A PACCAR COMPANY

PROJECT PLAN

DEVELOPER PORTAL

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Version

Version	Date	Author	Description
1.1	21/02/2024	Denitsa Goranova	Started document
1.2	26/02/2024	Denitsa Goranova	Updated based on stakeholder and university tutor feedbacks

Contents

Project Assignment

Context

Leading truck manufacturer DAF is going through an evolution and will relaunch its connected services in April 2024. This will be done with a rebranding towards PACCAR Connect. PACCAR is an American company which is primarily focused on the design and manufacturing of heavy- duty trucks. Within the Global linked Services group, the company is dedicated to offering its clients cutting-edge solutions in the quickly developing realm of linked automobiles. Data services are part of the offered features. PACCAR Connect is designed to simplify and to help their customers. They want to get the most out of their DAF trucks and drivers and to optimize their operations. They as an integrator collect the truck data and transform into data services, valuable insights and over the air updates.

Goal of the project

Current situation is PACCAR is a new organization which is looking for success and they are seeking for a competitive advantage. Not having connectivity is a disadvantage that PACCAR would like to remove and also would like for customers to see inside what is happening. They need to find a solution with which they are going to be open for integration.
The internship project aims to offer a more effective and efficient cutting-edge solution for clients with which they are going to get in touch with their own services in the easiest way possible. What we would like to achieve with this project is DAF selling more services in the future, clients being able to integrate with PACCAR CONNECT and their systems, clients understanding what DAF offers and mostly to create innovation. We are going to create a toolkit with which customers will be able to get the idea of how our services are working. This will give us a competitive advantage in the market and can increase the trust to customers. At the end of the internship, the company will be will be able to give clients and 3rd parties the opportunity to experiment with our services by offering a portal for connected services.

The assignment

The assignment is a centralized online resource that is going to provide tools, documentation and support. It is going to serve as a singular location for clients and software developers to access information about our offerings an understand how to optimally integrate them into applications. The starting point will be to research and using the results to come up with ideas which are going to be used for the developer portal. We have 13 different data elements, 10 data triggers for location and mileage data package. The 3rd parties can create 25 different use cases for those data elements. We will create example use cases in different programming language to help them out. The minimum requirements that at the end we need to have are: the click rate of that developer portal. The developer portal should include API documentation, API examples, visual results as well as technical explanations.

Functional requirements	Non- functional requirements
As a user, I would like to have information on the APIs	The time between a request to any rFMS endpoint and a response from the interface must not take longer than 10000 ms in case of a negative response.
As a user, I would like to be able to find sample code in one central location	The time between an rFMS API data request and a response from the interface must not take longer than 1500 ms in case of a positive response.
As a user, I would like to test sample codes in a sandbox environment	The time between an rFMS API request for a user authentication and a response from the interface must not take longer than 2000 ms in case of a positive response.
As a user, I would like to find all technical documentation in one central location.	
As a user, I would like to have authentication	
As a user, I would like to have the APIs in different languages	

Scope

The project includes:	The project does not include:
User- friendly interface that provides a seamless experience	Real integration with real data
Implementation of Webpage with functionalities	Backup and Disaster Recovery
Test report	
Instructions on how to use	
Deployment	
Unit testing	
Acceptance testing	

We want to achieve high satisfaction of parties who want to integrate our data. They should be guided through the process of making full use of our data services. This, we will do by giving clear guidelines, explanations and instructions on how to use our services in the best way possible. In the project we want to understand what is requested by these type of parties and what we need to deliver to make them happy. Since a happy data integrator, could give us a competitive advantage or at least a good image within the market.

Conditions

Clear deadline was set which is from the 19.02.2024 until 21.06.2024. For developer portal we will use the current website tool rather than creating a new one and we will embed it in a new page. Based on client needs we will develop the portal in JavaScript and Java. Preconditions are of course the data services that we offer ourselves. We can only create services or onboarding for services that we offer. For programming languages we are going to start with Java for the backend together with SpringBoot, and for the implementation of the APIs use cases we are going to have various languages based on the client needs and API versions. For API documentation we are going to use Swagger, an open source specification that allows us to describe each element of the API so that the system can interact with it.

