Técnico+ Course Planning and Management

Report

Business Process Management

Alameda

Group 7

Carolina Luís Ribeiro Brás	94227
Ielga Katiana Anacleto de Oliveira	92479
Catarina Beirolas Vilhena	93034
Rui Mira Gomes Gama da Costa	102118

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Técnico+ Course Planning and Management Landscape

Proposal Phase	Marketing Phase	Sell Phase	Application Phase	Plan course logistics Phase	Deliver Classes Phase	Closure Logistics Phase

1. The as-is process models

Given that the as-is BPMN diagrams we created for each one of the Técnico+ Course Planning and Management phases are large and don't fit properly in a Word page, we stored them in a folder named "as-is", in both BPMN file format and PDF format, according to the project's requirements.

2. The as-is process model analysis

Issue Register

Name	Explanation	Assumptions	Qualitative Impact	Quantitative Impact
Issue 1 - 20% of the courses got insufficient candidates	There was no market interest.	As described in detail in Issue 4, although companies have interest that their employees learn from Academia, Técnico+ Courses are not fully aligned with the companies' needs.	Courses takes place without as many trainees as possible.	
	People did not know about the course.	For instance, if we consider one the courses being advertised by Técnico+ at the moment, "BLOCKCHAIN & SMARTCONTRACTS", set to start on 23rd March and end on 7th April 2022, we can make the following assumption: There are 100 people interested in taking this course. The course costs 1550€/person. 20% of the people interested weren't informed about the course's existence, at all.	People who would have been interest in taking the course, didn't, contributing to the lack of fulfilment of companies' needs.	Amount if out of the 100 interested people, all of them applied = 1550 x 100 = 155000€ Amount, taking into account only 80% of people knew about the course = 1550 x (100 x 0,80) = 124000€ 155000 – 124000 = 31000€ Técnico+ could have gained, but didn't
	People knew about the course but forgot the deadlines to apply.	Same course scenario as before: There are 100 people interested in taking this course. The course costs 1550€/person. 35% of the people interest forgot to apply on time.		Amount, if out of the 100 interested people, all of them applied = 1550 x 100 = 155000€ Amount, taking into account only 65% of people applied on time = 1550 x (100 x 0,65) = 100 750€

				155000 – 100 750= 54 250€ Técnico+ could have gained, but didn't
	Financial support was needed.	Same course scenario as before: There are 100 people interested in taking this course. The course costs 1550€/person. 5% who are interested in taking the course, need financial help to do it. If we consider, the financial help was 40% off the course price, the course would be 930€/people.		Amount, taking into account only 95% of people pay full price and 5% of people have financial help = 95 x 1550 + 5 x 930 = 147 250 + 4650 = 151 900 Even conceding financial help, Técnico+ would have benefited if these candidates applied.
Issue 2 - Public Companies failed the deadlines for applying employees	Existence of specific public procurement procedures which take additional time and require that Técnico+ issues proposals or submit proposals through public procurement platforms.		The companies have interest in Técnico+ courses but forget about the deadline because of internal procedures, so their employees can't take the course.	
Issue 3 - Testimonies are not relevant enough	It's hard to get quality testimonials.		For courses to have new trainees, testimonials are important. With no testimonials to show, future	

