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LEE FLEMING

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Barry Riceman at NetD (A)

Brandon Fogg stared at the dashboard for over a minute before turning the ignition key. In less than an hour, he would need to explain to his lead director what he planned to do regarding a potential breakthrough invention that could save his struggling start-up. In his career as a software engineer, manager, and most recently as CEO of NetD, he had seen his share of problems in transferring ideas from research and development (R&D) into sales. Nothing came close, however, to the problems at NetD. The firm had assembled some of the most talented engineers in Silicon Valley and, not surprisingly, that team had come up with an array of creative breakthroughs. The firm had stalled, however, as it attempted to commercialize these breakthrough ideas. After three years, investors had become impatient and were demanding proof of the products that would lead the firm to a successful initial public offering (IPO) or acquisition. Valley bloggers had begun to eviscerate NetD as yet another example of Not Invented Here (NIH) syndrome. Fortunately, the firm's star inventor had just invented a new intrusion-detection algorithm that greatly increased the opportunities for selling the firm or going public. Even with this new product, however, Fogg still had to unblock the product commercialization pipeline, or he would probably be looking for another job.

Background on NetD

Fogg founded NetD in mid-2000, just before the dot-com downturn and thus in time to raise $40 million from the usual Sand Hill Road suspects. Given meteoric growth in e-commerce sites during the previous half decade, Fogg foresaw the growing need for security solutions. As he put it in his elevator speech, "If you own a retail store, your biggest security risks are the 'five-finger discount' and perhaps a robbery. But when you're selling on the Net, you have to worry about someone taking down your site entirely or posting a series of bogus purchases."

Even though he had dropped out of his MBA program at Harvard Business School, Fogg had little trouble raising money. In fact, when potential investors saw the vanity license plate—QUITHBS—they inevitably drew the favorable comparison with Steve Ballmer, who quit Stanford Business School to join Microsoft. The first several months of NetD's existence resembled the archetypal Silicon Valley start-up, with 100-hour workweeks, staffers sleeping at the office, and fawning coverage by *The San Jose Mercury News*.

Professor Lee Fleming and doctoral student Matt Marx prepared this case. HBS cases are developed solely as the basis for class discussion. The company mentioned in the case has been disguised. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

Three years later, however, NetD had burned two-thirds of its cash hoard. Far from a typical dot-com, it had earned paying customers and a small trickle of revenue from a series of projects (see **Exhibit 1**), though not nearly enough to achieve positive cash flow. The principal source of cost was, predictably, headcount, which had swelled in spite of a recent hiring freeze by which the company had attempted to level growth.

NetD Employment and Hiring Practices

NetD went after stars and had been extraordinarily effective in getting them to join. The firm hired freshly graduated engineers from Stanford, Cal Berkeley, and MIT and experienced engineers from the Silicon Valley area. For example, to attract Barry Riceman (widely thought to be one of the smartest engineers in the valley), employees of the company sent him an "e-mail bomb"—not a virus, but rather a series of personal e-mails from everyone at NetD telling him why he should join. Riceman was torn between joining NetD or a close competitor, and he was in fact leaning away from NetD. The weekend when he was making his final choice, Fogg asked each employee to send Riceman an e-mail listing three reasons they thought he should join NetD—not a form letter or a one-line e-mail, but a lengthy, three-paragraph e-mail describing key reasons he should join. In the end, Riceman accepted his offer from NetD and at a later company meeting said that the decision came down to this: "When I woke up Saturday morning and found 22 e-mails in my inbox from people I had never met, describing passionately how they loved the company and why I should join, what else could I do?" Dave Patterson, one of the best development and manufacturing engineers in the valley, had been similarly vulnerable to an e-mail bomb. The company was, in short, a recruiting machine. It prided itself on attracting the hardest-to-hire talent.