Finished products

Firstly there was a small prototype via Miro, design tool, created, which was for developer portal website. It is already approved by customers and third parties. Now next will be a demonstration page for field validation. For the coding part, we will

start with small prototypes with Java and JavaScript and when we finalize that prototype, we will embed the coding to that demonstration page. As an end product we would like to deliver an effective library, based on the client needs, which is going to help 3rd party to integrate. It is going to serve as a well-documented library that will provide customers with an easy integrated linked service page. The final product should be a developer portal which enables third party developers to create an integration with our APIs in an easy way. It is going to serve as sandbox for third parties, they are going to be able to interact with the company APIs and collaborate. There is going to be a documentation provided, real examples, error explanations and if there are any limitations with the APIs there are going to be explained. For the 3rd parties there is going to be also an authentication since a secure user sign- in is necessary. The APIs that are going to be present in the portal are going to be based on the client needs and also the APIs will be implemented in various programming languages.

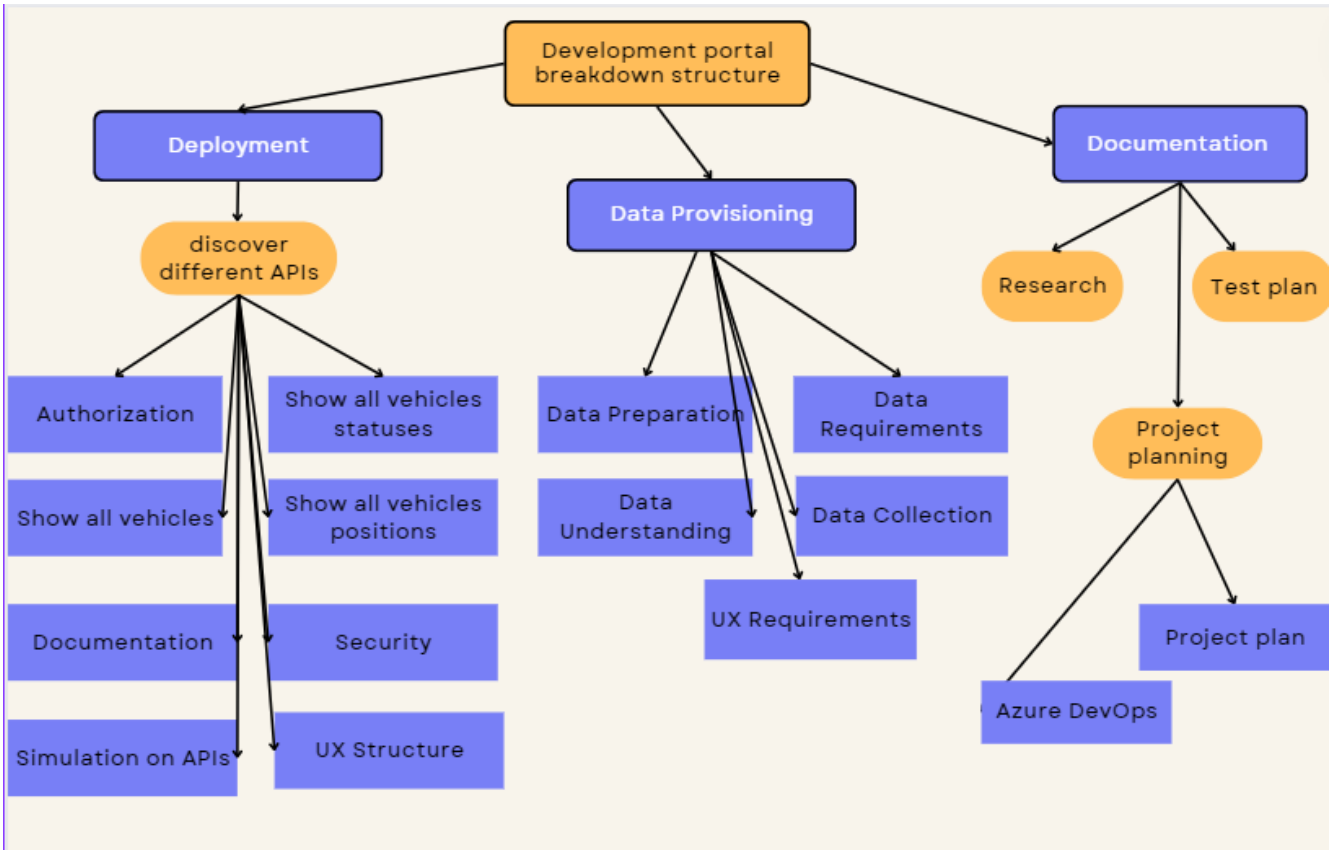

Figure 1- Product breakdown

Research questions

Customers and 3rd parties of DAF PACCAR Connect were informed of the idea about an API Development Portal and they are interested in it and are looking forward to see the process and the final result. It is clear that the development portal will be a good idea but there are a lot of questions that we need to firstly answer before starting the process.

Main question:

How can an API Portal meet the needs and preferences of developers, consumers and 3rd parties?

Sub- questions:

What specific features should an API Portal have in order to be helpful for a target group?
What can we do for the 3rd parties onboard to use our data services?
How can we improve effectiveness in the company with an API Portal?
How will the library be deployed?

Approach and Planning

Approach

During this project, the strategy will be an Agile approach and more specifically Scrum. We have chosen this team collaboration framework since it allows us to adapt throughout the project and to response quickly to new requirements and changes. It focuses on delivering small pieces of the requirements and in that way we are giving the best quality because of improvements. By using SCRUM clients can see what your progress is. He default approach of the company is Agile so we decided that it would be the best fit. The sprints in the company are 2 weeks in which there is a continuous improvement. I will be having weekly meetings with my internship mentor and my university tutor so we can re view my progress.