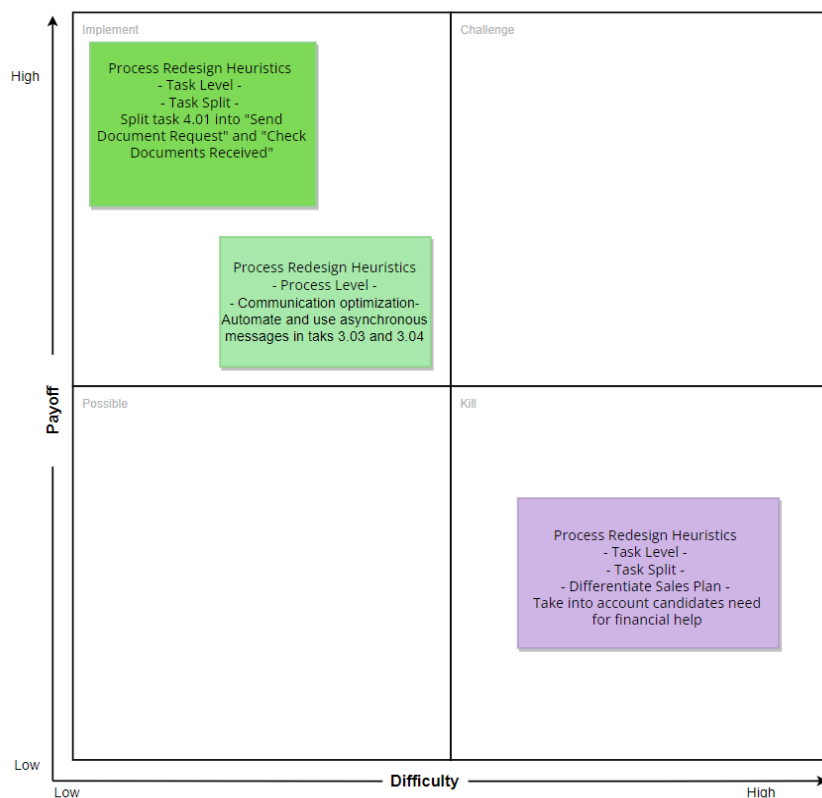|				
			trainees will not be interested.	
Issue 4 - Companies needs not fully aligned with Técnico+ Courses	Companies can't propose courses to Técnico+, only Técnico Professors can.		Although companies have interest that their employees learn from Academia, Técnico+ Courses are not fully aligned with the companies and companies needs are not fully satisfied.	

Implement

Process Redesign Heuristics
- Task Level -
- Task Split -
Split task 4.01 into "Send Document Request" and "Check Documents Received"

Process Redesign Heuristics
- Process Level -
- Communication optimization-
Automate and use asynchronous messages in taks 3.03 and 3.04

Challenge

Possible

Kill

Process Redesign Heuristics
- Task Level -
- Task Split -
- Differentiate Sales Plan -
Take into account candidates need for financial help

High / Low — Payoff

Low / High — Difficulty

Figure 1 - Issue 1 PICK chart.

Why? Why? Why? Why?

20%
of the courses got insufficient candidates

There was no market interest. → Companies' needs are not fulfilled. → Employees do not fulfill the companies' needs. → Companies' needs are not aligned with Tecnico+ course offering.

People knew about the course but forgot the deadlines to apply. → People were not reminded of the deadlines. → Tecnico+ didn't send a reminder. → Tecnico+ doesn't have an easy way to send reminders.

