

## **MarvCAD, Inc. – An entrepreneurial case study**

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### **ABSTRACT**

This case study and related teaching note address the progression toward commercialization of a computer software invention by a serial entrepreneur. This case study (along with the teaching note) will be appropriate for use in executive training, for graduate students and/or for undergraduates. This entrepreneurial business situation will provide a case facilitator with the opportunity to address elements of a successful/unsuccessful business development along a variety of business disciplines, including:

This business strategy case provides the case facilitator with the opportunity to address elements of a marketing plan for a superior technological innovation, including:

- Customer identification;
- Choice of and presentation of the configuration of the product;
- Organization of firm activities to promote the marketing plan; and
- Working with 3<sup>rd</sup> party collaborators.

In addition to exploring some classic business drivers for entrepreneurial success such as:

- Is there a well articulated marketing plan?
- Is the management team up to the task?,

the case will consider potential factors that are not normally emphasized in studying the success/failure of entrepreneurial initiatives. For example, to what extent can happenstance or serendipity affect the direction of and/or the success of the entrepreneurial activity?

Keywords: serial entrepreneur, computer aided design, serendipity, marketing strategy, product design

Note: This is a fictitious case developed for educational use. All statements, names, numbers, dates, etc. used herein were created for the purposes of this case and should not be construed as factual.

## BACKGROUND

Marvin Hill is a self made multi-millionaire. After graduating from his state's large, flagship public university with an electrical engineering degree, he took a job as an engineer with the Ford Motor Company. As he settled into the routine of day-to-day employment for this large manufacturer, he quickly determined that it was not the job for him – he felt constrained by corporate politics and his job did not involve high level electrical engineering work.

Finally, in 1995 after six years with Ford, Marv had amassed sufficient cash to found a start-up company around his passion: developing computer-aided-design (CAD) software to assist with large scale electrical engineering projects. Within five years, Hill and his staff had developed cutting edge CAD software that was beginning to garner a well deserved reputation in the marketplace. Marv financed the growth of his company, MarvCAD, Inc., with a modest amount of debt financing, and angel investors provided the necessary equity capital during the first two years. Marv also made it a point to work hard to sell even the early versions of his software. In addition to providing much needed revenue and cash flow, these sales provided “proof of principle” evidence for his software and also evidence of the existence of a legitimate commercial market for his technology. Marv knew that the acquisition of these so-called “alpha customers” would accelerate and expand financial opportunities for his firm, be it the raising of capital from professional investors or in the positioning of his firm for sale. In fact, in 2000, to raise capital for business expansion and to fund development of the successful CAD software on multiple computer operating systems, MarvCAD went public via an initial public offering (IPO). Thereafter, within one year, MarvCAD was purchased via takeover by a large software vendor which wanted to expand its offerings to engineering clients. Marvin agreed to run what was previously MarvCAD as a division of the new firm. So, within twelve years after college graduation, Hill was wealthy (he had been able to retain a large block of MarvCAD equity) and back working for a large corporation. The former was good news, but the latter was bad news – Marv hated his new job, so he “retired” to the golf course after 18 months.

Marv began living it up – golf in the summer, skiing in the winter and extensive travel year-round. He lived in a big house in a swanky neighborhood and enrolled his children in the most prestigious private school in his area. His oldest daughter, Dorothy, took to the private school and became a squash racquets aficionado and prep school champion. In fact, during her high school career, Dot decided that her goals were to play squash on a professional level and to join the women's professional tour. Since squash at its highest levels was played in Europe and Asia, not the US, Dot would need to regularly train and compete in those locales. Marvin was willing and able to support Dot's squash dream, but it meant that Dot would miss large blocks of school time on a regular basis.