Research methods

Sub question	Research method

What specific features should an API Portal have in order to be helpful for a target group?	**Problem analysis**
What can we do for the 3rd parties onboard to use our data services?	**Expert interview, Observation**
How can we improve effectiveness in the company with an API Portal?	**Expert interview, Explore user requirements**
How will the library be deployed?	**Community research**

Question 1: I decide that I am going to use the problem analysis since this question needs the answers of why and how and more. I need to understand more about the current situation and how is this going to be helpful, in what way is it going to improve the process in the company and by answering to those questions I will become more comprehended.

Question 2: For the second question, I decided that I am going to use an expert interview and an observation method. The reason behind this decision is the fact that a person who is in touch with 3rd parties knows their wishes and observations. I will be conducting an interview so I can increase my knowledge on the preferences of the clients. And for observation I believe it is suitable in this case since I am going to be able to observe their interactions and environments.

Question 3: I will be using once again the expert interview for this question since I believe that hearing a more experienced point of view is going to be a huge help for answering the question. By having the explore user requirements method I will even broaden the knowledge of what people are expecting from the final product.

Question 4: For the last question I will use the Lab research and a Literature study. I will get to understand what are the strengths and limits of the different platforms by using the Literature study and having the Lab research is going to be used at the end so to see what improvements can be done.

Learning outcomes

1. **Professional duties**

During my internship I will be proactively be involved with the professional duties on a junior bachelor level which is going to lead me to delivering professional products which are in line with the IT area. This consists of the following subset of activities: Analyze, design, realize, advise, manage and control. Having those aspects, I will in accordance with the proficiency levels in the HBO- I framework and the levels in OE3 and OE4.
During my internship I will be understanding the extend and borders of the professional duties since I do not find the internship as some assignment from university but as a start of my professional development.