As might be expected for a firm that relied heavily upon innovation, NetD managed its intellectual property (IP) very carefully. All visitors, including interview candidates, were asked to sign nondisclosure agreements, as were all employees. Further, employees were required to sign a post-employment noncompete agreement (see **Exhibit 2**), which prevented them from working for a competitor for 12 months after leaving NetD. Finally, every employee was required to assign NetD the rights to everything invented while they worked at the firm. Inventors pledged to disclose their ideas often and to have their notebooks notarized. Legal staff reviewed disclosures regularly and decided whether to keep the ideas as trade secrets, to write up and submit patent applications, or to donate them to the creative commons so that they would not be locked up by someone else.[1] These decisions were difficult and not obvious in Silicon Valley, where ideas spilled over quickly between firms via mobile engineers, informal networks of friends and former colleagues, and a culture that encouraged employees to start firms and capitalize on their talents and ideas.

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[1] From http://en.wikipedia.org/wiki/Creative_commons: The creative commons website enables copyright holders to grant some of their rights to the public while retaining others through a variety of licensing and contract schemes including dedication to the public domain or open-content licensing terms. The intention is to avoid the problems current copyright laws create for the sharing of information.

The project provides several free licenses that copyright holders can use when releasing their works on the Web. They also provide RDF/XML metadata that describes the license and the work that makes it easier to automatically process and locate licensed works. They also provide a "Founders' Copyright'" contract, intended to re-create the effects of the original U.S. copyright created by the founders of the U.S. Constitution.

All these efforts, and more, are done to counter the effects of the dominant and increasingly restrictive *permission culture* pervading modern society, a culture pressed hard by traditional content distributors in order that they might maintain and strengthen their monopolies on cultural products such as popular music and popular cinema.

The Problem

Much of the venture capital raised by NetD had already been spent, and although many headlines had appeared in newspapers and magazines and more than enough buzz had been created, the company was having difficulty getting products out. The board let Fogg know that there would be no subsequent cash infusions without closer matching of revenues and expenses, so unless he could commercialize the firm's IP, layoffs were in the short-term outlook.

Nobody within or outside NetD doubted the brainpower or creativity within the organization (the firm reputedly had more patents than employees). NetD's engineers came up with limitless imaginative ideas—*too* many ideas, quipped one investor. On the back end of the commercialization process, the firm's sales force was regarded as technically competent, effective, and capable of quickly selling products as soon as they became available. The firm's problem was in taking early-stage ideas from inception to manufacturing. Indeed, valley bloggers had already diagnosed the ailing patient as suffering from NIH syndrome (see **Exhibit 3** for the blog and **Exhibit 4** for a description of NIH).

Employees were organized into an R&D lab, sales and marketing department, and manufacturing division (since NetD sold not just software but hardware as well). The firm employed three stars (designated and paid as technical leads) who stood out above the rest of an unusually talented staff: Bhaven Das, Barry Riceman, and Connie Sutton. Even the stars collaborated widely, however, and the firm's creative networks could easily be documented (see **Exhibit 5** for a network diagram).

NetD currently had three software products on the market. Sutton had invented one of them and Das the other two. While Das's ideas were considered base-hit products—solid but with little breakthrough potential—Sutton's idea was considered much more exciting and seen as a potential home run for the firm. Most frustratingly for NetD, the most creative inventor's work, Riceman's, had yet to get through manufacturing,. He was the "big idea person" at NetD and had come up with a number of outstanding product ideas. He had been at Netscape Communications and had been one of the star programmers driving weekly releases of the Netscape Navigator browser (the rumor was that he had sold his stock at the right time and made enough to stop working). Of course, many people worked hundred-hour weeks at the time, but no one had the throughput or the precision of Riceman. People would say that he could accomplish the work of five "strong" programmers without breaking a sweat. Moreover, he did this while contributing actively to open-source projects, and he was a well-connected and respected engineer within the open-source community.

