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VINNOVA

Decoding DeCODE

Using history and SEC-files
as Journalistic methods to evaluate an
innovation-based company's status.
An award-winning example published in the
Swedish newspaper Västerbottens-Kuriren.

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Vinnova fellow at the Wall Street Journal during spring 2004

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1. Meeting a Viking

In May 2002, I had the pleasure of meeting Kári Stefánsson, a man with the characteristics of a true Viking. The tall and gray-bearded Icelander had discovered unique possibilities on the desolate island in the Atlantic Ocean, just like his ancestors had done centuries ago. But Mr. Stefánsson's discovery was of a different kind. He hadn't found a place to harvest wealth from the sea surrounding the island. Instead, he had found a way to harvest wealth from the genetic makeup of 260,000 individuals, the Icelanders.

Kári Stefánsson is the founder and CEO of DeCODE Genetics[1], often called the world's most promising gene hunting company. Prior to my arrival in the capital Reykjavik, Mr. Stefánsson had promised to share the wealth that he would harvest.

If the Icelanders lend him their money, their blood and their medical and genealogical records, they would benefit from the company's success. He had promised wealth to Iceland and free drugs to Icelanders. Mr. Stefánsson had even promised to extinguish some of the devastating genetic diseases.

I was on Iceland to see if the dream was coming true. The aim of the reporting was to compare the large-scale company DeCODE to the small-scale Swedish company UmanGenomics[2] which had created some debate in the city of Umeå that hosts the headquarters of the regional newspaper Västerbottens-Kuriren[3], where the trilogy was published in June 2002.

In February 2003 the trilogy was nominated to the Royal Swedish Academy of Engineering Sciences'[4] annual Scientific Media Award for the year 2002 and later named the winner.[5]

This paper focuses on the company DeCODE and the journalistic methods that I used to evaluate its progress. Furthermore, it discusses strengths and weaknesses with the methods and presents other possible solutions to reach valuable conclusions on the health of innovation-based companies.

This paper was presented on April 15th 2004 at the first conference on Innovation Journalism[6] at Stanford University in Palo Alto, CA., USA.

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[1] An American subsidiary of the Icelandic enterprise "Islensk Erfdagreining", www.decode.com
[2] www.umangenomics.com
[3] www.vk.se
[4] http://www.iva.se/eng/index.asp
[5] The trology, written in Swedish, is available on request, just e-mail marcus.lillkvist@vk.se

2. Let there be light

In July 2000 DeCODE - shares were introduced on the U.S. secondary market, thus allowing any investor to speculate in the company's future. Icelandic banks issued a huge campaign to turn the stock into "the citizen's stock". However, as months and years passed the share didn't grow as expected, in stead it reached its all times low at the time I visited Iceland.

In article after article, the reader of science and technology stories will face words like "revolutionary" and "breakthrough" in the description of how future technology will transform their everyday life.[7] That has also been the case with biotech companies, with promoting journalists quoting CEOs promising cures for anything from cancer to diabetes.

So far none of that has happened. Technology has certainly made life easier, but so far the hyped areas of biotech and nanotech haven't come up with any medical breakthroughs that has proven to revolutionize our everyday life in the way that decade-old inventions like antibiotics and X-ray did.

That is however what companies like DeCODE Genetics wants to do. And they claim that they will. But they can't say when. So how should a journalist assess such a problem? DeCODE Genetics is one of those companies that investors keep their eyes on to get a measurement of the biotech temperature, making it even more important that the journalist does a good and honest job.[8]

Any company wants the good news to be published rather than the bad news. This is a problem for the company's stockholders, who need both good and bad news to make informed decisions. Brokers, banks and venture capitalists take their time to find tools to evaluate companies. Lay people, however, seldom do. Instead they rely on information from the company, or even better, from the, hopefully unbiased news media.