2. Situation- orientation

The following months I will have the capability to apply my knowledge and to show in real-life cases what I have learned for the past years by showing creative solutions to problems. For my internship I will apply my skills in an authentic context so results are being delivered. Having stakeholders who will be helping me during the internship and are embedded in IT, allows me to work in a structured and methodological way, which is the adapted way of work in the company. The work I am going to deliver at the end and during the process is relevant to the people in the company.

3. Future- Oriented Organization

I am eager to explore the organizational context of my project while making business, sustainable and ethical considerations and managing all aspects of the execution of my project. I will be using methods like TICT framework so legitimacy, sustainable development and business consideration is ensured. I have aligned my insights with PACCAR and by writing and following a project plan I will be monitoring my activities and the whole process.

4. Investigative Problem Solving

During the work process I will be using different approaches and strategies so I am sure that I meet the requirements of the client. In the beginning of the internship I have identified the first research questions that I thought of. If during the project there are challenges that I did not think of and how to solve them I will use the ICT search methods so I am aware of the best possible solution. After answering to my research questions and getting valuable insights I will be using them to create a valuable solution and validate them with my stakeholders.

5. **Personal Leadership**

Besides the fact that this is my first internship I will be monitoring my progress by following a strict plan. I have created 9 sprints with which I will take he lead in the project and I can reflect on my work while asking for professional feedback and guidance.

6. **Targeted Interaction**

In order to be aware of how I am progressing in achieving the final result I will be having daily meetings with my stakeholders so I can keep them posted with the activities. I will also be having weekly meetings with my university tutor so I will be paying attention to both my internship mentors and the university ones. Having frequent meetings will help me make sure that I have the right impact on communication and execution.

Breakdown of the project

Sprint 1 – Research

- **Start investigating the problem and thinking of the best solutions**
- **Creating a project plan and a possible structure for the solution**
- **Meeting with stakeholders**
- **Sprint Retrospective**

Sprint 2 - Start of project research

- **Start structuring possible solutions and exploring formats**
- **Meeting with stakeholder**
- **Getting data and exploring on it**

- **Data Provisioning**
- **Sprint Retrospective**

Sprint 3 – API Documentation and foundation

- **University tutor checkup meeting at company office**
- **Begin laying the foundation for API documentation**
- **Setup the development environment**
- **Initialize back end framework (Spring Boot)**
- **Establish simple database**
- **Sprint Retrospective**
- **Meeting with stakeholder**

Sprint 4 - Examples and data elements development

- **Build out the whole API documentation for the 13 data elements and associated triggers**
- **Start creating example use cases for the different packages in one programming language**
- **Integrate with Swagger for an interactive API explorer**
- **Testing**
- **Meeting with stakeholder**
- **Sprint Retrospective**

Sprint 5 - Visual results

- **Visual representation of some of the APIs**
- **Monitoring**
- **Testing**
- **Retrospective**
- **Improvements**
- **Meeting with stakeholder**
- **Sprint Retrospective**

Sprint 6 – Implementation

- **APIs use cases implementation in different languages**
- **Meeting with stakeholder**
- **Retrospective**
- **Testing**

Sprint 7 – Configuration

- **Small part tested by 3rd party user**
- **Improvements based on feedback**

- **Performance improvements**
- **Testing**
- **Meeting with stakeholder**
- **Sprint Retrospective**

Sprint 8 – Delivery

- **Retrospective**
- **Meeting with stakeholder**
- **Further Testing**

Sprint 9- Meeting with stakeholders for final delivery

- **Final presentation of the entire project**
- **Retrospective**
- **Meeting with university tutor**

Order	ID	Title	Assigned To	State
1	49	Start project structure	Denitsa Gorano...	To Do
2	48	Start design document	Denitsa Gorano...	To Do
3	9	- Sprint Retrospective	Denitsa Gorano...	To Do
4	8	- Data Provisioning	Denitsa Gorano...	To Do
5	7	- Getting data and exploring on it	Denitsa Gorano...	To Do
6	6	- Meeting with stakeholders	Denitsa Gorano...	To Do
7	5	Start structuring possible solutions and exploring formats	Denitsa Gorano...	Doing

Figure 2- Example of Sprint

I am using Azure DevOps to track my progress of the sprints.