People did not know about the course. → People weren't contacted during the course selling phase. → Tecnico+ didn't have this people neither on the companies list, nor on the alumni list. → Tecnico+ database isn't up-to-date.
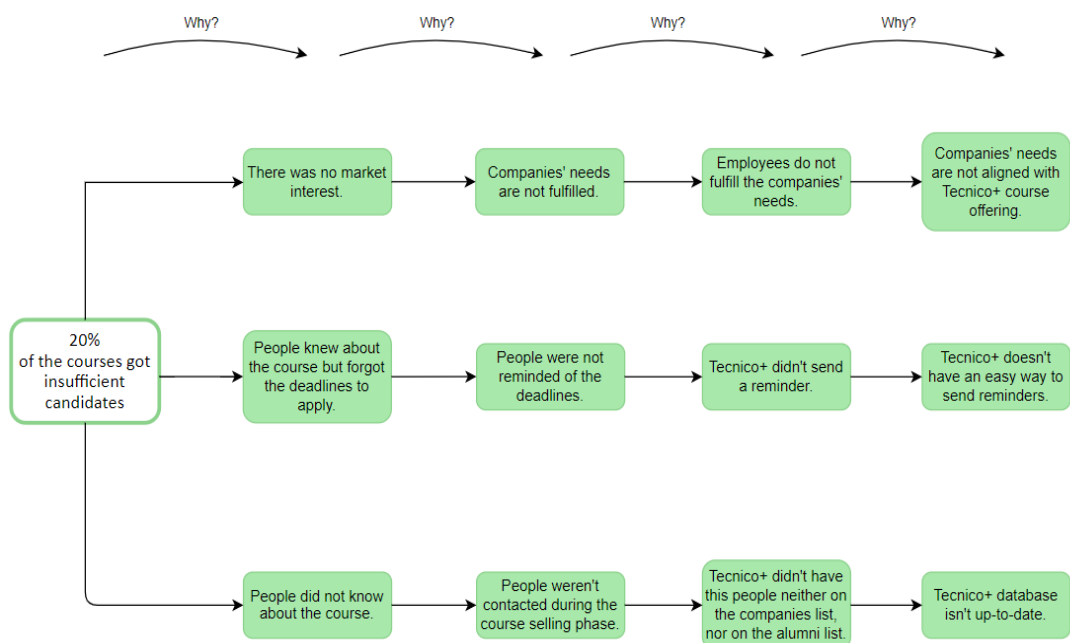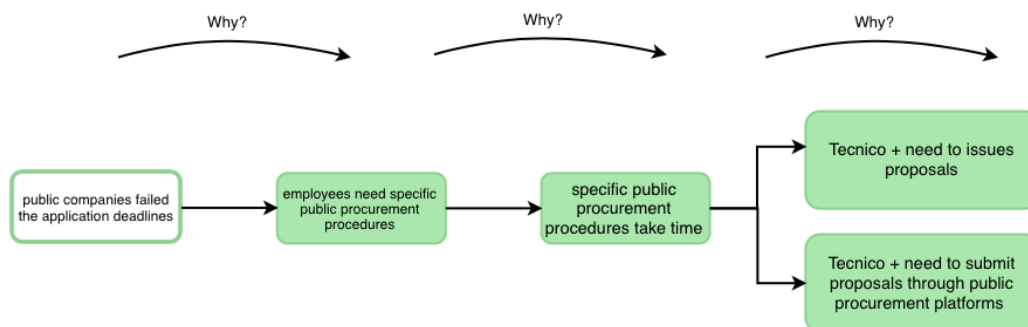
Figure 2 - Issue 1 Why-Why Diagram.

