Commerce 2.x for the business specific

Feedback on a 2.5k person days project

Drupal Europe
Darmstadt, Germany
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L'ÉQUIPETECH

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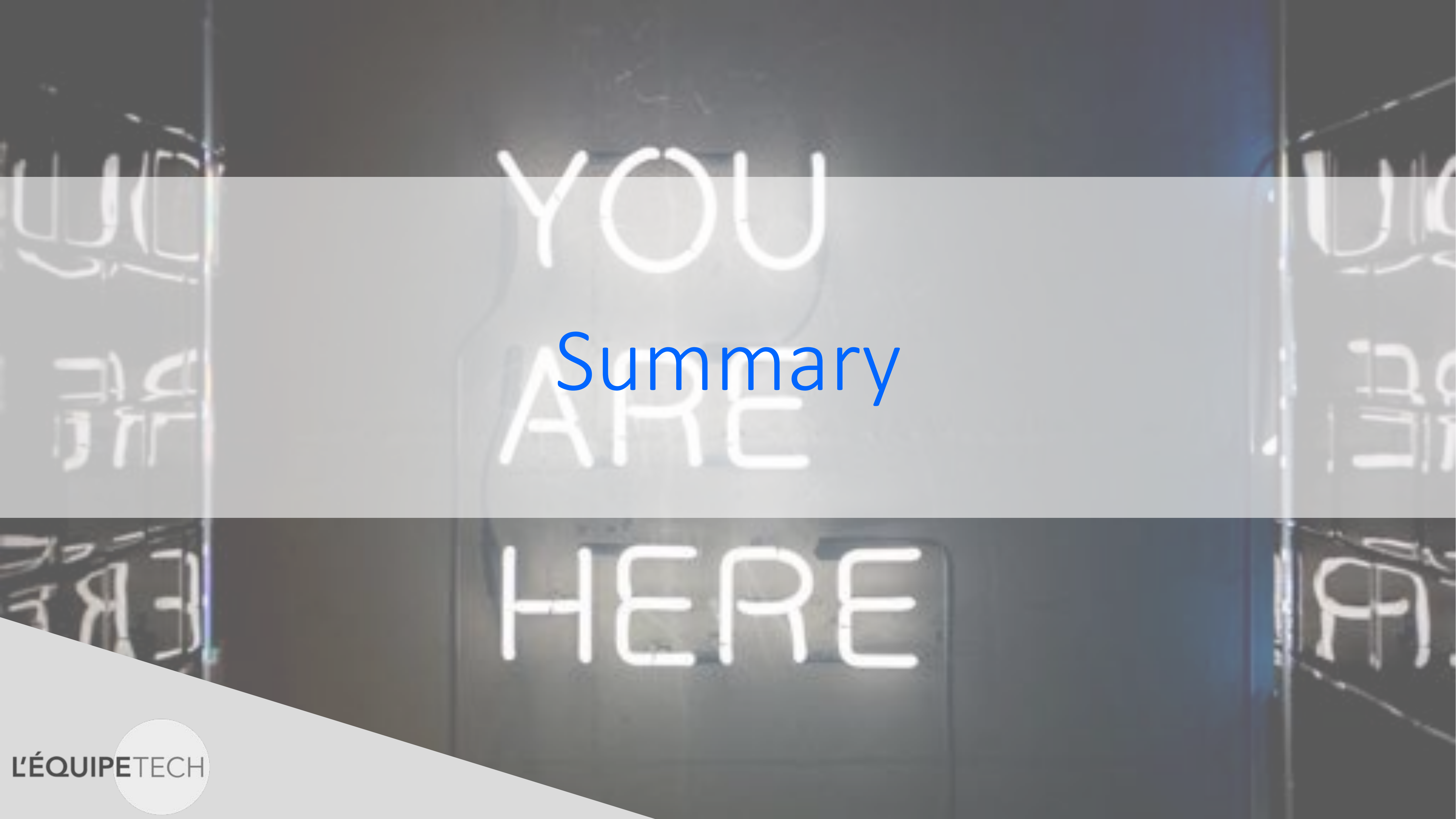
- Drupal contributor for more than 10 years.
- Core contributor Drupal 8.
- Core contributor Drupal Commerce 1.x and 2.x.
- Modules contributor.
- Lead Developer for 3 years at Commerce Guys.