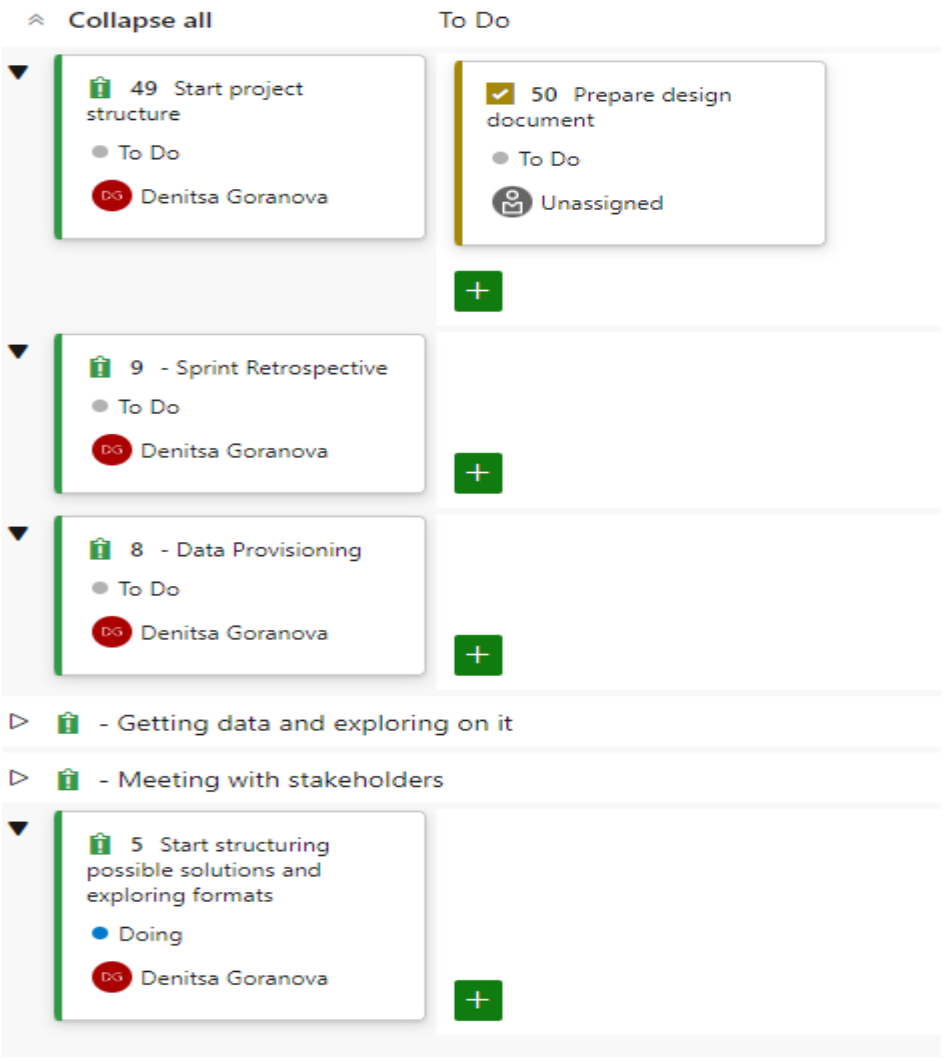

Figure 3- Example of Sprint 2 with subtasks

Time plan

I decided that I am going to track my progress with SCRUM sprints. With following my progress with SCRUM I will also be documenting my progress in a portfolio. I decided that I am going to have 2 weeks sprints as they are doing in the company so I can easily divide my work load and to be able to improve it and in the same time to properly document it. With every new sprint I will add new tasks based on the original ones so it is more detailed.