By this point, Marv was tiring of a life of leisure and had begun to tiptoe back into the business world. The non-compete agreement that he had signed with the large software company had expired, and he and a small staff had begun developing a CAD electrical engineering product, but in this start-up the emphasis was not the development of the most sophisticated electrical engineering CAD software (as was MarvCAD), but software to train potential users of CAD electrical engineering products. The real value added in his new software came from the product's ability to train individuals in an extremely complicated subject matter, CAD electrical engineering, in a virtual, online environment. Unbeknownst to Marv, the capabilities of his online training shell software were every bit as sophisticated as in the popular platform that Blackboard, Inc., sold to many academic institutions. In fact, an argument could be

made that Hill's software was superior – users could seamlessly work with audio, visual, website and proprietary content; extensive search capabilities allowed users to quickly find information in any of the delivery formats; and since each piece of the software was modularized, extensive customization and use of 3<sup>rd</sup> party add-ins could be easily accommodated.

As with his first start-up back in 1995, Marv was diligent in marketing his product from the outset. By 2007, he had leased his system to a few mid-range manufacturing firms and was about to close a deal with the Pentagon to provide training to selected military personnel. Again, as in 1995, these sales were driven by the fact that his software was exquisite and that his software innovations were apparent and deemed highly valuable by the customers. It is truly amazing however, that Marv was able to close these sales given that his entire staff numbered six people, that he had no technical support department of any consequence and that he had no dedicated sales staff other than himself.

## NEXT STEPS

As in many endeavors in life, happenstance entered to change the direction of Marv's new business. Marv had begun to worry about how Dorothy would maintain her school work while traveling for squash. During meetings with her teachers and administrators, the school presented no viable approach that would keep Dorothy current in her studies during her time away. Marv's reaction to this was to fix the problem! In short order, working with various teachers at the school, he put his daughter's courses in calculus, physics, history and English entirely online using his software. As was Marv's *modus operandi*, the online courses were of a high quality – richly formatted with audio and video resources in all curriculum materials and employing best practices in online delivery.

During this development, Marv became smitten with online course delivery and decided that he would shift his new firm's efforts in that direction. He would hope to keep the CAD electrical products as ongoing cash flow generators, but his intention was to change the thrust of his company.

One of Hill's golfing partners, Dr. William "Snooks" Tonkin, was a recently retired finance professor from a local university. During libations at the 19<sup>th</sup> hole following a round of golf early in the 2008 season, Hill discussed his latest thinking with Snooks and asked if Snooks might like to collaborate to develop finance-based content for use with Marv's delivery system. Snooks was aware of Marv's successful background, but was hesitant to participate. While an academic, Snooks had had an active consulting practice focusing on early stage business development and he knew well that failures were common, that start-ups didn't often have sufficient cash to pay consultants and that equity participation in the start-up often led to nothing. Furthermore, Snooks knew that he would never agree to develop content "on the come", but that there would need to be tangible payment for his efforts. Snooks and Marv agreed to meet the next day, at which time Hill would demonstrate the software and discuss business strategy.

Snooks arrived at Marv's offices the next day, a Saturday at 10am. No other employees were in the office. After some pleasantries, Marv demonstrated the capabilities of the software using the CAD programs. Snooks was duly impressed; the software was incredibly slick. Next, Snooks began to question Hill about his business strategy and, at this point, the discussion went decidedly downhill. Marv could not articulate a strategy and it seemed like he was moving in several directions at once with no focus. It was utterly surprising to Snooks that an engineer who

was clearly highly disciplined in the development of high-end software could be so scattered and unfocused in his business direction – or was he simply keeping information close to his vest.

Marv went on to describe some additional content for which he and “subject matter experts” had built training courses using his software. Topics included ethnic cooking and bicycle repair. Marv claimed that his plan was to sell these online training courses to retail customers. Again, he could not articulate how he would market the training materials (he still had no sales staff) nor who his competitors were. He obliquely referred to using 3<sup>rd</sup> party distributors. Marv also planned to maintain and expand his presence in the CAD electrical engineering space, but again, no specifics.

After about two hours, most of which were used to preview all of the bells and whistles on the impressive software, the meeting ended with both parties wanting to evaluate whether it made sense to proceed. Marv and Snooks agreed to meet again in one week. To give Hill an idea of the type and quality of finance content he could provide, Snooks gave Marv a CD containing financial literacy curriculum materials that he had developed just before retiring. He pointed out to Marv that the development of these curriculum modules had been funded by the Albion House Educational Foundation as a resource for non-commercial educational use.