In addition to being a brilliant inventor and coder, Riceman was a highly creative person, often achieving breakthrough insights across a variety of fields. Scientists, engineers, and people from all walks of life found him interesting and sought him out for in-depth discussions of their respective fields. He was a popular figure at NetD and, despite his long hours, it was rare to find him at his desk because he was always out gathering ideas and asking questions. Riceman was not the clichéd mad inventor alone in his laboratory; instead, he collaborated on almost everything he did.

Riceman was working after a Halloween party in 2005 when he came up with a new intrusion-detection technique for preventing hackers from gaining entry to websites via text-entry fields. Since nearly every e-commerce site requires users to enter text, patching this universal security hole could create a cash-cow product overnight. While Riceman was fairly secretive regarding the details of this project (called Bodie internally), word of his breakthrough leaked out and quickly diffused across the valley and beyond. Google, Yahoo, and MSN were all interested and had asked for details and demos. Investors were also excited—would this be the breakthrough that led to a high-profile and lucrative acquisition? Or would it drag on as many of Riceman's previous breakthroughs had? Pressure built on Fogg to bring the product to market.

Tracking Down the Source of NetD's Commercialization Woes

Fogg sat down to discuss the commercialization problem with his development and manufacturing team. He had worked with the team at previous start-ups. He had hired them as a pack from their last employer, where they had years of experience with Fogg and one another. Fogg began by asking Dave Patterson, head of manufacturing, if he knew what the problem was. Fogg respected Patterson greatly; indeed, Patterson's reputation was so good that he was often compared to Riceman, both within and outside of NetD.

"It's not a lack of motivation on this end," answered Patterson. "We've all got equity in the firm, so we all want to get stuff out and go public or get acquired."

"What about documentation, Dave? Is there a difference between the successful and unsuccessful projects in documentation?" asked Fogg.

Patterson thought about it but shook his head. "Most of the guys in R&D are pretty good about writing and documenting the code. But as you know, there is only so much you can communicate in documentation. Even the best recipe doesn't tell the cook exactly how to bake the cake. There's always some reconstruction on our end. We understand that and don't mind rolling our sleeves up."

"Can't you go back and ask questions?" asked Fogg.

"Sure, and in that respect, everyone is great. Connie, Barry, Bhaven, they're always really quick to help, though they're also busy. Sometimes you need to fill in the gaps when you can't get to them immediately."

Joan Chilcott, one of Patterson's technical leads, agreed and added, "Barry is especially good—if you can get him. I've learned so much from him, even though we've not been able to get his stuff working yet. He's got amazing depth across so many areas, sometimes I feel like I'm back in graduate school. The problem is that without him, I don't know what I don't know—his stuff touches on areas that I'm not even vaguely familiar with. And nobody else knows how it all goes together."

Fogg asked about whether the other R&D engineers besides the technical leads were ever helpful. Chilcott responded, "Sometimes they are and sometimes they're not. For example, Xing was a huge help on Darwin; she knew how the algorithm got developed, she understood the background and application, and she took a lot of pride in describing her contributions to the product. On the other hand, she hasn't been able to help much on Kearsarge. She didn't understand all the pieces and wasn't always clear on how they worked together."

Patterson also offered a simple reason to explain a number of past failures: "Sometimes R&D sends us a really cool idea that just doesn't work. Remember our run-time problems with Cerro Gordo? We all busted our you-know-whats trying to get that one to run but, in the end, we all agreed that it was a nice idea that just didn't work. Maybe R&D should think things through better before they send the projects over. For example, with Gordo it seemed as if there hadn't been enough critical questions asked early in the process. Though don't get me wrong, this is not the usual 'they just throw it over the wall' R&D-to-manufacturing whining."

Fogg thanked everyone as they left him alone to consider the problem. He pulled up the latest project summary and status report (**Exhibit 1**) and wondered why some of the projects succeeded and others failed. He wondered if the valley bloggers had already figured out the problem (**Exhibit 3**) and, if so, why he had missed such an obvious explanation. Riceman's latest breakthrough made it even more important to fix the problem, since without commercialization, the breakthrough would remain worthless.

