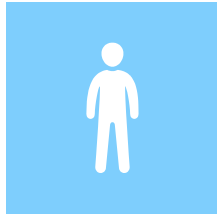# Group 4:
Payment gateway

Client: Okapi Finance

Who is our client?

- Mission is to bank the unbanked

- Transfer money without additional charges

- 80% of the population in Africa and 50% of the world's population is unbanked

How OKAPI system works?

Agents

Make accounts for the people who want to be a part of the OKAPI system.

Accounts

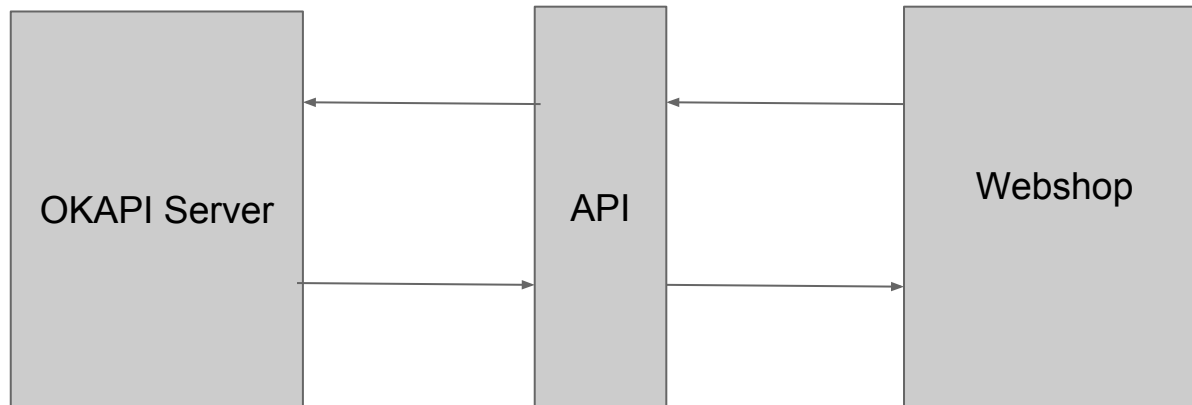Agents put money on customers' OKAPI accounts (OKAPI wallet).

Money transfer

Customers can swap money to friends or family across the country with no additional costs.

Paying in restaurants

Customers can pay using OKAPI wallets in restaurants or stores.

What is our project about?

```
┌──────────────┐       ┌────────┐       ┌──────────────┐
│              │◄──────│        │◄──────│              │
│              │       │        │       │              │
│ OKAPI Server │       │  API   │       │   Webshop    │
│              │       │        │       │              │
│              │──────►│        │──────►│              │
│              │       │        │       │              │
└──────────────┘       └────────┘       └──────────────┘
```

- Payment gateway

- Possibility for their customers to buy on the internet

- OKAPI is integrated with VISA

Who are we?

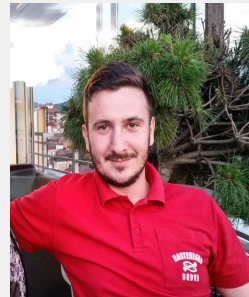**Nermin Imamović**

(project manager)

Janne Suuronen

(contact person)

Vadim Panin

Matthew Mccully

Kostadin Rajković

Arshad Ahmad

Darko Joška

How communication take place?

- We use Slack for group communication

- Mondays meeting with the steering group

- Group meeting on Mondays too

- Client meeting on Tuesdays

- Group meeting on Fridays

- Trello board

- GitHub

- Google Drive

Interaction with client

OKAPI Finance

Meetings with the client

- First (introduction meeting) - November 7th 2017

- Meeting every Tuesday

Communication with the client

- Email

- Slack channel

Direct Messages
💚 slackbot
Nermin (you)
○ Arshad Ahmad
Darko
erik
Janne
Kostadin Rajkovic
Leslie Dahlberg
○ Matthew Mccully
● Vadim Panin

First meeting with client

- System Requirements Specification (SRS) Document

- Detailed requirements

Okapi Payment Gateway Project

Introduction

Okapi is a fintech platform based on VISA. It provides virtual wallets and payment services to private and company customers. Read more at www.okapifinance.com.

Okapi wants to develop a payment gateway to enable web shops to integrate with Okapi for purchases. Okapi customers should be able to pay at web shops with their wallets and unregistered customers should be able to pay with a VISA card.

Project description

The project consists of two sub-projects: the first is a payment gateway with a small very simplified dummy version of Okapi for administration and the second part is a demo web shop used to demonstrate the prototype.

Think 3rd party payment gateways such as Klarna, Paypal, PayEx, Dibs, etc.

Technology wise we want the payment gateway to be developed with Microsoft technologies and the web shop can be developed using any technology. (Modern technologies preferred.)

The project contains many challenging aspects such as security, handling of financial transactions, web API calls, authentication, database design etc.