- Lead Developer on the project.

GozOo Goz



Summary

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Summary

- Context
- Customer requirements
- Case study of business specific
- Looking on the weaknesses of Drupal Commerce 1.x
- Problems & Solutions
- Improvments
- Outcomes

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Context

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A project built by

NIJI

We deliver your ambition.

Since 2001, Niji, focus it's business in helping businesses make a success of the digital transformation. We help our customers – e-retailers and public services – to make the all-important switch to digital technologies in support of their strategies, multi-channel distribution and internal operations.

750
employees

+ 20%
growth revenue

200+
international and local customers

100 CONSULTANTS

Voice of customer
Business disruption
Digital Strategy
Technological opportunities

100 DESIGNERS

Customer & User eXperience
Brand & content design
Creative technology
Business performance

500 TECHNICAL EXPERT

Mobile, e-commerce & web
Factory, Labelized Test center
Agile & Scrum management
Smart technologies

50 EXPERTS DRUPAL

Architectes, Experts,
Front dev, Project leaders
More than 30 Drupal 8 projects

Our Drupal 8 Customers

ENGIE · Les Glénans · Route du Rhum Destination Guadeloupe · VERLINGUE Courtier en assurances · Bonduelle · Eurolines

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Context

Supported by L'ÉQUIPETECH

- Drupal & Drupal Commerce experts
  - Back-end & Front-end
- +10 years of experience in web & commerce
- **Lead teams**
- Drupal Commerce **support** and **training**
- **Help companies** for pre-sales

Drupal™

Symfony

DRUPAL COMMERCE

Solr

Sass

ZURB Foundation

The project team

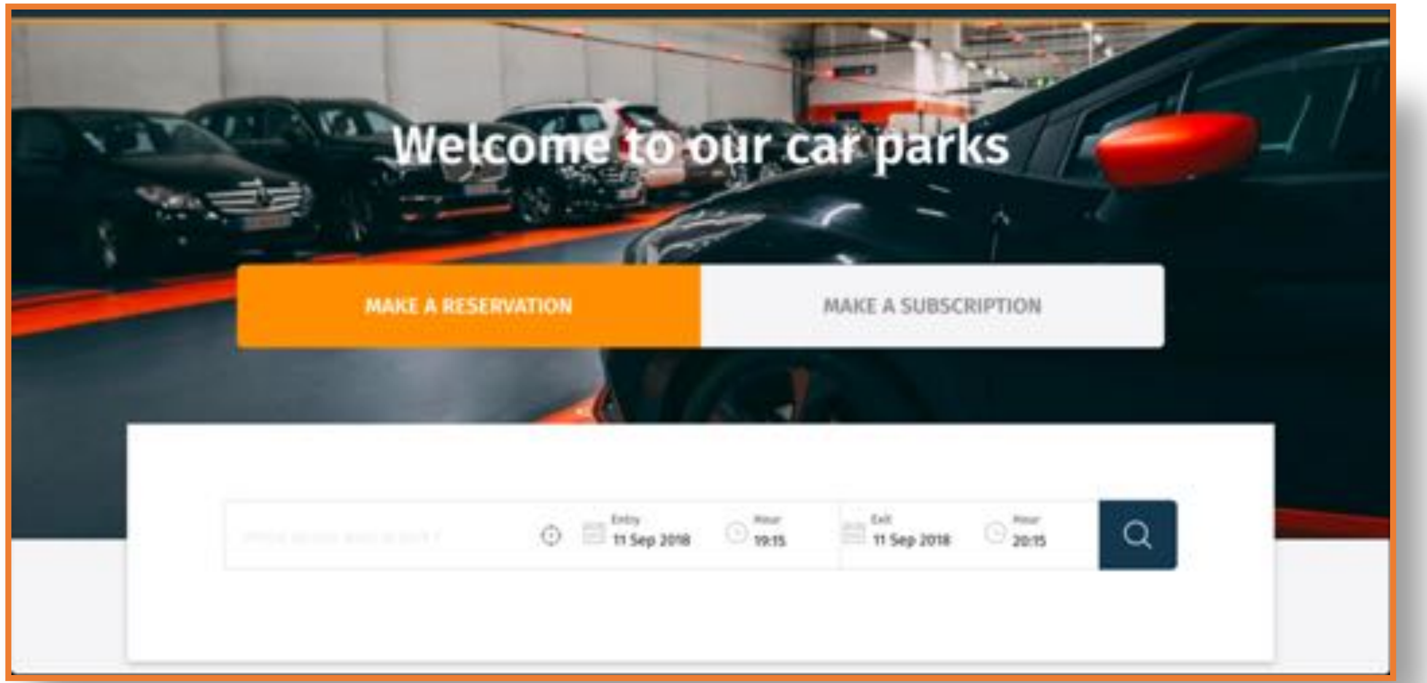
~2500 person days.

