

Brown Forum for Enterprise

Creating the Business Model


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Topics

- Transition from academics to business
- Business model in a hot technology sector
 - Solaris Nanosciences and Nanotechnology
- External factors and IPO's



Can you be a Professor and an Entrepreneur?

- Yes
 - As a passive shareholder and advisor who contributes when called upon by management
- No
 - If you are going to be responsible for the operations and growth of the company and are using other people's money



Academic Arrogance I

- If I can invent:
 - a new molecule, device or system in my lab
and
- I have command of:
 - Algebraic Topology, Field Theory, Quantum Mechanics,
Advanced Lithography, Software Engineering, etc.
- Then surely, I can deal with cash flow, balance sheets, profit/loss and business in general!.....
 - **After all, its nothing but addition and subtraction**



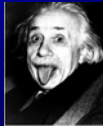
Academic Arrogance II

- I am respected by the greatest minds in my narrow obscure field, surely I will command the respect of the financing and venture community

– NOT!

- If it walks like a professor, talks like a professor, dresses like a professor

then it is!



Other People's Money

- Investors will not risk their money with someone who is not risking his or her own livelihood

Tenure = No Risk = No Investment \$\$


- Investors will not risk their money with someone who has not become **fully engaged with the process of making money and understands it is complex.**

Understanding science does not mean you can manage, develop products, market and SELL.




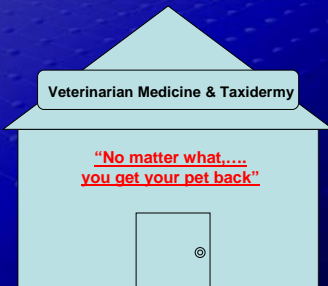
Conclusion

- Academics who want to run technology companies need to:
 - Learn and respect the processes involved in business
 - Decide they are interested and learn the subject of business.
 - Wake up in the morning and understand that your new life is about one thing.....creating value and making money
 - Leave the University and fully risk their future and ego
 - Get used to airplanes, trains, missing their kids and dealing with lawyers, accountants and if absolutely necessary...consultants




Business Models in Hot Technology Markets

"Our Business Model is a Winner"



Business Model for a Hot Sector

- Nothing lasts forever
 - The business model needs to make investors and bankers feel like it will come to fruition within the hot period,
 - and, or
 - That it will maintain interest in the absence of revenue



Solaris Nanosciences Business Model

The **Solaris Business Model** is based on high value additives for existing devices:

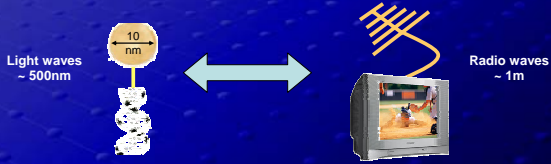
- No capital expenditures by customers
- No market creation
- Rapid adoption at the right price
- Recurring revenues



BASF: "We don't make your products, we make them **a lot better**"

Solaris Makes Nanoscale Antennas

Nanoscale metallic structures act as high-gain antennas for light sensitive molecules.



When the structure is much smaller than the wavelength of light, it concentrates, absorbs and transfers energy.

Solaris Products Target Three Major Markets



Solaris Market Strategy: Sell High-value Additives

SOLARIS

Additives model offers:

- Low cap ex for customer
- No new market creation
- Accelerated adoption

The diagram shows three product categories under the Solaris brand. 1. Nanorods: An image of a textured surface leads to an image of a landscape on a display, labeled 'Improved image for Displays'. 2. Core-shell TiO₂: An image of small black particles leads to an image of a solar panel, labeled 'Increased efficiency for dye-sensitized solar cells'. 3. Bio-functionalized Nanospheres: An image of colored spheres leads to an image of a person wearing glasses, labeled 'Improved visual acuity'.

IPO Experiences

Initial Public Offering

- Steadily Declining Market
 - Enron, Adelphi, etc.

Incredibly Protracted Ordeal

The diagram features a central downward-pointing yellow arrow. To the left of the arrow is the text 'Initial Public Offering' and to the right is a bulleted list: 'Steadily Declining Market' with a sub-bullet 'Enron, Adelphi, etc.'. Below the arrow is the text 'Incredibly Protracted Ordeal'.

Spectra Systems IPO in a 9/11-Enron Climate

- 6 Different Bankers
 - ING, ABN AMRO, Piper Jaffrey, S.G. Cowen, First Albany, Adams Harkness and Hill
- Over \$2MM in IPO Costs
 - Accounting costs for a contingent acquisition
 - Legal fees
- New levels of scrutiny on revenues, contracts, licenses and security
- Two days before the road show in November 2002, the S1 was shelved due to low pricing target expectations

The diagram lists four main challenges for Spectra Systems' IPO. 1. '6 Different Bankers' with a sub-list of ING, ABN AMRO, Piper Jaffrey, S.G. Cowen, First Albany, Adams Harkness and Hill. 2. 'Over \$2MM in IPO Costs' with sub-lists for 'Accounting costs for a contingent acquisition' and 'Legal fees'. 3. 'New levels of scrutiny on revenues, contracts, licenses and security'. 4. 'Two days before the road show in November 2002, the S1 was shelved due to low pricing target expectations'.


IPO Experiences

Initial Public Offering

- Hot Market
- Elliot Spitzer is on an extended vacation

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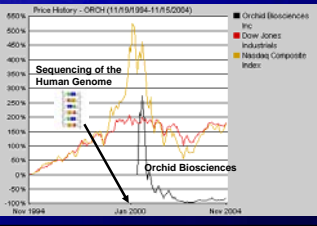
Immediate Pay Out



Hot Market IPO's

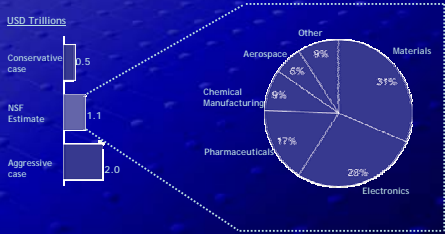
- Bankers get 7% of the money raised and they want a product that sells on its own.

➤ a hot sector within a hot market (e.g. genomics)




Nanotechnology Market is Potentially Huge

Nanotechnology related goods and services by 2010-2015




Sources: National Science Foundation, Lux Capital, GEMZ Corp.




Solaris Nanosciences' Market Position

Specific, Large-market
Applications of Recently Enabled and
Well Understood
Nano-Antenna Response

Solaris Nanosciences




Nanotechnology in the Public Markets



Nanosys Inc. files S-1 in April 2004, three years after inception, but withdraws due to "bad market environment".

- Bankers include Merrill Lynch, CIBC, Lehman Brothers and Needham
- R&D revenue of \$3M
- Operating loss of \$9.5M
 - Prospectus states the company does "not anticipate that our first products will be commercially available for at least several years, if at all."
- IPO pricing (7/15/04) had put Nanosys at a pre-money valuation of \$370M
 - 120 times revenue



Thank You