A few days later, Marv called to say that he definitely wanted to meet and that he had built a proto-type training package using his software and the financial content that Snooks had provided. Further, Marv had used a facilitator with whom he had experience to “deliver” the materials via audio and video segments. This development caught Snooks completely off guard; his first reaction was to reiterate that the Foundation would definitely not support any commercial usage of the curriculum. In any case, they agreed to meet again in three days.

Snooks needed to determine if he would become a content provider for Marv, and if so, under what terms and conditions. Also, based on his friendship with Hill, Snooks wanted to give Hill his best advice on business strategy. Dr. Tonkin began to organize his thinking.

Regarding Marv’s plan to sell content via his delivery system:

- Did Snooks want to be a subject matter expert?
- If so, how would Snooks get paid?
- Did the marketing strategy to use 3<sup>rd</sup> party distributors have a future?
- Was it reasonable to expect that end users, i.e., retail customers, would appreciate and attribute proper value to Marv’s delivery system?
- Would there be any scenario under which Snooks could recommend building a *de novo* sales operation to market content commercially at retail?

Further, Snooks wondered if there was any project that he could suggest that would allow him to earn a reasonable per diem consulting rate and also benefit Marv’s business. For example, might Marv pre-sell a finance training program to his existing CAD clients? Might the Pentagon be willing to offer financial literacy training to the military using Marv’s system with which they are satisfied and familiar? Such an approach could fund Snooks’ initial developmental work, after which he would be willing to be paid royalties on possible future sales.

Snooks also wondered if the best business approach involved content at all:

- Wasn’t the real value added in the software itself?
- Could it be preferable to sell/license the technology software itself without any content (maybe to a firm like Blackboard, Inc.)?
- How long would it be before other software competitors perfected similar or superior technology?

In this vein, Snooks recalled that Marv had asked several times if Snooks' previous employer, Magnus Normal University, might be interested in adopting the software for its considerable online education program. It was clear to Snooks that Marv was fishing for an introduction and recommendation to Magnus Normal.

Snooks now began to prepare his talking points for the upcoming meeting.

## CASE TEACHING NOTE

An interesting way to begin discussion of this case could be to review the career trajectory for Marvin Hill. He would appear to be a typical serial entrepreneur. In fact, while not stated in the case, Marv also took small equity stakes in various start-ups in his area in return for mentoring the start-up entrepreneurs. It would also be interesting to explore Marv's understanding that the marketing of his technology was just as important as building elegant software. This level of business understanding is often not apparent to scientists or engineers. The class might consider:

- How important was Marv's concentration on marketing, even the early stage versions of his products?
- How can business managers stimulate scientists and engineers to realize that developing the most elegant product (especially at the beginning) may not be optimal?
- How did Marv's "proof of principle" evidence speed up the timeframe by which Marv was able to do his IPO? For example, he knew that potential professional investors would value any "de-risking" that the firm had done, i.e., any steps taken to resolve uncertainty associated with the startup.

It would also be interesting to speculate how Marv was able to sell the MarvCAD product(s). With no sales staff or meaningful customer support, either Marv is a super salesperson or his technology is over the top. One wonders if his ex-colleagues from Ford might have made introductions. We also don't know if Ford was a customer – it is certainly not unusual for a company to work with ex-employees. If Marv left Ford on good terms, given what we know about the quality of his electrical engineering CAD product, it is not unreasonable to think that Ford would become a MarvCAD customer. The case facilitator has considerable latitude to use Marvin Hill to explore issues around the potential struggles that are often encountered when technical specialists enter the business arena.

By the time Marv faced his daughter's dilemma, he was back into software development and was ready to repeat his earlier success in a different market segment of the electrical engineering CAD space. A stimulating discussion could center on how Marv would likely have proceeded if his daughter hadn't discovered squash. The class might consider whether his daughter's situation pushed his business in a non-optimal direction, or was it evident that he would sooner or later expand into online training for different content topics. Under the assumption that Marv wishes to maximize the value of his new firm and to monetize his equity position as soon as possible, might he have been better to concentrate fully in the more narrow electrical engineering market niche? A qualitative discussion about factors that are relevant in setting business strategy would be appropriate at this point.