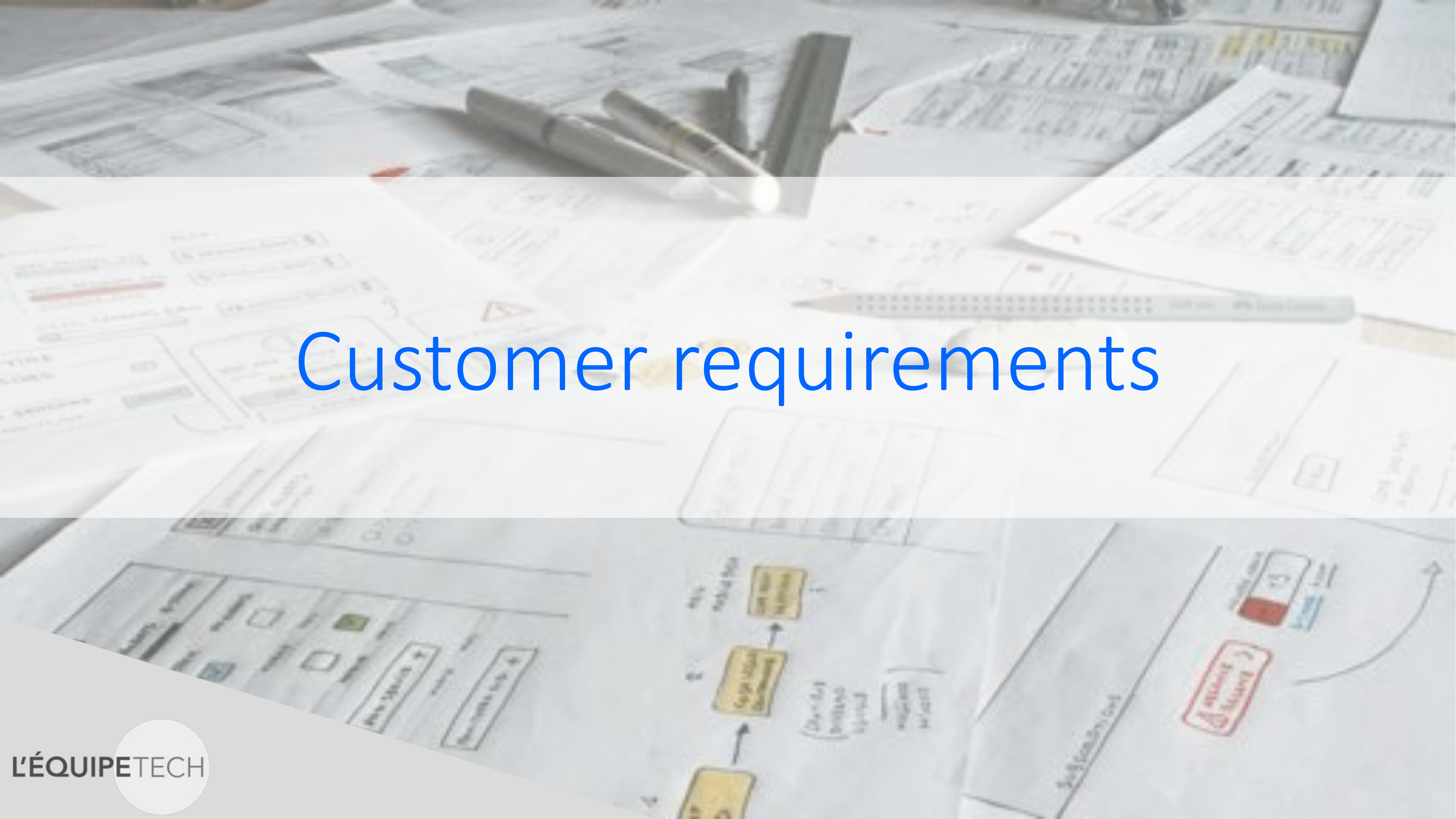
Spread over the duration of the project:

- 1 project manager
- 2 architects
- 1 lead developer
- 4 front-end developers
- 20 back-end developers Drupal & Symfony
- 5 testers

The customer

- A **major player** in car park in France and Belgium.
- Leader in train station parking.
- 40 years of experience in car park.
- Provide on-street and off-street parking management solutions.
- **400 car parks** in **185 cities**.
- 163 M€





Customer requirements

Corporate site

- Introduce the company
- Introduce offers
- Frequently asked questions
- Display media images/videos
- Multilingual site: EN, FR, RU

Online parking spots booking

- Parking spot booking
  - By time or at flat rate.
- Find the best booking price
  - By time.
  - Flat rate.
  - Flat rate + exceeded time.
  - All of them with promotions.
- Take care of booking fees and automatic or manual discounts.
- Subscribe to a car park subscription.

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Online parking spots booking

- From a dashboard, a customer can see and manage:
  - Multiple drivers.
  - Multiple vehicles.
  - See his bookings:
    - Current, past and future
    - Booked from the platform, on site or from a partner.

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Data recovery from previous site

- Data recovery for:
  - Users
  - Previous orders
  - Ongoing orders

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Business specific needs

- Rates and availability calculated according to criteria:
  - Options
  - Opening hours
  - Date/time range
  - Parking duration time
  - Discounts
  - Yield rules
- Services available for partners.
- Synchronization and data export.

Synchronization with ERP and CRM

- Data exports (orders).
- Data synchronization (import/export) synchronous and asynchronous:
  - Orders
  - Users
  - Drivers
  - Vehicles
  - Prices
  - Opening hours
  - Car parks
  - ...

Webservices

- Rate calculation provided for partner.
- Availability of a parking spot for a duration in a datetime range.
- Search of parking nearby coords.
- Order creation by partners.
- CRUD:
  - Orders, Users, Drivers, Vehicles.

Case study of business specific

Reminder of requirements

- Multilingual website.
- High editorial requirements.
- Customizable back-office.
- Online booking.
- 2 checkouts (booking + subscription).
- Customized checkout.
- Specific product concept.
- No fixed price per product:
  - Specific rate calculation.
  - Infinite possibilities.
- Specific availability management.
- Webservices and import/export.

Multilingual website

- Drupal is multilingual.
- The commerce part can be segmented according to a language.

High editorial requirements

- Drupal is a CMS : Content Management System.
- Content is what Drupal does the best.
- Use the Paragraph module:
  - Flexibility of the display.
  - Allows the customer to choose how to display its content from a catalog of items.
  - Consistent display throughout the website.
- Use the Media module:
  - Shared media library.

Customized Back-office

- Customized back-office dashboards to:
  - List orders (booking orders, subscription orders, payments state) with data, filters and specific sorts thanks to *views*.
  - List of created entities with data, filters and specific sorts thanks to *views*.
  - Configuration of features in specific screens thanks to the *form api* and the configuration management.
  - Several data exports.

Online booking

- Using Drupal Commerce 2.x which already provides:
  - Concept of products
  - Concept of orders
  - Checkout
  - Promotions/Coupons/Discounts
  - Events for price calculation and availability
  - Events at each step of an order
  - Payment helper

2 checkouts

- Booking and subscription are both order bundles.
- Each has its own checkout process:
  - Entering several drivers for the subscription.
  - Different order summaries.
  - Different payment solutions (credit card and/or bank transfer).
  - Different emails and contents depending on the bundle of order.

Customized checkout

- No cart: 1 booking by checkout with direct access.
- Simplify inputs during the process:
  - the driver(s) and their vehicle and reuse existing data.
- Summary and highlights are specific to the current purchase.
- Specific payment (payline / slimpay).
- Display personalized information (access code, booking information).
- Send personalized emails.