Because tens of thousands of Icelanders bought shares in DeCODE, one could believe that the Icelandic media had performed intensive critical coverage of DeCODE. That is however not the case, since the company's close connections to the center-right Icelandic government means that criticism of the company equals to criticism of the government, a phenomenon that is more common in smaller societies like Iceland.[9]

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[6] Nordfors, D., The concept of Innovation Journalism, Vinnova Information, ISSN 1650-3120, http://www.vinnova.se/main.aspx?ID=73F1947C-8EE2-4CDB-97F7-2F4D0A5846A2

[7] Nelkin, D., Selling Science, W.H Freeman and Company 1987, page 33

[8] Lillkvist, M., Västerbottens-Kuriren, Umeå, Sweden, April 25th 2002

[9] Erlingsson, S., J.; Our Genes: Biotechnology and Icelandic Society, Reykjavik: Forlagid 2002

So when I arrived to Iceland, my background material was limited to a handful of stories from foreign newspapers. This was of course not enough. Conducting interviews with numerous people expressing different standpoint about the company was necessary. On Iceland I met DeCODE's PR-staff, its scientists and its CEO Kári Stefánsson as well as representatives for the critical association Mannvernd[10], which claims that DeCODE possesses information too sensitive for the company to handle.

I also met with people who weren't medical professionals, nor hired by the company, thus expected to express a less biased view of the company. These were science historians and lay people on the street, as well as blood-donors willing to help DeCODE solve the mysteries of their genetic diseases.

Everybody had an opinion, but the opinions were very personal and not really based on facts about the company. For instance, one of the interviewed built her opinion on a newspaper gossip-story telling how DeCODE's CEO Kári Stefánsson was sued after having built himself a large estate that blocked the neighbor's view.

3. Let history be your judge

In order to assess DeCODE, I had to rely on facts. The only way to do that, I argued, was to use history to extrapolate the company's future. What has the company promised, and what has it really accomplished so far?

I chose the most objective way to reach my conclusions; public filings. All companies that are publicly traded in the U.S., are forced by law to file a huge amount of company information to the Securities and Exchange Commission, SEC, at least on a quarterly bases.[11] This can be an invaluable source of information on a company's finance and operation.[12]

First, I scanned the latest annual report.[13] In the part "Risk related to our business", I found the following statement: "DeCODE expects it will be years, if ever, before it will recognize revenue from the development of therapeutic or diagnostic products".

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[10] Mannvernd, Association of Icelanders for Ethics and Science in Medicine, http://www.mannvernd.is/english/

[11] "Stock market", Britannica Student Encyklopedia, Encyklopedia Britannica Online, 12 Feb 2004, http://search.eb.com/ebi/article?eu=300098

[12] Smith, R. and Emshwiller, J.H., 24 DAYS, How two Wall Street Journal reporters uncovered the lies that destroyed faith in corporate Ameriva, HarperCollins Publishers 2003

[13] Annual report of the fiscal year ended Jan 31th 2001, can be found on Hwww.decode.comH

While a traditional company can create profit in a matter of months, innovation-based companies may need years, or even tens of years. So just examining revenue and earnings will not serve the journalist who wants to evaluate an innovation-based company. I had to use other methods.

I soon found out that a deal with the gigantic Swiss pharmaceutical company Roche[14] had been crucial for DeCODE's possibility to grow.

In February 1998, the research collaboration and cross-license agreement was signed. This was a great opportunity for DeCODE, which was in great need for start-up money. The four year deal guaranteed DeCODE $70 million in research funding and more than $130 million in "milestone" payments if it reached some scientific and financial goals in the hunt for genetic factors involved in ten common diseases, pre-decided by Roche.

So I dug deeper into the annual reports[15] and found that by December 31st 2000, Roche had paid, or owed, DeCODE, a total of $52,4 Million. Nearly three years of the four year agreement had passed, and DeCODE could have received ¾ of the $70 Million fund plus ¾ of the $130 Million milestone payment ($52,5 Million plus $97,5 Million). However, DeCODE hadn't been that successful. As a matter of fact, it suddenly seemed obvious that DeCODE hadn't received any milestone payments at all.