Exhibit 1 Project Status at NetD as of January 1, 2006

Project	Lead	Status	Comment	Current Revenue Estimate (millions)	Actual Revenue (millions)	Patents Pending/ Granted
Altamount	Das	Released	Will soon be obsolete	4–6	2.14	None
Copperopolis	Sutton	Released	Minor issues remaining	15–25	1.7	1/2
Darwin	Das	Released	Large (500K) contract close to signing	4–5	0.6	0/1
Cerro Gordo	Riceman	Hold	Algorithm did not scale	0	0	2/0
Lundy	Riceman	Working prototype	Failed regression testing	20–100		1/0
Kearsarge	Riceman	Beta release	Debugging	0–80		3/0
Modoc	Sutton	Beta release	Debugging	20–30		2/0
Ratcliff	Riceman	Disclosed				0/0
Tinemaha	Riceman	Disclosed		0–40		1+/0
Zurich	Das	Disclosed		10–15		1/0
Bodie	Riceman	No disclosure yet	This could be the gold mine	100+		

Source: Company.

Exhibit 2 NetD Noncompete and Intellectual Property Agreement

EMPLOYEE NONCOMPETITION, CONFIDENTIAL INFORMATION, AND WORK PRODUCT AGREEMENT

In consideration of my employment and the compensation paid to me by NetD Inc., a Delaware corporation, or a subsidiary or other affiliate thereof (NetD Inc. or any such subsidiary or other affiliate referred to herein individually and collectively as "NETD"), and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, I agree as follows:

Exclusive Services; Noncompetition:

(a) I agree to perform diligently all tasks assigned to me in the course of my employment, including, but not limited to, any seconding of my services to NETD Information Technology Co. Ltd. I agree that during the period of my employment I shall devote my full time, skill, energy and efforts to NETD and shall not participate, directly or indirectly, in any capacity, in any business or activity that is in competition with NETD.

(b) During my employment with NETD and for a period of **one year** after the termination of my employment with NETD for any reason (but, in any event, for a period of not less than two years from the date of this Agreement), I shall not, on my own behalf, or as owner, manager, stockholder (other than as stockholder of less than 2% of the outstanding stock of a company that is publicly traded or listed on a stock exchange), consultant, director, officer or employee of or in any other manner connected with any business entity, participate or be involved in any business of the type and character of business in which NETD engages or proposes to engage without the prior written authorization of NETD.

(c) During my employment with NETD and for a period of one year after the termination of my employment with NETD for any reason, I shall not, either on my account or for the account of any person other than NETD: (i) solicit, induce, attempt to hire, or hire any employee of NETD (or any other person who may have been employed by NETD during the term of my employment with NETD); (ii) solicit business or relationship in competition with NETD from any of NETD's customers, suppliers or partners or any other entity with which NETD does business; (iii) assist in such hiring or solicitation by any other person or business entity or encourage any such employee to terminate his or her employment with NETD ; or (iv) encourage any such customer, supplier or partner or any other entity to terminate its relationship with NETD.

Confidential Information: While employed by NETD and thereafter, I shall not, directly or indirectly, use any Confidential Information (as hereinafter defined) other than pursuant to my employment by and for the benefit of NETD, or disclose any such Confidential Information to anyone outside of NETD whether by private communication, public address, publication or otherwise or to anyone within NETD who has not been authorized to receive such information, except as directed in writing by an authorized representative of NETD.

