

## Project Design Success Story

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*Summary: Completed project on time, budget, and quality. Stakeholders were happy. So was I.*

### System Overview

The project in question was an infrastructural messaging system. The system design was along the *IDesign Method* comprising of half dozen or so services and three separate public APIs. The development environment was far from ideal, with developers interrupted a lot and no guaranties of 100% availability and for that matter, not even 80%. We knew that resource leaks were unavoidable and incorporated this into the project schedule. Some non-functional goals of the system were its scalability, availability, and maintainability. This meant that it had to be designed for distribution, reliability, and the absolute simplicity of the APIs.

### Project Overview

The project had high visibility, defined as one of the CEO' top priorities. Budget was very important (shouldn't it always be?) and we had very visible goals for this project. We had two developers, a dedicated project lead/project manager, and an architect (yours truly). I handled all project design and made recommendations based on earned value projections, rough spots, etc. The project manager was a liaison between the project team and our stakeholders. The project manager and I were very symbiotic. Often times, I went where he went and vice versa. We defined completion metrics at the beginning of the project. Namely, in order for a component to be completed it had to be a) tested (unit and integration) b) code reviewed c) all integration for that component had to complete by the same standard. This was vital for getting an accurate pulse of the project's vitals. We agreed to bi-weekly progress updates with the stakeholder that included performance against budget and schedule, corrective actions taken, and milestones reached. This report contained an executive summary for the stakeholder to quickly understand the project, but detailed subsections which consisted of my interpretation of that data collected during execution. In the project design and execution I followed the techniques and ideas of the *Project Design Master Class* (PDMC), with some adaptation to our context, such as customizing the IDesign earned value charts templates to our reporting requirements.

## Project Execution

We started development as expected in early summer of 2014 with the anticipated delivery date of 9/26/2014. Almost immediately we saw the impact of the noisy environment and knew that we had chosen wisely to include expected availability in the project plan. Still, as early as the second week of the project, we saw that our critical path developer was slipping more than was wanted so we took a very simple step to insulate him from the day-to-day--a chair with a simple, handwritten note that said, "I am the critical path on a project. Please think twice before you interrupt me" (the PDMC also provided us with a T-shirt with similar text). The benefits of this action were almost immediate and we saw a nearly 20% rise in that developer's time-on-project. By the fourth week we had finished several components, but began seeing some overages on our earned value charts - the graph indicated underestimation - so we dropped by the critical path developer and noticed that he had gotten a little too ambitious in some of his design. We called a meeting with our stakeholder, explained the situation, and corrected the issue. Our new schedule called for completion on 11/7/2014. Things progressed as expected for several weeks, but during the 14<sup>th</sup> week of the project the developers were pulled off our project to handle support requests. This lasted about 10 days, during which we informed the stakeholder of the situation and (once again) renegotiated our delivery date. We should have mitigated that using risk decompression, as shown at the PDMC precisely for handling the unforeseen. At this point, we made our final schedule adjustment with a target of 11/21/2014. From this point on, we executed on the project as expected. We still had several obstacles to overcome, but the project team worked together to sort these issues out. We deployed the system on 11/20/2014 - one day ahead of our negotiated schedule of 11/21/2014. The project was viewed as a success and it felt very good to execute the way we did.

## Lessons Learned

We delivered the product one day ahead of our negotiated completion date. This is significant because you are always adapting to change and planning and negotiation is part of this process. If you are not negotiating, you are probably failing. What's more, we didn't have any changes to our schedule after Week 14. It would have been even better, but I actually made a mistake and missed some resource leakage that I should have caught and it cost me 5 days. When everything was said and done, we finished within 7% of our original budget. Juval says I should be within 2% or 3%. I tell Juval that I'm getting there. Without those 5 days mistake I would have been spot on the 3% mark.

An old army proverb says that plans are useless, but planning is everything. It is completely true. Juval labors over this point during the PDMC. It's a good thing to pay attention to. You come into it with several project design options and pivot between them to respond to reality. In order to execute a project successfully, you have to take into account nearly everything: architecture, staffing, skill levels, politics, job roles, complexity, holidays, completion metrics, team dynamics, communication, etc, etc, et al. It isn't a simple task, but it isn't as hard as the

industry might have you believe. What it does take is discipline and a commitment to honesty, self-reflection, and a lot of hard work.

The PDMC taught me Juval's risk model and that really super-charged my efforts; it's amazing what that little number can do for a plan. That was probably the most important thing I learned at the PDMC from a mechanization point of view. Besides that, it was all of the soft skills and the insight into human nature. Juval helped cure me of that pernicious disease called Optimism Bias. To never miss a deadline, you have to control the schedule. I can slice and dice a plan in ten different directions, present the stakeholders with several good viable options and use these to help a stakeholder understand when a product (or a portion of that product) can be delivered. But I can't know for sure whether or not my lead developer is going to flake out on me. What I can do is do the required decompression to a lower IDesign risk number, track meticulously, detect a problem and inform the stakeholder immediately and renegotiate. I control my deadline because I always know when a project can actually be completed based on the reality presented to me. A word of caution: this requires a little backbone. I'm usually the guy delivering bad news, but it's the same kind of bad news a doctor gives when he tells you that your cholesterol is too high. Fix it and you might stand a chance - let it go and you're done for. I'm hoping this isn't much of an issue - as architects this stuff comes with territory. Another word of caution: tactfulness is still required. Being an architect requires you to wear many hats and wear them well. When your gut tells you that something isn't going to happen in a month, chances are, it won't. The challenge as an architect and project designer is to be able to quantify that suspicion. The PDMC can teach you to do that.

We are getting a lot of positive feedback and support from C-Level individuals lately, but it had nothing to do with architecture. It was really the project design that made them perk their ears up. Ultimately, they care little about pretty architectures, but they care a lot about results. If all you do is create nice diagrams, but never deliver on your promises, you'll never get any traction. That's why it's vital to design so your projects with a the IDesign risk around 0.5 when you're getting started because it will help guarantee success and rebuild the trust between IT and the business.

### **Conclusion**

Projects do stabilize over time, but only with good management. Don't expect it to happen by magic or hope. The result is that success breeds success. The developers involved in my projects over the last year or so are consistently performing at a high level, even when they move on to other teams. It's really cool to be a part of something like that. We're producing quality software in a time and cost efficient manner with absolute transparency offered to any interested party - that's the kind of thing careers are made of.