Figure 3 – Issue 2 Why-Why Diagram
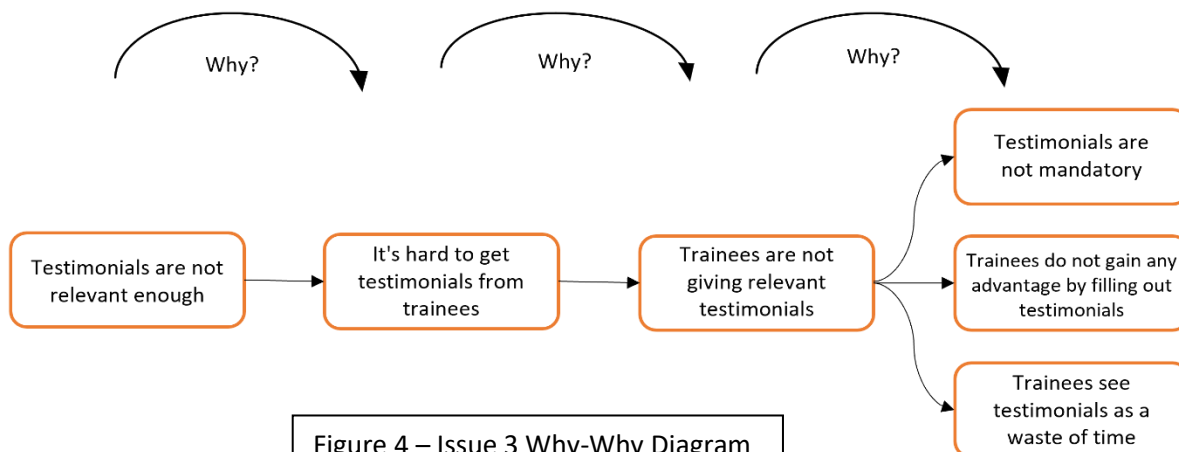
Figure 4 – Issue 3 Why-Why Diagram
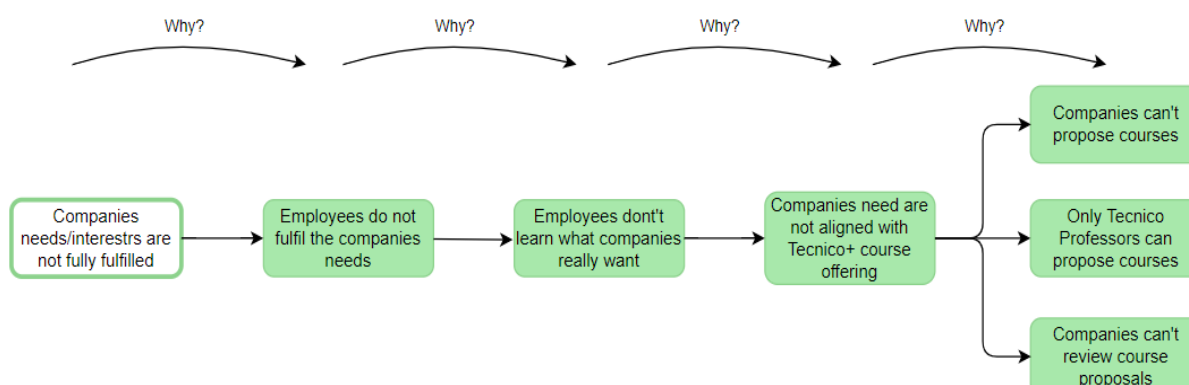
Figure 5 – Issue 4 Why-Why Diagram

Flow-analysis

		Proposal Phase			
Task Id	**Duration (Hours)**	**Task**	**Cycle Time**	**Theoretical Cycle Time**	**Cycle Time Efficiency**
1.01	8	Create project		8	
1.02	16	Course proposal		16	
1.03	8	Course budget		8	
1.04	8	Consolidate course proposal (proposal and budget)		8	
1.05	4	Validation of course proposal (proposal and budget)		4	
1.06	1/2	Inform approval of course proposal		-	
1.07	1/2	Inform rejection of course proposal	8 weeks	-	
1.08	1/6	Create shared folder		1/6	(60,2/1344) x 100 = 4,5%
1.09	4	Review biographies for coordinator and teachers		4	
1.10	40	Get teachers photos		-	
1.11	8	Get testimonies		-	
1.12	4	Set course schedule		4	
1.13	4	Write/Review course description		4	
1.14	4	Add commercial language to course description		4	
			Total CT: 8 x 7 x 24 = 1344 hours	**Total TCT:** 8 + 16 + 8 + 8 + 4 + 1/6 + 4 + 4 + 4 + 4 = 60,2 hours	

$$Cycle\ Time\ Efficiency = \frac{Theoretical\ Cycle\ Time}{Cycle\ Time}$$

Notation	
Value-adding	
Business Value-Adding	
Non-value-adding	

		Marketing Phase			
Task Id	Duration (Hours)	Task	Cycle Time	Theoretical Cycle Time	Cycle Time Efficiency
2.01	8	Take Photo for brochure and website		8	
2.02	16	Prepare Brochure		16	
2.03	4	Get Brochure approval		4	
2.04	4	Revise the brochure		4	
2.05	8	Write a course description for website		8	
2.06	4	Create a course page in website		4	
2.07	4	Publish news item in website		4	
2.08	2	Inform course availability in website		-	
2.09	4	Publish news in social networks		4	
2.10	16	Publish course news in Técnico platform's (Técnico Website and social media)	5 weeks	16	(114/840) x 100 = 13.57 %
2.11	16	Advertise course to associations		16	
2.12	8	Digital Advertisement		8	
2.13	16	Get dissemination content		-	
2.14	16	Organize a lecture to present the course		16	
2.15	4	Share through personal networks		-	
2.16	2	Advertise to Tecnico and Tecnico+ Alumni		2	
2.17	2	Advertise in TVs across Tecnico campi		2	
2.18	2	Advertise through email		2	
			Total CT: 5 x 7 x 24 = 840 hours	**Total TCT:** 114 hours	

