About a week ago I came up with an idea.

Like many of my grand ideas, after thinking it up I was pretty sure at some point over the next week I would find a "gotcha" that would make the idea infeasible or otherwise unachievable (Or, at the very least, too risky to be worth it).

I have yet to find that "gotcha", but that's not to say that there isn't one. Yet, every person that I have talked to has responded enthusiastically.

The idea would include starting my own company within the next three years. However, it would probably be best not to first describe what the company would do---perhaps I can better clarify the idea by starting out describing the asset that makes the company possible.

Over the past year or so, I have begun to watch more and more Japanese animation(I'll just call it anime). Every week on Saturday, several DigiPen students (and a couple of non-DigiPen students) clamor over to me and Amber's apartment to watch anime, among other things. Rabecha Lenhart also comes over on occasion.

Last Saturday while we were watching anime, the topic of computer cell-shading came up. Rabecha mentioned that there was a Japanese program called "Lettuce" that aided in the coloring process, specifically for shadows and highlights. The way she described the interface seemed rather clumsy to me, but at the time I didn't think too much of it -- until a day or two later when I was watching the new Sol Bianca DVD on my computer.

What got me thinking was me noticing how much frame duplication there really was, even though the animation was of relatively high quality. I guess it was because I had always seen animation drawn at such a low frame-rate that I never really noticed it before. However, I really noticed how smooth the animation looked whenever I played the DVD at fast forward--the result looked incredibly smooth, albeit rather accelerated. I began to think of a way to make animation smooth without doubling the number of animators, their workload, or hitting the fast forward button.

In my head, I imagined a software program that would allow animators not only to digitally cell-shade frames, but also morph between them.

With that thought in mind, I began to watch a few episodes from what few animations I have around the apartment. As I watched, I looked at how the outlines were used and shaded, how the colored cells moved between frames. I also looked at any "cool" effects, and tried to imagine what software constructs it would take to create them in a way that would be

natural for artists to use.

It is one thing to have software morph between frames, but it is another thing to have software that does it in an intelligent manner. Purely morphing between frames does not give the artist enough power or temporal detail for subtle motions, such as facial expressions, or movement of clothing. Linear (time-wise) morphing would also be inadequate. But, each of these problems I came up with a way to effectively deal with.

The idea for the software grew far beyond just cell shading and frame morphing. I thought of ways to integrate music and sound, mechanisms for aiding with lip sync, even down to the editing software.

The digital representation of the animation would be resolution independent on three dimensions: X, Y, and Time. Physical "hard-frames" could be drawn at significantly less than 15 frames per second but the output could be rendered at a smooth true 60 frames per second. Even better, the artist could draw only as many frames as he or she needed to create a basic sense of motion for the scene, and then fine-tune the motion details between key-frames through the software. A film could be specifically rendered for a target medium, eliminating any cost associated with converting from one format or aspect ratio to another.

You could even do things that would not otherwise be possible using traditional tools, such as tune the relative outline thickness for the entire film. Admittedly, the usefulness of that example is limited, but I just wanted to express the flexibility and power that this system could have.

The core rendering engine would be flexible enough to be used for high-quality stills, such as posters or other promotional graphics, without the help of any other software. I know this because I have already written a core rendering mechanism that is very similar to the one that I imagine for this system. The core is very simple and powerful; the trick is writing everything else that plugs into it---which would be 90% of the development work.

The question that I have been wrestling with is this: Given such a powerful technological asset, could this software be the basis for founding a company; specifically an animation studio?

With such software, the studio would be able to produce animations faster, cheaper, and of better quality than what would otherwise be possible.

I am imagining a business model similar to that of Pixar. Pixar developed it's own software tools for all of their films. However, they also license that technology to other companies, which gives them two sources of income. Such a business model would seem to lend itself to supporting a more financially stable and independent company.

Another question that has been raised is my ability to develop this software. I can say with confidence (not arrogance) that I can develop this software (as described) myself at least up to the point of a proof of concept (alpha stage). Once I have the software up and running at that level, I can demonstrate to potential investors, perhaps get some

loans to start the company.

Before I came to DigiPen, I had thoughts of starting my own company one
day, but back then that company was a video game studio. A long time ago
I decided that such a venture was just too likely to end in catastrophic
failure. As such, I shelved my desire to become an entrepreneur. Without
any deeper inspiration or innovation, I could not imagine such a company
succeeding--and have no desire for such failure.

The difference here is just that--inspiration and innovation. In this
case, I have (what appears to be) a fresh idea that has many ways to
expand and grow into a financially stable company with a commercially
viable and competitive product.

I *know* I can write that software--there is no doubt in my mind that it
is well within my capabilities as a software engineer. I'm not saying
that it will be easy or trivial, just that there is nothing that I have
mentioned so far that I do not know how to do or how to derive.

What I *don't* know is enough about the animation industry. For all I
know, software could already exist that does everything that I mentioned
and more(Maybe it's called *2D* Studio MAX... or something...). Perhaps
there is one "make or break" detail that I am overlooking. I need become
more fluent in the vernacular of animators. I need to know how animators
work. I need to find out what tasks for an animator are the most
repetitive.

Most importantly, I need someone to take a look at my ideas and ground
me firmly to the floor. While I may know myself and my capabilities, I
don't entirely know what I'm getting into.

I have no problems with someone shooting down my idea. Indeed, if
someone can convince me that this will not work (and also why it won't
work), then they have my utmost gratitude.

I would greatly appreciate the chance to discuss with you these ideas in
person, as I am filled with many questions. Obviously, I cannot expect
you to answer them all, nor would I be able to remember all of them to
ask. I would just generally like to have your opinion on my proposed
plans and current direction.

I should note that I have no intention of dropping out of DigiPen. While
I may do some research and documentation over the next year or so
outside of DigiPen, I would not be doing any hard development until
after I graduate. At least, that's the plan at the moment.

I apologize for writing such a chunky email, but I felt that my
verbosity was necessary to elaborate on the scope of what I am thinking.
- Rob