Specific product concept

- A product is named here a pocket: a parking area in a given place.
- The different booking possibilities lead to an **infinite number of possible products** if we wanted to represent them all in terms of parking spots.
- The booking will then be qualified according to different parameters:
  - The desired booking period.
  - Some time stayed.
  - Wished options.

No fixed price per product

- A parking spot does **not** have a **fixed price**, but **different prices** depending on many criterias.
- The calculation of the price of a booking is based on:
    - The desired booking period.
    - The rental duration.
    - The wished options.
    - The ongoing promotions (automatic or via coupon).
    - The yield rules.
- The data specific to our booking (period, option, etc) are directly stored in our order.

No fixed price per product

- The **calculation** system is managed directly **in Drupal** (not outsourced).
- All the required data for the calculation of these rates are:
  - **Daily imported** from an **ERP** from CSV files.
  - Stored in entities related to the data models sent.
- Commerce 2.x provides a **service** that allows us to integrate our **own price calculation rules**.

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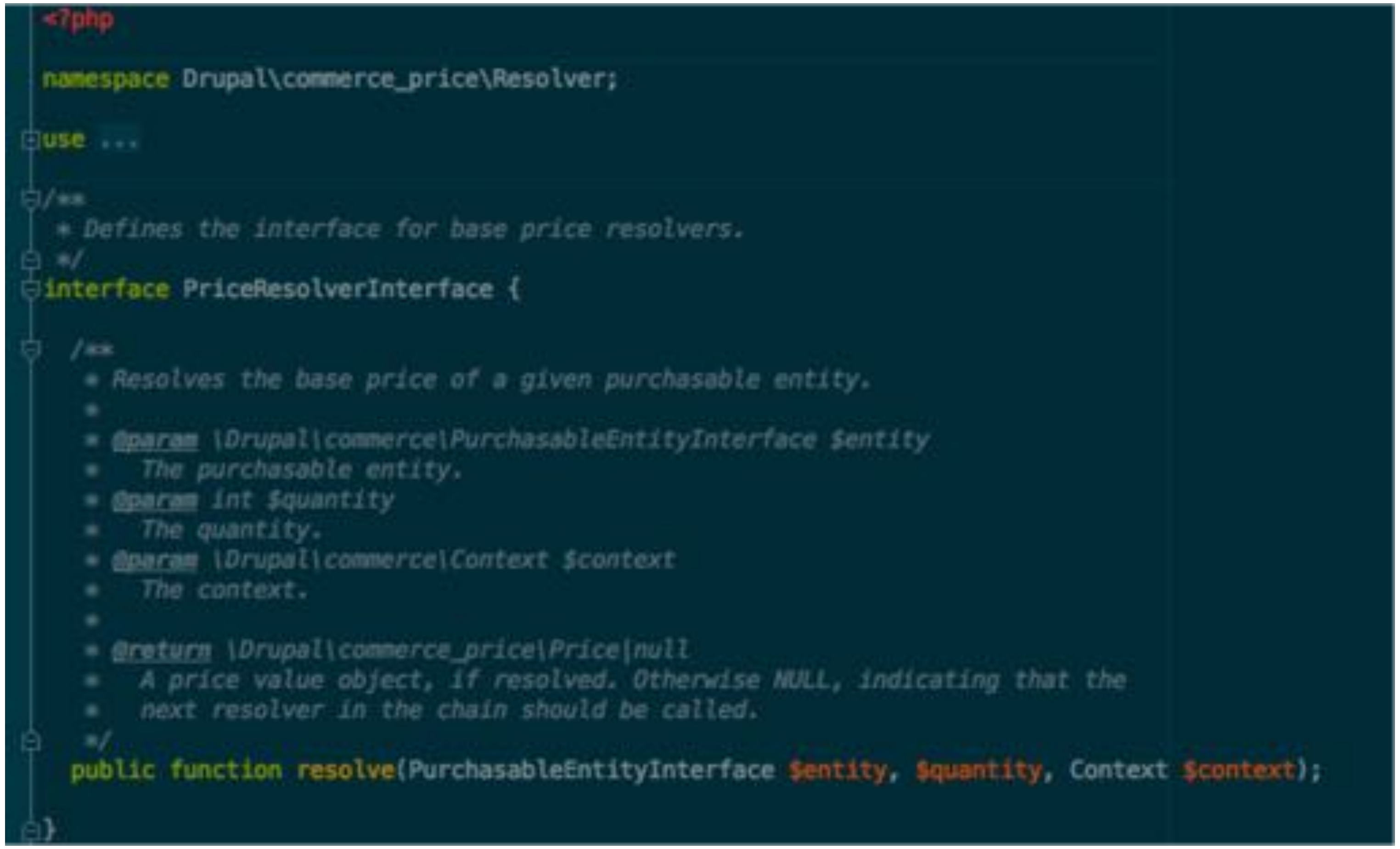
The price is dynamic