By the time that the professor became involved, Marv was well on his way to transitioning away from electrical engineering CAD (although he would likely deny it) and to

moving toward selling online content training at retail. Snooks' first impression was that there were several aspects of the situation that were quite bizarre:

- Why would Marv develop ethnic cooking and bicycle repair training software? Was his software that easy to work with that there was a very low cost to go off on these tangents? Certainly selling finance content was likely to be to a fundamentally different market segment than cooking content! Was he simply throwing everything possible against the wall to see what would stick?
- How could Marv have no clue as to his business strategy, or was he, as the case speculates, being coy in his dealing with Snooks. It was hard for Snooks to believe that the former was true, but why was Hill focusing on electrical engineering, cooking, bicycle repair and finance with no apparent ability to discriminate? If the latter was true, Snooks would certainly not want to collaborate as he had had previously disastrous consulting experiences with that personality type.
- What was Marv up to with the Foundation funded financial literacy materials? Maybe it was an innocent effort by Marv to demonstrate his level of interest in a collaboration. Marv certainly knew that any commercial use of the financial literacy curriculum was out of bounds – Snooks knew that he made this point perfectly clear when he provided the curriculum materials.

Snooks divided his analysis into three areas:

1. Selling content at retail via Marv's online delivery system;
2. Selling a finance product to Marv's existing CAD clients; and
3. Maximizing the value of technology by forgetting about content all together.

Snooks quickly decided that approach #1 was a non-starter, and he would almost certainly not end up getting paid for any work he performed. Snooks recalled that Marv had mentioned the 'publisher's model' for compensation under which the distributor and the developer split revenues equally. Assuming that Marv would need to work with 3<sup>rd</sup> party distributors, Marv and Snooks would split ½ of the sales revenues. Marv had pointed out that content developers in this situation typically receive 10-15% of revenues. Quite apart from the level of the revenue split, Snooks knew that he would not work on a contingency basis. Furthermore, he believed that this approach would not be a business success. Wouldn't Marv essentially be competing with the Amazons of the world? If so, that sounded like a losing proposition to Snooks. As such, Snooks could not recommend either the use of 3<sup>rd</sup> party distributors or the building of an in-house sales force. The first alternative may well work in some circumstances, but the second approach was clearly beyond the scope of Marv's firm. Additionally, Snooks believed that no retail customer would appreciate Marv's special software delivery system at the time of purchase.

Snooks could see a possibility via the second approach: pre-selling a finance product to Marv's existing CAD clients. It would appear that these clients are large enough and have the need (especially the Pentagon), but it would be important to emphasize to Marv that the existence of a paying customer would be a necessary condition for Snooks' participation.

Clearly, the last approach that involved marketing the technology directly appeared to have the most potential. Marv already had his "proof of principle" in the CAD product and the few novelty products.

Students could be asked to perform an actual market study to explore this option. Who are Marv's competitors? Who are the likely buyers of his technology? Has there been recent

acquisition activity in this space? The students would find, for example, that Blackboard, Inc., has been quite active in acquiring potential competitors. The students would also quickly realize that Marv likely has a very short window during which his product will remain superior. An array of competitors is sure to bring similar technology to the marketplace in short order.

Regarding the potential adoption of the software by Snooks' previous university, Snooks was confident that Magnus Normal would not adopt Marv's technology. The school was entrenched in the Blackboard technology and, over the years, had devoted massive employee resources in the Blackboard system. Snooks knew that Magnus Normal would view a transition to Marv's technology to be risky and too big a step. To make his point, Snooks intended to tell Marv that this strategy would not work even if he provided the software to Magnus Normal for free.

As of the writing of the case, Snooks was still waiting to meet again with Marv.

Dorothy, Marv's squash playing daughter, spent a lot of her high school career training, playing and having fun in Europe and Asia. By the time she graduated (barely) from high school, she had completely lost interest in squash.