		Sell Phase			
Task Id	Duration (Hours)	Task	Cycle Time	Theoretical Cycle Time	Cycle Time Efficiency
3.01	3	Identify relevant companies		3	
3.02	8	Prepare sales plan	2 weeks	8	(35/336) x 100 = 10,4%
3.03	16	Contact companies		16	
3.04	8	Contact course alumni		8	
			Total CT: 2 x 7 x 24 = 336 hours	**Total TCT:** 3 + 8 + 16 + 8 = 35 hours	

		Application Phase			
Task Id	Duration (Hours)	Task	Cycle Time	Theoretical Cycle Time	Cycle Time Efficiency
4.01	8	Request documents from candidates		-	
4.02	4	Create candidates list		4	
4.03	1/3	Send candidate list to coordinator		-	
4.04	38	Analyse candidates		38	
4.05	2	Verify pre-requisites		2	
4.06	2	Notify Rejected Candidates		-	
4.07	1	Inform accepted candidates		-	
4.08	4	Request Registration Data	9 weeks	-	(68/1512) x 100 = 4,5%
4.09	4	Create List of Trainees, with #Técnico+		4	
4.10	2	Request invoices			
4.11	4	Send invoice by e-mail		-	
4.12	8	Send invoice by mail		-	
4.13	20	Confirm payments		20	
4.14	1	Send Welcome notice		-	
4.15	4	Send receipt by e-mail		-	
4.16	8	Send receipt by mail			
			Total CT: 9 x 7 x 24 = 1512 hours	**Total TCT:** 4 + 38 + 2 + 4 + 20 = 68 hours	

Plan Course Logistics Phase					
Task Id	Duration (Hours)	Task	Cycle Time	Theoretical Cycle Time	Cycle Time Efficiency
5.01	2	Set course room		2	
5.02	4	Create Course Regulations/Rules		4	
5.03	2	Create course in Moodle Platform		2	
5.04	4	Create Course/Modules Surveys in Moodle Platform		4	
5.05	2	Add teachers to Moodle Platform		2	
5.06	1	Send Moodle account confirmation email to teachers		-	
5.07	8	Add students to Moodle platform		8	
5.08	2	Reserve course room		2	
5.09	8	Prepare Welcome Set		8	
5.10	16	Schedule breaks and meals		16	
5.11	8	Hire Catering		8	
5.12	16	Get Access to Parking for Trainees		-	
5.13	8	Get access to parking for teachers	6 weeks	-	(90/1008) x 100 = 8.93 %
5.14	8	Get Wifi access and credentials for trainees and teachers		-	
5.15	4	Schedule first class photo		4	
5.16	24	Schedule class interview		24	
5.17	4	Prepare room signage		4	
5.18	2	Schedule course kick-off meeting		2	
5.19	16	Get "Teaching Statement" from teachers + financial information for payments		-	
5.20	8	Upload course materials to Moodle		8	
5.21	2	Test Moodle course page		2	
5.22	2	Create Summary Lists		2	
5.23	2	Create Attendance Lists		2	
5.24	2	Create blank course dashboard and send to Coordinator		2	
5.25	4	Course kick-off meeting		4	
			Total CT: **6** x 7 x 24 = 1008 hours	**Total TCT:** 90 hours	

