

Software Development Project

Team Leadership

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Learnings Report, learned

Abstract—The world of enterprise projects can be complicated. Leading people into nightmare jobs all because they did not respect some basic rules. Unfortunately, those rules cannot be learn from books as it requires live experience. This report approaches some of these rules in a real world context. Planning monthly work takes time. That time can often be seen as a waste of it, therefore many young teams in software development tend to leave it for the other day. Moreover, unneeded complexity is very common on large projects due to the lack of organization and/or study of the problems being addressed. This document presents learnings and observations about these common problems, giving examples why they happen. We end this report by stating some important lessons learned from the activities performed, briefly explaining also why are they so important.

Index Terms—Project Planning, Team Coordination, Time Management, Portfolio III

Is This Term meaningful
in the context of this document?

1 INTRODUCTION

THIS activity started in the last week of July and ended in October, 31 of 2014.

My motivation for this activity, was related with the opportunity to learn more about Java related technologies and also building automation systems.

~~In this portfolio~~ my activities were performed initially on the ~~Smart Campus~~ project, hereafter referenced as ~~SC~~, and later on the ~~BIMK~~ project (contracted by means of INESC-ID to IST and developed by folks at office room 1-42).

Both projects brought me good and bad experiences. Therefore, a road-map of learnings will be introduced in order to settle the base of ideas discussed throughout this document: (i) my first learning about time was that, your free time is free for you only. (ii) Secondly, paying for someone's work can be done as an appreciation or as both compensation and appreci-

ation in a best case scenario. Compensation paying, stands for a payment to compensate the execution of a certain job. And appreciation paying, stands for a payment to demonstrate appreciation while trying to compensate a very underpaid job execution. (iii) And finally, my last learning was, never consider redefining your life goals in detriment of someone that is not your wife/family or very close friends, those are the ones that matter most.

2 LEARNINGS AND OBSERVATIONS

Here brief details about passed events will be introduced, underlining learning aspects acquired during their occurrence.

2.1 Plan first do it after

On my first days of work I received a guided tour by one of my colleagues about the projects happening in room 1-42 (R142). At the beginning, I was not very under what needed to be done, therefore I limited myself to listen and take notes about everything he said.

I observed regularly lack of organization. My colleague was doing its best, but simply the amount of things he needed to do in order to

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manage the project, plus all the other things since development to systems administration, was completely impossible. My other colleague in the Smart Campus had no expertise to manage, and so I quickly noticed that I would not have the required conditions to work.

To be able to work and focus on my tasks I need¹ a plan with the tasks to accomplish, ordered by priorities, with defined deadlines. A good scenario would be having someone covering that component, so that the rest of the team can concentrate in the "doing" part. This was the case here, since that someone was simply not there.

Later, on BIMK's project, the scenario was similar. I had three colleagues and a team leader. The project was late on schedule and no meetings were done on a regular basis. By profiling the team leader of BIMK I was able to understand a couple of things very fast, first he was very junior in terms of technical expertise doing enterprise systems, also he didn't had a behavior typical of a team leader—was too emotional distressed and had very difficulty in creating a speech that would make sense.

On both projects I played the project management role, and the results were measurable. Planning before doing is very important, not only to see where we are going "ahead", but also for motivational purposes of the team.

2.2 Less is more

This observation was motivated by the BIMK project. Often unexperienced and theoretical folks tend to create monstrous architectures foreseeing remote scenarios that could be a problem on an uncertain and distant future. Those architectures burden development progress, slow down entire teams and mark *almost no turning back* decisions—this type of decisions are those that are so critical in terms of development that undo them are almost impossible.

Simple example, BIMK needed an user management system, they choose Play2! ¹ framework which doesn't have any built-in or plug-gable via add-ins, therefore they decided to

1. <https://www.playframework.com>

build one. This also makes us think, who chose such limited framework with alternatives like Spring ² much more mature and wildly known, but moving on. User management is a software module which involves three layers at least: presentation (web interface), business logic and data access (deals with database specifics).

They developed the entire module as one big cake, and did the database access directly with SQL queries in code. No problem with that, except that the queries involved were about sixty or more. Moreover, they decided to use OSGi ³ and somehow they managed to achieve that all the communication with this user manager was entirely done via HTTP REST. I will rephrase, their own application internally needed to use REST over HTTP to access their own code. Excused is to say that, after 4 months of development they still had no user manager to show up. And this module was just about 10% of the project.

I am completely aware of the motives why this happens: It is common in unexperienced engineers, after stepping into a big project, they think they must use the entire collection of their knowledge and learnings from everything they heard that is being used out there, so they can look cool and fashion. Therefore, alluded by this new Era of technologies for this and that, they try to justify the use of all they can. Also they think high and make efforts to code review everything, buy tools to haste development and with this they flood their own boat with tons of weight and unnecessary complexity. In the end, when it doesn't work they blame, people!

2.3 Persons are not machines

When managing a project, the first thing to be done is research based on client needs. Requirements are written to lock often dubious specifications made by the client. These are the most important, since not limiting them can represent delays that can reach weeks to development teams.

Secondly, when the technology to be used is chosen, a gantt plan must be done. Well, this

2. <https://spring.io>

3. <http://www.osgi.org/Main/HomePage>

Avoid using footnotes in these documents

is not done typically by just one guy. What needs to happen is: (i) the team is divided into units responsible for specific developments, (ii) they are given between one and two days to analyze their tasks and made an estimation, (iii) with those reports the project manager, uses its knowledge to estimate all the tasks alone, (iv) in the end he fixes his estimations according to the received reports and estimates lags for every task, just in case something goes wrong, and (v) finally, time is given to the entire team to validate and think it over one last time about the overall plan. This process takes the time it needs, as not doing it, can doom the project before it starts.