Solution

- Using the Commerce 2.x service `commerce_price.price_resolver`.
- Storage of all data relevant to the calculation in entities
- Use of this data in calculation rules



```php
<?php

namespace Drupal\commerce_price\Resolver;

use ...

/**
 * Defines the interface for base price resolvers.
 */
interface PriceResolverInterface {

  /**
   * Resolves the base price of a given purchasable entity.
   *
   * @param \Drupal\commerce\PurchasableEntityInterface $entity
   *   The purchasable entity.
   * @param int $quantity
   *   The quantity.
   * @param \Drupal\commerce\Context $context
   *   The context.
   *
   * @return \Drupal\commerce_price\Price|null
   *   A price value object, if resolved. Otherwise NULL, indicating that the
   *   next resolver in the chain should be called.
   */
  public function resolve(PurchasableEntityInterface $entity, $quantity, Context $context);

}
```

Specific availability management

- The availability of a parking spot depends:
  - The desired booking period.
  - Wished options.
  - Opening hours of the car park.
  - Possible capacity.
  - The number of parking spots already booked over the period according to the options.
- Each car park has its own capacity per period.
- The number of parking spots already booked per option are stored in an entity.

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Webservices and import/export

- **Bulk import** via **Migrate**:
  - Orders
  - Promotions
  - Business data (prices, car parks, opening hours, etc.)
- Expose and consume **web services** in Soap/XML and JSON
  - CRUD orders, users, drivers, vehicles
  - Availabilities
  - Rate calculation
- Export of data file. About ten different **exports in several formats**: CSV and proprietary formats.

Looking on the weaknesses of Drupal Commerce 1.x

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Which would have been more laborious (or impossible)

- On-the-fly price calculation.
- Different checkouts.
- Web services.
- Cache management.
- Import/export structure of entities via the features module.
- Using Rules module instead of events.

Problems and solutions

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Find the best rate / rate calculation on the display

Solution

- **Dummy order generation** to use calculation commerce features from an order:
  - Adjustments
  - Promotions
  - Price Resolver

Calls to Drupal and external services must not be unavailable

Solution

- Add an **abstraction and retention layer** via Symfony + RabbitMQ.
- **Drupal** only provides and manages **JSON**.
- **Symfony** application deals with the **conversion** between Drupal and external if needed.

