory diseases, announces the launch of a capital increase of €6,265,746 (on the basis of 1.80€ per new share), with preemptive subscription rights for existing shareholders. The proceeds of this capital increase will be used to finance the pursuit of clinical development of NEOVACS' main products and in particular the launch of a Phase IIb clinical trial in Rheumatoid Arthritis.

Given the encouraging results obtained in clinical studies in 3 separate indications, Neovacs' Board and management has decided to advance clinical development in order to 1) obtain rapidly proof-of-concept for the TNF-Kinoid and 2) allow all shareholders to take part in this critical phase of the Company's development.

"The results published in all three targeted diseases confirm not only the safety and tolerability of our products but also show promising signs of efficacy. Based on these results, we have decided to go take the next step in the clinical development of our products so we can be in a very strong position to negotiate licensing deals with potential partners. To get there, we have decided to dedicate our efforts to reaching proof-of-concept of the TNF-Kinoid in Rheumatoid Arthritis – a disease with a major unmet medical need. The funds raised will also allow us to make progress in the pharmaceutical development of our two products (TNF-Kinoid and IFNα-Kinoid) and

continue to follow patients who have taken part in our previous clinical trials" commented Guy-Charles Fanneau de la Horie, the CEO of NEOVACS.

Use of funds raised The immediate goal of the rights issue is to accelerate Neovacs' strategic development goals, by initiating in the very short term a phase IIb/III study of TNF-Kinoid in Rheumatoid Arthritis. The pharmaceutical development of TNF-Kinoid in Crohn's Disease and IFNα-Kinoid will continue to a lesser extent.

By initiating a phase IIb study in RA in the short term, NEOVACS believes it can achieve rapid and cost-effective proof-of-concept for its technology. Meeting this key short development goal will allow NEOVACS to maximize the value of its portfolio, through supporting licensing deal discussions with major players in the pharmaceutical industry. Concluding such deals would then allow the Company to finance further development of its other products.

"We are proud of our ground-breaking vision, our fast development schedule and promising clinical results. We thank the shareholders who have supported us from the outset, as well those who have recently joined us and enabled us to bring our products this far. By launching a capital increase with preemptive subscription right today, we are calling on their renewed support to help us take the next decisive step: achieving irrefutable clinical proof-of-concept for our technology, which will help us bring the most value from our products in discussions with potential partners" concluded Guy-Charles de la Horie.

Appendix 5: Share issues at Néovacs since 1993

Date	Amount in €000	Cumulative amount
1993	38	38
1995	457	495
1997	287	782
1998	583	1 365
1999	1 169	2 534
2000	33	2 567
2003	3 500	6 067
2005	6	6 073
2006	662	6 735
2007	1 523	8 258
2008	8 294	16 552
2009	3 268	19 820
2010	14 578	34 398
2011	10 402	44 800
2012	176	44 976

Source: Néovacs