The most important part of managing, is doing it thinking about people. People are not machines and this is good! Planning must ^{Take} have into consideration an 8h shift and that in those 8h no one is 100% efficient. We are biological machines, this being said, the complexity of reactions occurred inside a person daily, for many reason can make her not to function well, such as headaches, personal problems, bad sleep, health-related (allergies) and ultimately illness forcing those machines to stop working. This can seem obsessive, but is it? If you measure those events over an entire year, your project would have lost about 20% to 30% of working hours (I saw it happen in the past). Also do you account, for people's vacations and holidays? ^{Is} Manage is more than throw tasks to a *gantt* with time estimates. I'm not naive to the point of opening a company and let everybody work less, what I'm saying is that, knowing people is fundamental to understand how can we motivate them, so they work at 200%. ~~100%~~. ^{100% → more in experience!} 😊

If a manager does not know how to deal and manage people, how can he manage projects done by them! It is senseless.

2.4 Nobody is replaceable

^{It} In this, I state that nobody is replaceable, anyone that intends to think otherwise is ultimately a fool and often does not realize what ^{he} is saying. I will illustrate this with a real example.

Imagine a company that ^{has} just fired one of its department managers. This company invited then, one of their workers to manage the

entire department. He arrives early, plans work for everyone, performs daily meetings to keep track of the performed work and updates the plan also daily. In the end of the day he exits late, because he needs to plan the next day, the subjects of the meetings, foresee directions to be taken when those tasks are done and also spend 1 hour in the phone with the chief of the department. With all this, he also has an important role in the company, working in client projects of the department along with his colleagues, working and leading them too.

Short on staff, with unexperienced colleagues and projects late on schedule, ⁺ This worker, promoted with responsibilities only, decides to cancel his life plans to have more time for the company and goes to the chief and asks for a raise compatible with his new functions. The chief talks with the sponsor of the projects and exposes the situation, and later they decided to talk with the worker. This talk ends stating that, everyone is replaceable and finally they give the worker a few dollars of raise.

Now he can choose between affect every one, of his colleagues life's, by leaving them without their manager and leader. Making them work more hours, breaking their motivation that was so hard to build, or he could accept the dollars, give a deadline for his replacement and do its best to train his colleagues for ^{what's} coming.

This happened because the chief was never present and the sponsor ^{he} didn't knew anything about his work, therefore he was ultimately seen as replaceable. Unfortunately, all the turn-key solutions that could have saved the company projects on time, were lost in that meeting, all because of a few dollars. Later the worker was replaced by people claiming lots of expertise in the area. The worker stayed during their transition and observed those experts working and saw only lack of organization, no notions of project planning, lack of care about their colleagues work in detriment of their decisions and no expertise of what so ever.

During the first week of these experts, they lunched together with the chiefs and they felt the projects would now move on. But they were so wrong. Could tell more about a dozen real cases, that at the end made me realized that

people are not replaceable, they have certainly defects, but if you figure out how to fix or attenuate them, then you get their full qualities. If you hire new people, you are just restarting the process of getting to know this new persons defects, and when you do, what will happen? New hiring? The more delayed a project is, less people you should change or introduce in the project. Seems such a basic rule, learn in the first classes of project management, but is the one that most forget.

3 LESSONS LEARNED

With all this I learned some important lessons that made me certainly stronger for new challenges.

3.1 Your free time is yours

I learned that when you have free time, from the two one, or you use it for your personal projects, or, and this is the important one, if you decide to work with friends or acquaintances never deliver your free time free of charge. Even if you do charge lower because they are persons you like. Settle your conditions at the start. You could receive less until certain date, and the rest left unpaid must be compensated through means of something. Free time, free of charge, should never happen, unless it is for people you can consider part of your family. The reason for this is simple, people will be glad with you in the first 5 minutes, and 5 days later they will not give you the right value, because you have just sold yourself cheap, why pay more?! Seems hard to believe read like this, but it happens very often an maybe it happened to you already.

3.2 Appreciation vs Ownership

Connected with the previous text, is this topic. When you decide to work for a lower rate—thus helping your friends who don't have funds to pay for your normal rate,—you are receiving an appreciation for your work only. Therefore, they are not your owners just because you accepted some little dollars, much for them, but few for you according to your rate. It is important to establish this at the beginning or misunderstandings may occur.

3.3 Life goals are locked to foreigners

When working for persons not close to you, no matter what their problems are, or consequences of not having something on time, never, but never, think about redefining your life goals for them. It is their problem, if you re-define your goals to help them, then it will become your problem too. This happens because, those folks are now depending on you—this is what you did by redefining your goals to help. Therefore, respecting this rule will help you even into looking more professional to foreign eyes, they can be uncomfortable at start, but they will understand better than if you leave after giving them hope.

4 CONCLUSION

Summarizing, the learnings acquired from ~~this portfolio activities~~ were hard to assimilate. I based my entire collaboration with the projects without the lessons detailed before and it brought me some costs and hard feelings. Life can't be just about good experiences though, otherwise how could we defend ourselves from the bad. I think this is what our parents try to say constantly when we are young, but, as I said before, those learnings require live experience. Friends and family, are there to support us during the fall, and its a cycle, since everyone falls someday. In the middle we are given a chance to choose who we want to support us, focusing on work obsessively, treating people like they were automatons and with no respect, will lead into a empty house with no one to support us.

Making clear settlements with other people, is also another conclusion I take from this ~~portfolio~~ activity. People forget very easily and you need to remind them often about those settlements. Not making them at all is a decision you make, even if you do not realize.

If I could do it again, I would do it, but with more caution. In the end I achieved my goals anyway, which were, use my free time to acquire useful knowledge to my future. And from that point-of-view it was an amazing travel full of useful learnings.