Project Outline

- Okapi Payment Gateway
    - Admin
        - Register/Manage Companies
        - Register/Manager Customers
        - View Reports
    - Company
        - View Reports
        - Configuration of API
    - API
        - Create Transaction Contract
        - Get Transaction Acknowledgement
    - Backend Logic / Business
    - Payment Page
        - Payment Methods
            - Okapi
                - Enter credentials

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Priorities

- Payment gateway

- Security aspect

System Description

Payment Gateway

System Description

- Pilot project

- Payment Gateway that can be integrated in webshops

- Dummy system that provide an API which company

  customers can use easily and safely

- Add OKAPI Payment to their webshop

System Components

- Okapi Payment Gateway API

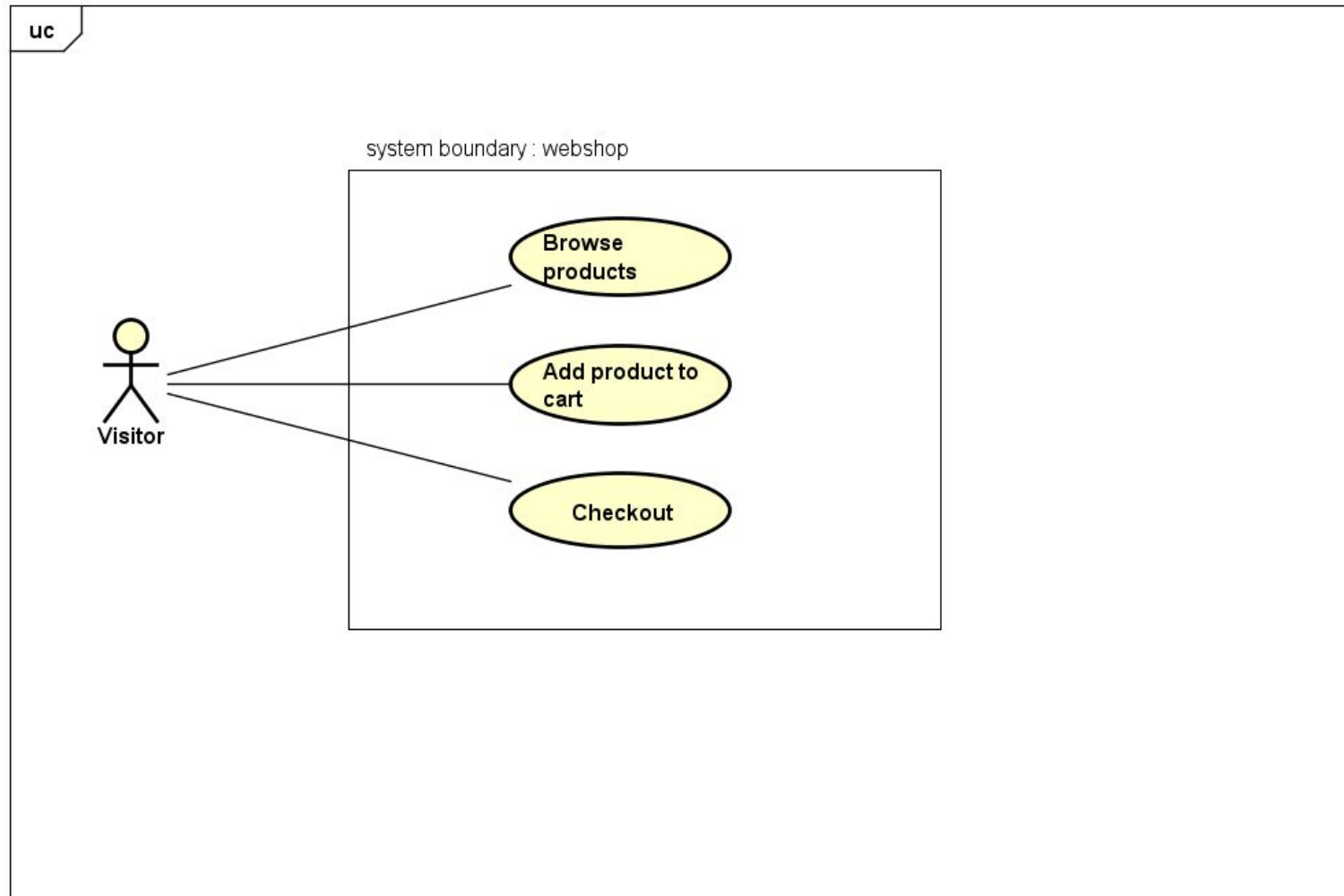- Demonstration webshop

- Administrative system

Roles in the system

- Administrator

- Company user

- Premium Customer

- Visitor (Demonstration webshop)