The modest milestone revenue became the main theme in the revealing part of my story. Of course, other facts about the company were mentioned.

One example is the government bond. As many other gene hunting companies, DeCODE changed focus in the spring of 2002. By acquiring the American company Medichem Life Sciences, DeCODE would be able not only to hunt genes involved in diseases, but also to develop drugs. To help build up this new branch, the Icelandic parliament provided a government guarantee of a convertible bond offering up to $200 million, helping DeCODE to receive the much needed bank loans. The parliament received intense criticism from other Icelandic companies, questioning why it chooses to support only this one enterprise. By December 2003, the government bond was still not effective, since it must first be approved by ESA, European Free Trade Association Surveillance Authority.

[14] www.roche.com

[15] Can be found at Hwww.sec.govH, Hwww.decode.comH or Hwww.nasdaq.comH. The "ticker" code for DeCODE is "DCGN".

Another thing that I mentioned in the article, was the Health Sector Database. In 1998 the Icelandic parliament passed a law that would oblige all medical professionals to send their patient's medical files to DeCODE Genetic's database. The aim of this health database is to support the two other databases; the genealogical bank and the blood bank, to create a powerful tool in assessing the genetics involved in diseases of Icelandic families.

The company promised that the encrypting system, developed by experts at CIA, would be safe and that no individual can be identified, risking genetic discrimination. The health database is based on presumed consent, which means that everybody who doesn't actively choose to opt out is considered willing to participate.

The association Mannvernd criticized the proposed Health Database, claiming that it clashes with the physician's ethics and that the presumed consent clashes with the Helsinki Declaration[16], which states that no research should be done on human beings who haven't actively decided to participate by an "informed consent".

Accordingly, in May 2002, four years after the law was passed, the Health Database hadn't yet been established.

4. Digging deeper

During my Vinnova fellowship at The Wall Street Journal in San Francisco I had the possibility to examine some additional journalistic methods that could have been used.

4.1 Earnings and revenue

Every quarter all publicly traded companies have to file their earnings and revenue. It can be of some interest to compare the quarter with the past quarter, or the fiscal year with the former, but innovation-based companies can be promising even though they haven't earned much money so far. The annual change in the ratio revenue/costs can reveal if the company is heading in the right direction.

Info can be found in annual (form 10-K) or quarterly (form 10-Q) reports, often available at the company's web page, in this case decode.com (go to site-map and scroll down to SEC-filings). In the part "Selected financial data", you'll find

[16] The World Medical Association, http://www.wma.net/e/policy/b3.htm

the goodies. Info can also be found at The Securities and Exchange Commission[17] and, for DeCODE's case at Nasdaq[18].

The DeCODE-example:

2000: Revenue $21,5M, Operating costs $61.1M, Net loss $31.1M
2001: Revenue $26,1M, Operating costs $83.4M, Net loss $52.5M
2002: Revenue $41,1M, Operating costs $173.1M, Net loss $132M
2003: Revenue $46,8M, Operating costs $81.6M, Net loss $35.1M

Comment: DeCODE's revenue derives primarily from milestone payment, exclusivity, technology access and development for its collaborators. It hasn't been profitable during any of its first seven years. However, as long as investors maintain their support, this shouldn't be considered a problem, though it could be worrying that the annual net losses aren't shrinking significantly. As of Dec 31st 2003 DeCODE's total deficit was $330,2 Million.

4.2 Research and development

Innovation based companies build their value on new findings that can be commercialized. That is why such a company must be very aggressive, and sometimes dare to put more money into R&D than it actually can afford.

Info can be found in annual reports (as described in 4.1).