Deliver Classes Phase					
Task Id	Duration (Hours)	Task	Cycle Time	Theoretical Cycle Time	Cycle Time Efficiency
6.01	4	Organize and prepare room for 1st Class	3 weeks	4	(12/504) x 100 = 2,4%
6.02	1/2	Deliver Welcome Kit in class		1/2	
6.03	2	Prepare trainees' reception		2	
6.04	1	Check first class		1	
6.05	1/2	Present course overview in first class		1/2	
6.06	1	Check classes		1	
6.07	1/2	Post on course/module forum to fill out course survey and trainer(s)		1/2	
6.08	1/2	Coordinate with the teacher filling out the Trainee Survey		-	
6.09	2	Prepare last class set		2	
6.10	1/2	Distribute Last Class Set + Certificates of course conclusion		1/2	
			Total CT: 3 x 7 x 24 = 504 hours	**Total TCT:** 4 + ½ + 2 + 1 + ½ + 1 + ½ + 2 + ½ = 12 hours	

Assumptions:

We are considering Técnico+ coursed are, on average, 3 weeks long.

		Closure Logistics Phase			
Task Id	Duration (Hours)	Task	Cycle Time	Theoretical Cycle Time	Cycle Time Efficiency
7.01	40	Ask for and get testimonials		-	
7.02	1	Share end-of-course in communication channels		1	
7.03	24	Make financial statement		24	
7.04	8	Make list of payments to teachers		8	
7.05	1	Send 2nd Message in the course/module Forum to fill in the course and teacher(s) survey		-	
7.06	16	Create Pedagogical File		16	
7.07	24	Finalise course dashboard and collect assessment	4 weeks	24	
7.08	4	Surveys - Extract answers (deadline of answers ended)		4	
7.09	8	Surveys - Prepare a Report and send it to Coordinators		8	(171/672) x 100 = 25,4%
7.10	2	Surveys - Select testimonies		2	
7.11	24	Prepare Diplomas and Certificates		24	
7.12	4	Send Diplomas and Certificates		-	
7.13	8	Analyse Survey Report		8	
7.14	1	Send thank you note to the course team		-	
7.15	1	Surveys - Send Report to teachers (PDF)		-	
7.16	4	Course closing meeting		4	
7.17	16	Write course closing meeting minutes + approval		16	
7.18	24	Create financial file		24	
7.19	8	Close course		8	
			Total CT: 4 x 7 x 24 = 672 hours	**Total TCT:** 1 + 24 + 8 + 16 + 24 + 4 + 8 + 2 + 24 + 8 + 4 + 16 + 24 + 8 = 171 hours	

3. The Process Redesign

Issue 1

Proposed changes:

1. Separate task 3.02 into two different tasks: "Prepare sales plan regular" and "Prepare sales plan with financial help", to take into account candidates who end up not applying to a course because of financial difficulties;
2. Separate task 4.01 into two different tasks "Request Documents from Candidates" and "Check Documents Received", so candidates who haven't sent the requested documents yet are notified 10 days before deadline. If they haven't sent the documents on the deadline day, they receive a message informing they were, unfortunately, unable to be accepted as trainees;
3. By considering Técnico+ Marketing Department acquires an automatic way to send and receive formatted requests and responses, the companies and alumni to be contacted on tasks 3.03 and 3.04 receive automatic and asynchronous notifications about the courses being sold.

Expected benefits of the proposed changes:

1. By having a separate sales plan for candidates with financial difficulties, there is a possibility to decrease the percentage (5%) of candidates saying they didn't apply because of financial difficulties. If the proposed course plan was interesting enough, the Técnico+ could have a program to try and find sponsors for candidates in this situation;
2. By being reminded 10 days before the deadline of the documents they have to send to apply for a course, candidates will have less chances of forgetting to do so and the percentage of people who didn't apply because of this (35%) will probably decrease. The Técnico+ will have a greater revenue with little effort;
3. By contacting the companies and alumni in an asynchronous way, by e-mail or by *SMS*, for instance, there will be a greater chance the information about new courses reaches this people and the percentage (20%) who didn't apply because they didn't know about the courses will most likely decrease.

