The ODG, Cars, Arms, and Lunar Rockets
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1. A Brief History of Ontic

Since the Ontic Development Group's (ODG) inception in 2007, we have been working feverishly on several public and private projects. Initially, the ODG did private research and design for tech and innovative companies. After several months in development with Google, the Moon and the X-Prize Foundation, they launched their lunar rover, or at least announced plans to. Their product was passed to the manufacturing stage, and is still in production. Estimated launch window begins in March of 2011.

After some problems with Non-Disclosure Agreement violations (a lost employee or two)- most of the team was reassembled under Ontic's new management. However, these directors brought in several outside companies- otherwise known as alliances. Ontic relocated into the middle of nowhere and began development on robotic prosthetics. With the help of a small biomedical engineering firm, they were able to develop a fully functioning and practical arm system.

Due to FDA regulations, the arm was not able to be placed into market. During the FDA testing trials, the Ontic facility was destroyed by a misfired weapons system. After several employees lost their lives, and most of Ontic's research was destroyed, the ODG faced bankruptcy.

After months of legal battles with the FDA and law enforcement, a Silicon Valley based electronic car company purchased the ODG. Once again under new management, Ontic changed directions: entering the world of autonomous vehicles.

While most of Ontic's research and development will not hit the open roads anytime soon, their additions to the field will help many future car companies, GPS navigation services and aims to make the roads a bit safer.

2. The Men Behind the Curtain

Now, its 2010, and Ontic has been 'alive' for 3 years. By definition, Ontic means to have existence. But, unfortunately, Ontic does not exist. The Ontic Development Group, a fictional corporation is the brainchild of Jeffrey Hsu and Quintin Carlson. Together they hoped to change the way Botball Website Challenges were addressed.

Since the first year Jeffrey Hsu and Quintin Carlson won the R&D Website (something neither of us were expecting), we have wanted to do a presentation. We have had so much fun and learned so much during these three years, we hope to share just a bit of it through this paper and a presentation.

This second portion of our presentation is aimed at addressing some of the pitfalls of our process, thinking and design. We hope to lead some light on the process of building a R&D site, dealing with designers, coders, and thinkers. Track projects, micromanage, and hopefully have a bit of fun along the way.

3. Year One

This was Quintin's second year and Jeffrey's fifth year in Botball. Neither of us had really heard much about the R&D Website challenges, but when we were informed about the project by our sponsor, we jumped at the opportunity. Design your own Lunar Rover? Sounds like fun!

It all started off great, us working during our club's training hours and meetings. Secretly designing our website using the wonders of Apple's iWeb software. However, Quintin was not satisfied with a simple web based research paper. No!

He wanted the site to be creative and interesting. Nothing the judges would have ever seen (at least to his knowledge). He knew what he had to do: make a corporation. Quintin and Jeffrey spent hours pouring over unusual word dictionaries, trying to come up with the right name for this fictional organization. Ironically, they landed on the word Ontic. By definition this was the exact opposite of what Ontic really was. They slapped on 'Development Group' and then spent a good portion of time in Photoshop building a logo.

To Quintin, the project was not just about a rover, it was about an online experience. Jeffrey on the other hand, attempted to keep the group grounded. Working hard to draw up intricate sketches of robot parts and spacecrafts. However, Quintin's creative affordance had not been spent yet. Video podcast time. Using the onboard iSight cameras in each Mac, Jeffrey and Quintin helped explain, in normal speech, how different parts of their lunar rover was going to work.

In the end, the 'Ontic Development Group' placed first- a surprise to both teammates. Soon after we found that X-Prize (part of the judging process), had changed their rules to force companies participating to have video podcasts or video blogs. In our mind, we had some innovative aspects of the rover along with an interactive way to display them.

4. Year Two

For the second year, Quintin and Jeffrey aimed at building a more professional looking website- so they brought Nease Robotic's lead programmer Matthew Thompson on board.

To help manage everything that was required for us to do- we used a online web project management service call Basecamp. This service allowed us to track what everyone must do, milestones and due dates. However, even with a more organized group, a fancier website design and seeming more technical articles, we did not place. (They must of really disliked our color scheme!) That and our videos were a bit outlandish this year.

5. This Year, Year Three

Ontic's team returned to its normal size, with Matthew Thompson unable to assist in the programming. Instead, Quintin and Jeffrey turned to a popular publishing platform: Wordpress.

With limited time due to a massive workload (thanks IB), Wordpress took the sometimes frustrating aspects of HTML, CSS and coding out of the web design equation.

Concentrating on autonomous vehicles, they came up with a three tiered system for our cars. Once again, we brought back the original style of videos to the site- this time in HD. Lucky for us, we were able to place second!

6. Everything We Learned

Throughout these three projects, we have learned so much- and not just about web design, coding and logo making. The research process was fun and exciting- filled with long hours in front of Google or at the library.

However, even with all of the research aspects, the web development experience, there is a lot we think we could have done differently. Hindsight really is 20/20.

6.a Team Organization

To help keep everyone sane, each of us would specialize in certain topics. For instance, in the second year, Quintin covered Power and Safety while Jeffrey covered Muscular and Skeletal structures of the prosthetic.

This allows the lead in that topic to make the final decision to include or not include certain bits of information. They make the call. Sure, there were some articles we worked together on, but for the most part divvying up the work made things easier.

Also something that we found out early along, one person might be the creative person and the other the more technical teammate. In this case, its important that the creative person - in our case Quintin - follow Jeffrey's guidance with technical phrasing and wording. In return, Jeffrey would allow Quintin to lead the designing and media production aspects.

To keep on track, it is a good idea to have some sort of organizational system. Through the last two years, we used 37signals's Basecamp program. While not free, the slight expense was well worth it! Now, there are several alternatives to choose from- from the startup- GoPlan to the free ProjectPier.

Though it takes a bit of diligence to keep the system going- you and your sanity will appreciate it come the last day before it's due!

6.b Media and Creative Affordance

In all three years, we uploaded videos to our website. In the first year, the video was taken via a webcam in our school's iMac. While not of super high quality- it allowed us to express more than we could in our writing.

In our second year we borrowed a higher end camera, but took the idea a bit too far. Instead of making the videos more talk centric, they were more commercial looking. This did not exactly get the right point across, and actually took away from the website.

Finally, in our third year, we used Jeffrey's family's HD camcorder. We returned to the simple video blogging format- which was easy to edit.

We both truly feel that the videos providing a great extra layer to our written content. It showed our passion and drive and interest in the technology. Something that isn't always apparent in our writing.

6.c Set Your Own Due Dates

While Botball has been very nice about last minute upload failures, the stress is not so nice. Instead, plan your due dates a day in advance. Don't even think about the real one. Come midnight uploading- you're FTP will probably work fine, and your Comcast internet connection will not drop out.

Yes, this seems like a simple fix- but after several stressful right-before-deadline moments, we have seriously leaned our lesson.

6.d Have Fun!

This project, while research oriented, is supposed to be fun! Don't turn it into a chore or extra homework. If you're starting to feel that way about it, step away and rethink how you could make the project more interesting. In our third year, Jeffrey was having a difficult time handling both his heavy senior year and the 17 college applications he was submitting.

This project became a fun outlet for him- away from homework and other projects. Make it exciting- like we did, pretending we were a corporation!

7. Conclusion

We both hope that you could garner a bit of information about how to handle your next R&D Project. Unfortunately for us, this will be our last year. However I know we will be following the submissions closely next year, and rooting for our school.