The DeCODE-example:

2000: R&D-expenses, total $45.7M, 213% of the revenue
2001: R&D-expenses, total $71.0M, 272% of the revenue
2002: R&D-expenses, total $86.6M, 211% of the revenue
2003: R&D-expenses, total $63.5M, 136% of the revenue

Comment: Despite modest revenue, DeCODE has continued its strong investment in R&D, which is crucial and positive as long as it gains investor's support. DeCODE explains the decreased R&D expenditure in 2003 with cost reductions due to automation, reduction of usage of chemicals and other consumables as well as salaries.

4.3 Employees

In general terms, a company that decreases its number of employees, is considered to have financial problems. However,

[17] www.sec.gov
[18] www.nasdaq.com

that does not necessarily have to be the case as a change can be necessary, and even welcome, for a company changing strategy. For instance, the California biotech company Incyte's share price rose by nine percent on the news that it would close its Palo Alto facility and eliminate 257 jobs, more than half of its work force.[19]
The distribution of employees also mirrors whether the company has managed to concentrate on its main activity.

Info can be found in annual reports (as described in 4.1).

The DeCODE-example:

Dec 31st 2000: 445 employees, 260 in lab, 120 in informatics.
Dec 31st 2001: 592 employees, 308 in lab, 149 in informatics.
Dec 31st 2002: 530 employees, 350 in lab, 95 in informatics.
Dec 31st 2003: 414 employees, 267 in lab, 71 in informatics.

Comment: Roughly eight out of ten employees are involved in the core activity (laboratory and informatics) which should be considered gratifying. Solely during 2002, expenditures involving employee termination cost DeCODE $64,8 Million, contributing to half the company's deficit that year.

4.4 Patents

Innovation based companies often create revenue from non-traditional products like methods, ideas, licensing and information. To protect their immaterial rights, they have to apply for patents. The procedure of patenting can be time-consuming and costly, so the journalist may predict that the company wouldn't try to patent unless it believes the idea is valuable.

Info can be found at The United States Patent and Trademark Office, USPTO, which issues U.S. patents. They offer a searchable database on their web page.[20]

The DeCODE-example:
A total of 16 genes implicated in 13 diseases, identified. They include obesity and myocardial infections.
DeCODE is the assignee name for nine U.S. patents, three on genes, four on informatics and two on genetic methodology. However, according to the latest annual report, DeCODE has issued 24 U.S patents.

Comment: DeCODE hasn't patented all of its discoveries in its own name, but together with its collaborators, which means it

[19] Simmers, T., The Oakland Tribune, Feb 3rd 2004
[20] http://www.uspto.gov/patft/index.html

hasn't the sole right to the patents. DeCODE hasn't patented all its discovered genes, which exposes that some discoveries aren't considered valuable enough. The figures also confirm that DeCode is much more than a gene hunting company.

4.5 Drugs and diagnostics

The main goal of most biotech companies is to produce drugs. A secondary goal is to produce diagnostic methods. Before any drug can be accepted, it must be proven secure and efficient. Approval by FDA, the Food and Drug Administration[21], opens the American market, which is the largest one in the world. That is why journalists should examine whether any product of the company is subject for FDA's approval procedure.
Before any company applies, it first performs some tests on its drugs. These tests are pre-clinical, involving lab- and animal-tests, and clinical, involving various amounts of people involved (Phase I, II and III).

Info can be found in annual reports (as described in 4.1) and in FDA-files.

The DeCODE-example:
So far, DeCODE's experimental drugs haven't been approved by the FDA, thus none is so far on any market. No diagnostic test has so far been commercially available.
A phase II trial has started on a potential myocardial infection drug candidate licensed from Bayer. Two other phase II trials are planned for 2004, targeting hypertension and asthma. DeCODE expects to file an application to the FDA in early 2005. DeCODe is also developing genetic methods to diagnose increased risk for osteoporosis and heart attacks together with collaborator Roche Diagnostics.

Comment: Since FDA-approvals take years and only three drug-candidates might be in the pipeline, no investor can expect revenue from DeCODE's soon. It is crucial for journalists to consult unbiased medical experts in the specific area of research.

