

# Software Development Lifecycle

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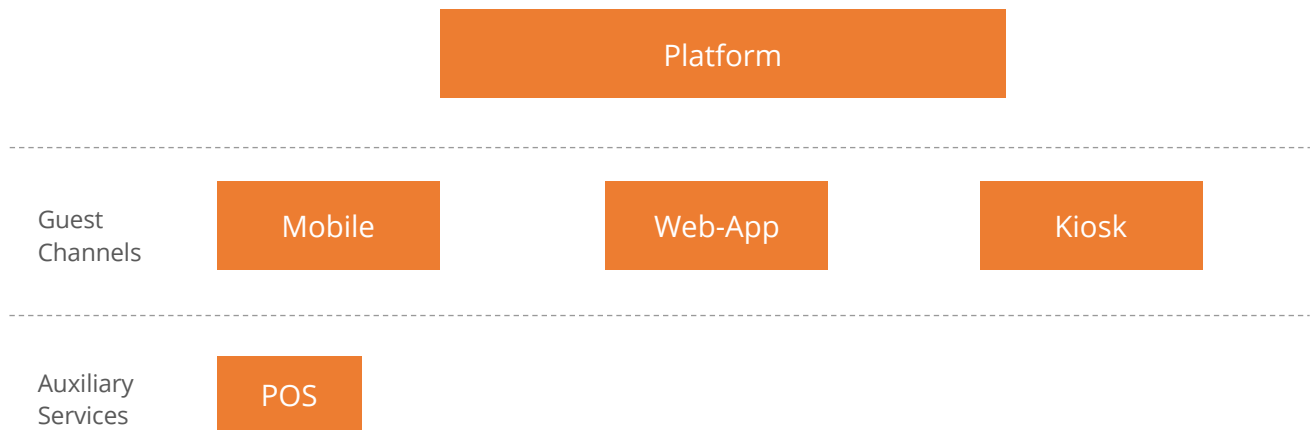
## A. Context

This document aims to provide an overview of the Software Development Lifecycle (SDLC) at MENU, and all the steps from concept of a new product/feature to delivery on production.

## B. Introduction

MENU product teams implement the SCRUM framework to organize and structure development processes.

MENU's product and product organization are split up as follows:



Mobile, Web-App, Kiosk & POS are treated as separate “products”, though tightly intertwined and all powered by the Platform.

All products are assigned a product team and a product owner. A product team generally (exact composition of a product team is dependent on the technical requirements of the product) consists of a product owner, a SCRUM master, designers, user researchers, developers (skills depend on product) and QA engineers.

## C. Roles and Responsibilities

### 1. Product Owners

Product Owners are responsible for accompanying their product and any of its features from concept to delivery. They are responsible for requirements gathering and work with the team on creating a concept and then on implementing it into the product. They act as the single point of contact for any product-related questions from their team and are tasked to provide the right answers, based on feedback provided by other stakeholders (other product owners, product management or customers).

They write clear product requirements/specifications for their team and lead certain SCRUM ceremonies like Backlog grooming and Sprint planning, and play an integral role in others like Sprint review.

Hierarchically, Product Owners of “single” products (like Mobile, Web-App, Kiosk & POS) report to the Platform Product Owner (currently CTO).

Since the products are tightly intertwined and many features are to be implemented into all single products, it is the Platform Product Owner’s responsibility to lead those product initiatives, make sure the Platform fulfills all requirements for the feature to be built on all single products, and provide the other “single product” Product Owners with a framework on how the feature needs to be implemented on all channels, making sure that while the exact implementation may differ slightly in order to make best use of the technical capabilities available on every product, the logic stays consistent.

### 2. SCRUM Master

The SCRUM Master is responsible for implementing and optimizing the SCRUM processes within the product team, in order to make sure that the team can efficiently develop. The SCRUM Master identifies inefficiencies and blockers, and works with the team to remove them. The SCRUM master leads most SCRUM ceremonies like Daily stand-up, Sprint review & Sprint retrospective.

Hierarchically, Scrum Masters report to the Product development organization’s Operations Manager.