Rights in Work Product: I agree that all Work Product (as hereinafter defined) shall be the sole property of NETD. The term "Work Product" as used throughout this Agreement shall mean any and all discoveries, inventions, ideas, concepts, research, trademarks, service marks, slogans, logos and information, processes, products, techniques, methods and improvements or parts thereof conceived, developed, or otherwise made by me alone or jointly with others during the period of my employment with NETD or during the twelve-month period next succeeding the termination of my employment with NETD, and in any way relating to the present or proposed products, programs or

services of NETD, or to tasks assigned to me during the course of my employment, whether or not patentable or subject to copyright or trademark protection, whether or not reduced to tangible form or reduced to practice, whether or not made during my regular working hours, whether or not made on NETD premises. I agree that all Work Product shall constitute work made for hire with respect to any copyright, patents, trade secrets, trademarks and other proprietary rights I may have in any Work Product and, therefore, the property of NETD. I agree to waive, and hereby waive and irrevocably assign to NETD, all rights I may have in or to any Work Product and, to the extent that such rights may not be waived or assigned, I agree not to assert such rights against NETD or its licensees, successors or assigns.

Employee's Obligation to Disclose Work Product: I agree to disclose all Work Product to the appropriate individuals in NETD as such Work Product is created in accordance with the requirements of my job and as directed by NETD.

Employee's Obligation to Cooperate: At any time during my employment with NETD and thereafter upon the request of NETD, I will execute all documents and perform all lawful acts that NETD considers necessary or advisable to secure its rights hereunder and to carry out the intent of this Agreement. Without limiting the generality of the foregoing, I agree to render to NETD or its nominee all reasonable assistance as may be required:

(a) In the prosecution or applications for letters patent, foreign and domestic, or re-issues, extensions and continuations thereof;

(b) In the prosecution or defense of interferences which may be declared involving any of said applications or patents;

(c) In any administrative proceeding or litigation in which NETD may be involved relating to any Work Product; and

(d) In the execution of documents and the taking of all other lawful acts which NETD considers necessary or advisable in creating and protecting its copyright, patent, trademark, trade secret and other proprietary right in any Work Products.

The reasonable out-of-pocket expenses incurred by me in rendering such assistance at the request of NETD will be reimbursed by NETD. If I am no longer an employee of NETD at the time I render assistance at the request of NETD, NETD will pay me a reasonable fee for my time.

IN WITNESS WHEREOF, the undersigned Employee and the Company have executed this

Agreement.

Date:

Signature of Employee: NetD Inc.

_____ By: _____

Name:

Printed name of employee: Title:

Exhibit 3 "Slog Blog"—Slogging It Through in the Valley

Well it's MOTS (more of the same) for NetD. You'd think any VC-funded start-up would have realized by now that if you build a start-up out of top engineers, they are going to want to do things *their* way instead of begging/borrowing/stealing ideas. Yet NIH (Not Invented Here) syndrome is alive and well at the valley's latest darling.

Not to say NetD hasn't hired great people—after all, they snared Barry Riceman. But for some reason, they can't get a product out to save their firm. Apparently, Barry has solved the text-entry intrusion problem, but for some reason the manufacturing knuckleheads just don't get it. It's like watching GO fall apart all over again.

Wikipedia does a pretty good job of describing the NIH problem (first identified by one of my professors at MIT) [a] though it neglects to mention how NIH is more likely if the manufacturing org is old and too stable. The argument is that people get too comfortable and specialized, stop communicating with the outside world, and become unable to appreciate fresh ideas. NetD better break down the walls if they hope to survive and keep such talented and creative R&D engineers.

Now that Kai-Fu Lee is free, another thing I want to bring up is that so many companies cut off their noses to spite their faces w/r/t noncompete agreements. You would think that most people would GET IT by now that a noncompete agreement in California isn't worth the paper it's printed on: *the state doesn't enforce them.* So why have employees sign them? It alienates them for no reason. Plus, even if they could enforce the noncompetes, it's not a good way to instill a sense of loyalty—look at what Microsoft does by suing virtually anybody who leaves to do their own thing, because Microsoft can label just about any computer-related thing as being "competitive." Even more stupidly, Washington is one of the few other states besides California that does not enforce (I think Oklahoma and Connecticut are the others that don't enforce, but talk to your attorney before you take my word for it), so why did Microsoft even try? It's not as if Lee went to Boston where Microsoft could file and get a sympathetic judge.