4.6 Future projections

Companies often give forward looking statements in their quarterly and annual reports. A journalist can investigate the company's self esteem by comparing its earlier forecast with its actual result.
However, the SEC doesn't require companies to give future estimation, so in some cases they don't. Then the journalist can rely on future estimations by analysts. The best source is

[21] http://www.fda.gov

Thomson's first call, a company gathering multiple views on Wall Street, creating an average estimate on the future financial results. Analysts also publish research reports on the companies they cover. For instance, three different analysts cover DeCODE: Jeffrey Zekauskas at JP Morgan, Daniel Mahony at Morgan Stanley Dean Witter and Esther Finnbogadottir at Kaupthing Bank.

Info can be found in annual reports (as described in 4.1), in press releases and by contacting Thomson's first call[22], or the analysts themselves.

The DeCODE-example:
Estimate for 2001[23]: Net loss $48.4 Million
Result 2001: Net loss $52,5 Million
Estimate for 2002: Net loss $39.5 Million
Result 2002: Net loss $131.9 Million
Estimate for 2003: Net loss $31.1 Million
Result 2003: Net loss $35,1 Million

Comment: As this example shows, nobody knows what the future will bring, not even the specialized analysts. Journalists should consult as many analysts as possible. For start-up companies this might however be a problem, because smaller companies tend to be covered by few analysts.

4.7 Share price and Indexes

The share price is often used by journalists as a means of measuring day-to-day temperatures of the company. It is, however not a good journalistic tool for journalists who really want to evaluate a company's status. All that the share price can tell you is whether investors are excited about their stocks or not.[24]
If a journalist however wants to mention the share prices, it should be done wisely. A journalist writing about a biotech company should for instance compare that company to other biotech companies. For most branches, there are Indexes stating the overall development. In biotech, there are two major Indexes. The Nasdaq Biotech Index, NBI, is an average of the 130 largest companies. The Amex Biotechnology Index, BTK, is an average of the 17 largest companies.

Info can be found at Nasdaq[25] and at Amex[26].

[22] The telephone number to Thomson's First Call: 1-617-856-24 59 (www.thomson.com/financial/financial.jsp)
[23] Zekauskas, J., Company Report deCODE genetics, JP Morgan Securities Inc. Sep 27th 2001
[24] Hamilton, David, biotechnology reporter, The Wall Street Journal, orally 3-26-04
[25] dynamic.nasdaq.com/dynamic/nasdaqbiotech_activity.stm
[26] www.amex.com

The DeCODE-example:
DeCODE shares have lost much of their value since the stock was introduced on the secondary market in July 2000, starting at $28, reaching its all time weekly low at $1,66 in September 2002, and slowly recover again to reach $13 in February 2004.

Comment: This down-surge certainly has created distrust among the tens of thousands of Icelanders who acquired deCODE shares. But for the journalist using using NBI and BTK, it is clear that DeCODE hasn't performed worse than other biotech shares.

4.8 Partners

Start-up companies almost always need a financial partner to get started. Private investors (angels), venture capitalists and other companies can be involved. One way to evaluate such a company is to examine its partners. Since it's a risky move to support new companies, an evaluation is always made before any company decides to offer their support. If a well-known proven company is involved, the chances are larger that the business idea is solid, as stated by JP Morgan[27]:
"The size and quality of partnerships […] between the early-stage company and large pharmaceutical partners present the investor with reasonable […] starting points for the rank ordering of the value of early-stage companies. Moreover, collaborations undertaken with the leaders in various therapeutic categories or fields can lead to a different validation than those undertaken with pharmaceutical partners whose technical or market strength is not the highest."

Info can be found in annual reports (as described in 4.1).