Alternative changes:

1. We considered suggesting a greater presence of the Marketing Department on the Técnico+ social media, however, we concluded a **directed**, **asynchronous**, **automatic** notification, such as an e-mail or *SMS*, was a better way to approach the problem, as it is possible to, not only personalize the text of the request, but also to better deal with possible questions the companies and alumni may have. This doesn't exclude the possibility of, for instance, sharing frequent questions on Técnico+ social media.

Issue 2

Proposed changes:

1. One of the biggest problems is that public companies fail the deadlines to apply employees because some of the employees need a specific procedure that take time. In this case we can create a statute for these kinds of situations.

Expected benefits of the proposed changes:

1. The status will consist in giving more additional time, for instance, 1 month to the candidate complete the application. They can't start the course yet, but the course will be valid when they finish the application.

Alternative changes:

- Another approach would be to send the proposals to public companies at some time in advance. One of the advantages is that we gave more time before the application's open to these employees, so they can prepare all type of documents and when the application's open they can apply and not exceed the deadline;
- Another solution is that Técnico+ can establish as possible some kind of healthy relationship between this type of employees that can facilitate the application procedure and, in this case, Técnico + wouldn't have to issue proposals or submit proposals through public procurement platforms not covered by the current process.

Issue 3

Proposed changes:

Problem 3 refers to the lack of relevant testimonials from trainees. These testimonials are essential for the admission of new trainees and that is why we must correct this problem.

The possible causes for this problem are that the testimonials are not mandatory to fill out, there is no advantage for trainees to fill in the testimonials and it could be a waste of time for the trainees.

1. To solve this problem, we agreed that the best solution would be to follow the executive director's thinking and give some kind of reward to the relevant testimonies. For this we had to add a task in the Closure Logistics phase. When the course logistics has to chooses the relevant testimonials, it must inform the respective trainee that his/her testimonial has been chosen and selected as relevant and therefore he will have credits offered to spend on other courses on the platform.

Expected benefits of the proposed changes:

1. By solving this problem, we are able to attract new trainees to the platform's courses and, at the same time, encourage current trainees to join other courses.

Alternative changes:

- Another solution would be to make testimonials mandatory, but we all agree that the testimonials should continue to not be mandatory as if they were it could discourage their filling in a relevant way and worsen the experience of current trainees.

Issue 4

Proposed changes:

This issue is caused by the fact that only Técnico Professors can propose courses and companies can't. To solve this issue, we propose two solutions.

1. The first solution is to allow companies to propose courses to Técnico +, or contact Técnico + saying that they would like a course in some specific area. After this proposal, the course would be evaluated or created by one Técnico Professor that would be the coordinator of the course. From here the process is exactly as the "as is" process starting on the course proposal task;
2. The second solution would be for companies or Técnico+ partners to also review the course proposal and that the course approval should also dependent on the review given by partners. This review is done after the course proposal creation task and has to be received by Técnico+ before the consolidation of the course proposal task. These two tasks are done in different, but consecutive, weeks so we assume that companies and Técnico+ partners have one week to review and send the feedback, after exactly one week the process proceeds for the consolidation task.

Expected benefits of the proposed changes:

1. With the changes presented above we expect that the companies' needs are now more satisfied and aligned with the Técnico+ course offering and that their employees learn what companies find useful for their business. Because companies can now review a course proposal, we also expect that the course approval rates would decrease from 95% to 85%.

Alternative changes:

- Another possible solution would be to get alumni testimonies from previous courses, being it similar courses or a previous edition of the same course and use them to improve the course proposal or for the next course editions. This idea was discarded because we considered that companies know better what their real needs are that the value added from this additional step would be significant less than the changes proposed am implemented in the "to be" model.

The to-be process models

Just like in the as-is BPMN diagrams, the to-be BPMN diagrams were too big, so we created a folder named "to-be", where we stored the diagrams in both BPMN file format and PDF format, according to the project's requirements.