Phasing	Effort	Start	End
Sprint 1 – Research	Low	19/02/2024	1/03/2024

Sprint 2 - Start of project research	Medium	4/03/2024	15/03/2024
Sprint 3 - API Documentation and foundation	High	18/03/2024	29/03/2024
Sprint 4 - Examples and data elements development	High	1/04/2024	12/04/2024
Sprint 5 - Visual results	High	15/04/2024	26/04/2024
Sprint 6 – Implementation	High	29/04/2024	10/05/2024
Sprint 7 – Configuration	Medium	13/05/2024	24/05/2024
Sprint 8 – Delivery	Medium	27/05/2024	07/06/2024
Sprint 9- Meeting with stakeholders	Medium	10/05/2024	21/06/2024

for final delivery			

Project organization

Team members

Name+ Phone+ e-mail	Abbr.	Role/tasks	Availability
Denitsa Goranova **d.goranova@student.fontys.nl** **denitsa.goranova@daftrucks.com**	**Intern**	**Creating a library for third parties**	**5 days a week**
Luuk Tuijtelaars **+31682484343** **Luuk.Tuijtelaars@DAFTRUCKS.com**	**Stakeholder**	**Director of Marketing and Sales, approver of project deliverables**	**5 days a week**
Esra Esmer Ozcan **+31639339595** **esra.esmer.ozcan@ DAFTRUCKS.com**	**Stakeholder**	**Customer Experience Manager, guide and control UX parts**	**5 days a week**
Barton Meijer **+3162235508** **Barton.Meijer@DAFTRUCKS.com**	**Mentor**	**Owner of Data Services, control project development and guide the process**	**5 days a week**
Suleyman Ocel **+31620885292** **suleyman.ocel@daftrucks.com**	**Stakeholder**	**ITD Architect** **IT Integration** IT Architect **Who is going to provide me with**	**5 days a week**

		Software support	
Tülin Ercelebi Ayyildiz +31616105409 t.ercelebiayyildiz@fontys.nl	**Teacher**	**Internship tutor who is going to be providing me with guidance and grading my performance**	**1 day a week**

Communication

Communication with my mentor will be via weekly meetings which are going to take place at the office. Barton will be responsible for my progress and development process and is going to guide me with valuable insights.
I will be communicating weekly at the office with the stakeholders so we can discuss the approaches and the work.
With the university teacher I will be having a weekly meeting every Friday so we can track my progress.

Test environment

First we will make an example coding which we are going to test.
For testing, we decided that we are going to use Azure DevOps. DevOps supports the following test objectives: automated testing, traceability, reporting and analysis, manual and exploratory testing : user acceptance testing, exploratory testing, stakeholder feedback, planned testing. We are going to achieve around 85-90% code coverage and we are going to finish with a test report at the end. We are going to review the quality of the result with tests. We decided that we are going to make tests bases on expected results and actual results. In the test report we will evaluate the outcomes: major findings, defects, standard acceptance criteria which are based on the user acceptance test, end to end tests, performance tests and functional integration tests. For non UI we will use PyTest and for UI test automation we will use Selenium. For the UX testing we will test the page and the coding part with two different third parties to validate before relaunch. Why we choose this way of

working for the project is the fact that after any code implementation, there is going to be a test made so we are sure that everything is being tested and checked.

Risks

Risk and fall- back activities

Risk	Prevention activities	Fall- back activities
Data loss	Regular testing and monitoring of results	Request new data
Unavailability of company mentor	Regular meetings together with a strictly documented process	Contact another person from the company for guidance
Technical issues	Regular checks	Explore alternatives