The DeCODE-example:
A substantial portion of DeCODE's revenue has been derived from contracts with a limited number of significant customers. The largest partner is Roche, followed by Merck and Applied Biosystems Group, ABG. Together, these three joint ventures have accounted for about 60% of DeCODE's annual revenue. In March 2004 DeCODE teamed up with computer giant IBM to develop genetic informatics tools.

Comment: Other companies believe in DeCODE, which can be used as a measurement. However, the journalist must watch out for circular logic. Moreover, it can be worth while for the journalist to investigate whether the aims of the partners coincide with the supported company's, since hidden agendas may be present.

[27] Zekauskas, J., Company Report deCODE genetics, JP Morgan Securities Inc. Sep 27th 2001

5. Selling dreams

This paper is not a manual for journalists covering innovation-based company. However, it could be used as a primer for a discussion on how these companies can be covered more thoroughly. Since companies may meet competition, legal regulations, ethical hurdles, political resistance and customer's skepticism, journalist will have to use many other methods, all depending on the specifics and the developmental stage of the company.

The key issue, however, is not to just rely on figures presented by the companies' PR-bureaus. In that sense, the methods presented in part 3 and 4 of this paper can be valuable. I haven't found any journalists using the same approach as I did in evaluating DeCODE Genetics. Since start-up agreements with large financial contributors are a common theme in biotech and IT, this approach probably could be used much more by journalists. Though it may lead to circular logic, it is the method that analysts trust the most.[28]

This paper focuses on a publicly traded company. A private company, like Google, will be much harder to evaluate since the journalist must find people willing to speak. Mylene Mangalindan, a Wall Street Journal reporter in San Francisco, covers two Internet search engine companies; privately held Google and publicly traded Yahoo. When it comes to Google, she is deserted to interviews with investors and employees as well as with Google's partners and customers. But crucial figures like revenue, income, expenses and executive compensation are "extremely hard to find", she states. "Even some investors are not privy to that information because they might be passive."[29]

Since most methods in this paper rely on SEC-filings, they can't be applied to research on privately owned companies like Google. However, that isn't a large problem for main stream news media since the editorial interest in a company tends to increase significantly as it goes IPO[30], thus becoming interesting to the audience who wants to know where to invest their money.

For specialized news media covering start-up innovation-based companies that aren't publicly traded, the only way is to do like Mrs. Mangalindan; conduct lots of reporting and build a trustful relationship with the company.

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[28] Zekauskas, J., Company Report deCODE genetics, JP Morgan Securities Inc. Sep 27th 2001
[29] Mangalindan, M., e-mail conversation April 1st 2004
[30] Initial Public Offering of stocks

By using the deal between DeCODE Genetics and Roche, I managed to establish a firm ground to claim that the company hadn't kept its promises to the Icelandic people. Thanks to my efforts to hunt down facts, I managed to guide the audience to a better understanding of its status.
So far, the company was only selling dreams. Just like with most other biotech companies, the primary force behind DeCODE Genetics is the boundless optimism of public stock-market investors, fueled by the expectation of huge rewards from the biotech lottery. In 2003, for instance, the U.S Biotechnology firms raised nearly $4 Billion through new stock issues[31]. But during the same year biotech managed to post almost exactly the same amount in net losses. In fact, only 13 of the largest biotechs managed to even turn in a profit in 2003.[31]

In a Wall Street Journal leader, the biotech reporter David Hamilton states "Much of the financial uncertainty in the industry reflects the fact that there's no particularly good way to value biotechnology companies." That, if anything, calls for a commitment to develop journalistic methodology.

Though most readers found the DeCODE trilogy informative, some representatives from the biotech industry found it provoking. I still wonder if that was due to their unaccustomedness with revealing stories about companies in Swedish news media. If that was the case, it strengthens the motives to develop innovation journalism as a beat. An issue of warning though; The evangelists will have to be prepared to defend innovation journalism, explain why it is important and motivate the companies to some degree of cooperation.

[31] Hamilton, D., research, The Wall Street Journal, April 2004