Source: Casewriter.

[a]See R. Katz and T. Allen, "Investigating the Not Invented Here (NIH) syndrome: A look at the performance, tenure, and communication patterns of 50 R&D project groups," *R&D Management* 12 (1982): 7–19.

Exhibit 4 Wikipedia Entry for NIH

Not Invented Here (**NIH**) is a pejorative term used to describe a persistent sociological, corporate or institutional culture that avoids using existing products, research or knowledge because of its different origins. While the etymology is perhaps apocryphal, the American National Institutes of Health (NIH) is said[*citation needed*] either to be the direct inspiration for the term, as a play on its acronym or as an organization subject to this attitude.

Not Invented Here, in the context of corporate culture, sometimes occurs as a result of simple ignorance, as many companies simply never do the research to know whether a solution already exists. Also common is overlooking existing work while believing that one's own work should produce a superior product and more prestige: More specifically, a hegemonic company may practice an NIH policy intentionally and with awareness in order to maintain more complete understanding and control of its own 'invention', so as to stifle the development of rival 'invention'.

As a result of subcontracting, outsourcing, and other practices, an NIH culture within a company may also create conflict that prevents the adoption of solutions developed even by the company or its partners. For instance, if a Dutch company outsourced its software development to India, embedded technologies to Poland, and obtained hardware from Taiwan, should the Dutch employees resist dealing with workers in the other countries, the NIH culture could disrupt the efforts of all companies involved.

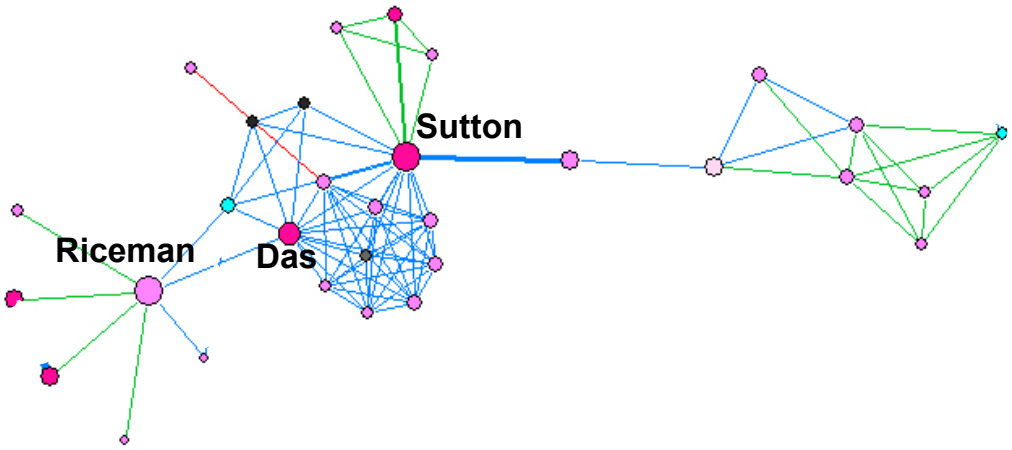
As a sociological phenomenon the "Not Invented Here" syndrome sometimes occurs as a unwillingness to adapt an idea or product because it originates from another culture, perhaps one that is seen as a competitor in the realm of products and ideas. In that sense it can be described as an effect of Nationalism.

The concepts of NIH may be contrasted with the opposite: the Invented Here philosophy.

Source: http://en.wikipedia.org/wiki/Not_Invented_Here.

Exhibit 5 Collaboration Network at NetD

Each node represents an employee, and each tie represents collaboration on at least one project. The width of the tie represents the number of collaborations. The size of the node represents the number of intellectual property disclosures by each inventor (normalized by the number of collaborators). Node size correlates strongly with salary, IP disclosures, and successful patent applications. Node color indicates the graduate school of the employee. Darker pink represents Stanford University, light pink MIT, and other colors a variety of schools.



Source: Casewriter.