Functionalities (Payment Gateway)

uc

system boundary : okapi payment gateway

Premium Customer

Pay with VISA

{must have Okapi account}

Pay with Okapi

<<include>>

Login to Okapi

Company

Configure API

View reports

Administrator

Register Company

Register Premium Customer

Manage Premium customer

Manage Company

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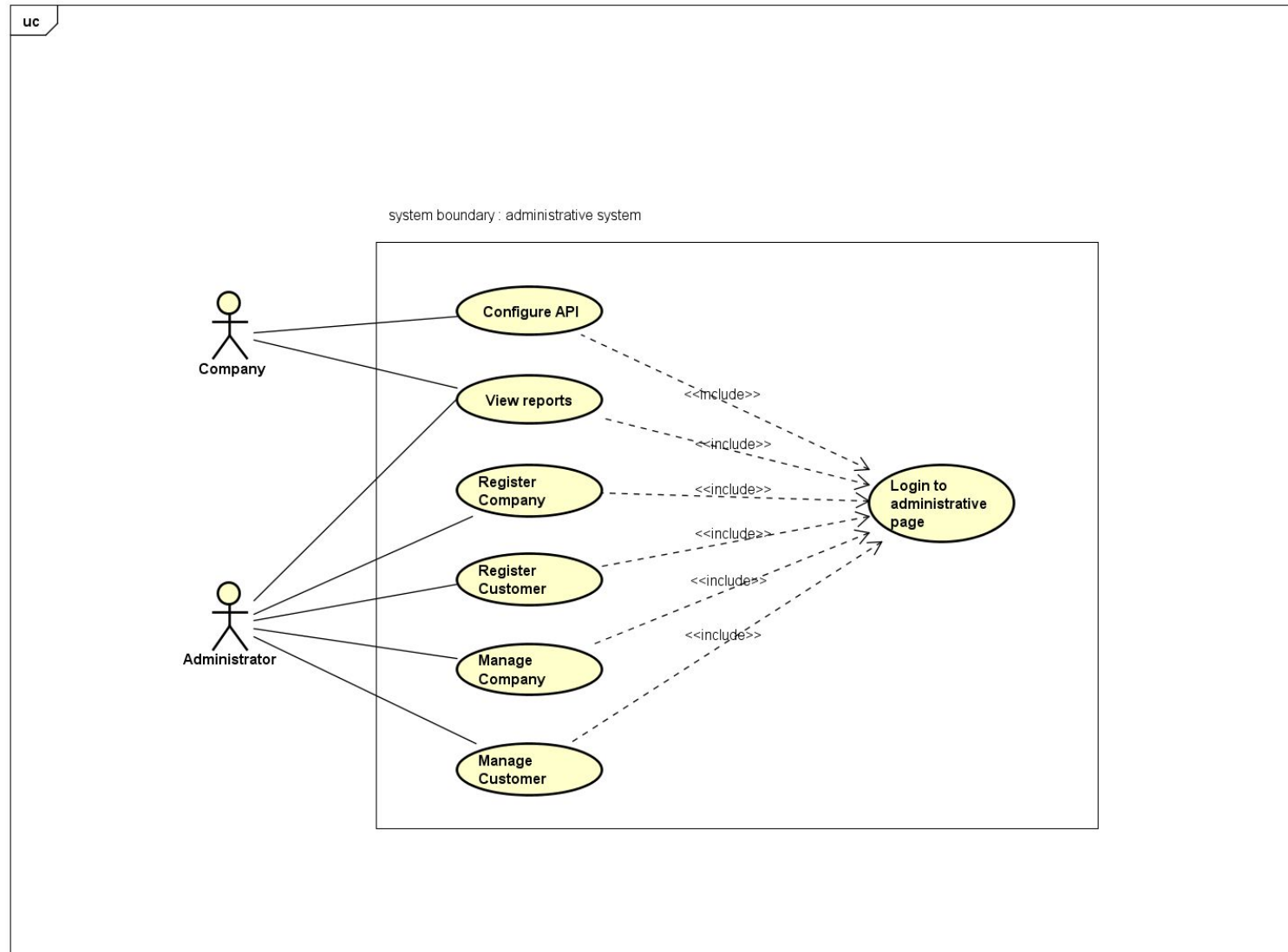
<<include>>

Login to Okapi Administrative site

Functionalities
(Demonstration Webshop)

Functionalities
(Administration panel)

Initial Backlog

- Six items total

- Five related to the Payment Gateway

- One being the demonstration webshop

Initial Backlog - The API

- Will be sending the request for creating a new transaction.

- Gets acknowledgement when the transaction has been completed.

Initial Backlog - Business logic

- Main workflow is the transaction.

- Validation would happen via external APIs(VISA).

- Certain information is not allowed to be stored.

Initial Backlog - Frontend side

- Webshop payment page.

- Company panel for administrative system.

- Administrator panel for administrative system.

Initial Backlog - Demonstration webshop

- Meant to be used a demonstration environment for the gateway.

- Will feature: product browsing, shopping cart and checkout.

Non-functional requirements - Security

- Involves handling of sensitive information.

- Makes security most important.

- To satisfy this requirement, use encryptions, security testing and follow regulations.

Non-functional requirements - Reliability

- External issues might occur

- Transaction should only complete once they have verified to be completed.

- Else confusion and additional costs can be introduced.

Thanks!

Any questions?