### 3. Team Lead

Team Leads are assigned to a “component” (for example Back-end, Mobile, QA) and are responsible for all team members of that component, working within the product teams.

Team Leads themselves don't work within product teams, but instead support & coach their team members and make sure best engineering practices are used and the best use of technology is made.

Team Leads are responsible for the performance of their team members.

Hierarchically, Team Leads report to the Product development organization's Operations Manager.

## D. SDLC

### 1. Initial Concept: Idea Generation, Requirements Gathering

Each product initiative starts here. A product initiative can originate from different places:

- **Product strategy & vision:** A product initiative that complements an existing product or creates a new one, in line with the product strategy and with the goal of achieving the product vision laid out by management.
- **Customer feedback:** Feedback given by customers on existing features or suggestions for new features.
- **Internal feedback:** Internal feedback on new improvement/features/products. This includes, for example, reducing technical debt (refactoring).

The Product Owner gathers initial requirements from stakeholders and may write initial specifications (mostly catered towards designers).

At this stage, it is the Platform Product Owner's responsibility to make sure that the product initiative is in line with the product roadmap / is business-critical. This includes verifying that there are no other initiatives that should be prioritized over the current one.

### 2. Concept Phase: Product Design & Specifications

In this phase the team (primarily designers, with consultation from other team members) is involved in developing the final concept for a product initiative.

This includes the preparation of product designs, including UX & UI documentation, by designers, as well as the writing of product specifications by the Product Owner.

It is the Product Owner's job to identify any dependencies (architecture-wise, towards other implemented features etc.) and make sure they are covered in specification. If any external services are needed to realize the feature, the Product Owner needs to make sure those are prepared for developers.

In this phase it is the Product Owner's responsibility to make sure that the concept fits market needs, as well as any legal/privacy requirements.

During concept phase the Product Owner needs to take care of assessing security & privacy, making sure the concept includes measures to protect the privacy of customer's data used to make the feature possible ("Privacy by Design").

Depending on the privacy implications of the new development, the Product Owner conducts a Data Protection Impact Assessment (DPIA).

The Product Owner can invite team members to Backlog grooming sessions, in order to get early feedback on the concept, making sure that most questions/concerns can be addressed before the concept goes to implementation.

At the end of this phase, all designs & specifications should be completed so developers can start implementation in the next phase.

***The next 3 phases of the SDLC often occur in parallel and iteratively in reality, but are separated for clarification-sake.***

### 3. Implementation

During Sprint planning, the concept is presented once more to the team, split up into individual tasks and assigned to team members.

During Sprint planning the team plans with which release the new features should be delivered.

Team members meet at the Daily stand-up, in order to align on what they are working on, discuss any uncertainties and other problems.

The Product Owner supports the team to make sure they understand all details and works on clarifying specifications for the team.

Developers implement their tasks, and write the accompanying unit tests. Unit tests are run on each deployment or build, depending on the component's technology.

### 4. Code Review

When a developer finishes a task, the code has to be reviewed to make sure it follows coding guidelines and there are no security risks.

In larger teams, developers are paired to review each other's code, while in smaller teams Code Review is performed by the Team Lead.

### 5. Quality Assurance

Once a task has passed Code Review, it is tested by the QA engineers on the product team to make sure it is functional for users, passes the acceptance criteria of the specifications and all edge-cases are covered.

Depending on the component, API tests are written, automated UI tests are written and manual test cases are updated.

Regression testing is performed through automated UI tests, making sure the new implementation didn't break any existing features.

## 6. Review

The Product Owner reviews the implementation to make sure it meets all requirements and will satisfy all stakeholder's needs.

The Product Owner will make a list of issues and decides which need to be addressed prior to the initial release and which should be handled as separate initiatives in a later iteration.

The Product Owner makes sure the implementation complies with any regulation and with privacy standards set out in the concept phase.

## 7. Release

The new release is delivered to production. Account Managers & Implementation Teams work with customers to make sure they are aware of changes or are introduced to the new features available in the product.