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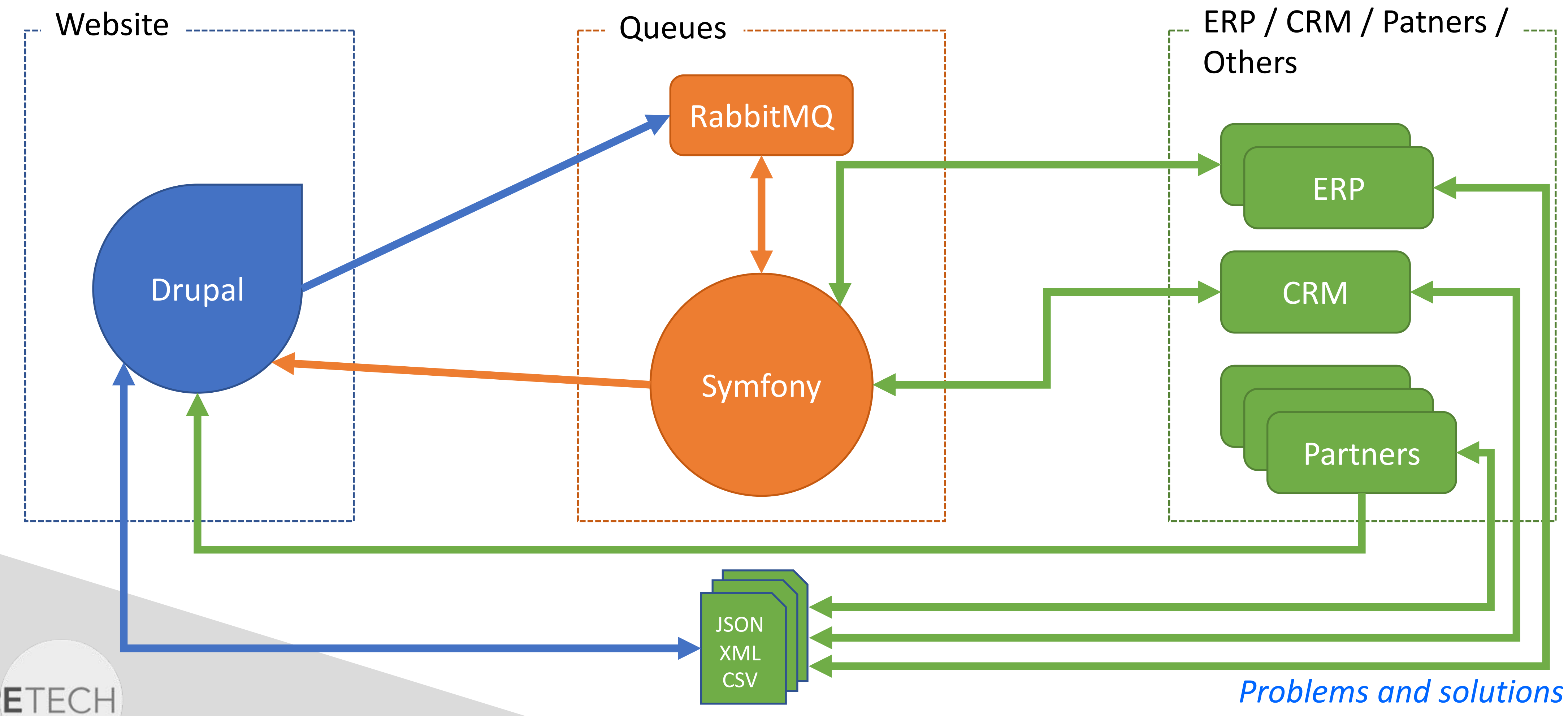
Calls to Drupal and external services must not be unavailable



Problems and solutions

Securing critical features

Solution

- Implementation of automatic **tests** via **PHPUnit**.
- **Manual functional tests** by a team of testers.

Quality development in line with good practices

Solution

- Systematic **review** of any **code**. Use of Gitlab and merge requests. Development branch blocked and mandatory validation by the Lead dev.
- Use of **Code Sniffer**:
  - PHPCS
  - Eslint and SassLint
- **Code audit** via SonarQube.

The two payment gateways used do not exist on commerce 2.x

Solution

- Creation of two modules.
- The commerce 2.x plugin and interface system
  - **shortens the time required** to create payment modules
  - helps to **maintain consistency** between different modules.

Expose web services

Solution

- Drupal 8.x offers by **default a REST module** to expose a CRUD of the data in JSON format.
- Commerce 2.x integrates its entities perfectly into this functionality.
- **Easy creation** of new **REST resources** as needed.

Start before commerce 2.0 release

Solution

- Follow the issues.
- Talk with Commerce Guys to know what current state commerce 2.x is in.
- Help on required issues for the project.

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Only lead dev knew about Drupal Commerce

Solution

- Training people.
- Drupal Commerce is Drupal + Symfony. Easy to move on, knowing both.
- Reviews help a lot to improve skills.

Maintain consistency between environments

Solution

- Use LXC to have containers by application.
- First half of project, always install to get other people stuff back.
- Second half of project, switch to update.
- Everything has to be scripted: No changed has to be made manually.

Install and update:

- Bash scripts to run commands and scripts.
- Drush commands to install, update.
- Import configuration with config_split and config filter.

I have an issue / I need this missing feature

Solution

- Participate to issues on drupal.org.
- Create patchs (or PR for commerce 2.x)
  - On core
  - On contrib modules

Improvments

A personal thought about what we could improve.

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Price calculation

- Optimization of the price calculation engine to improve its performance (cost and time).

Secure development

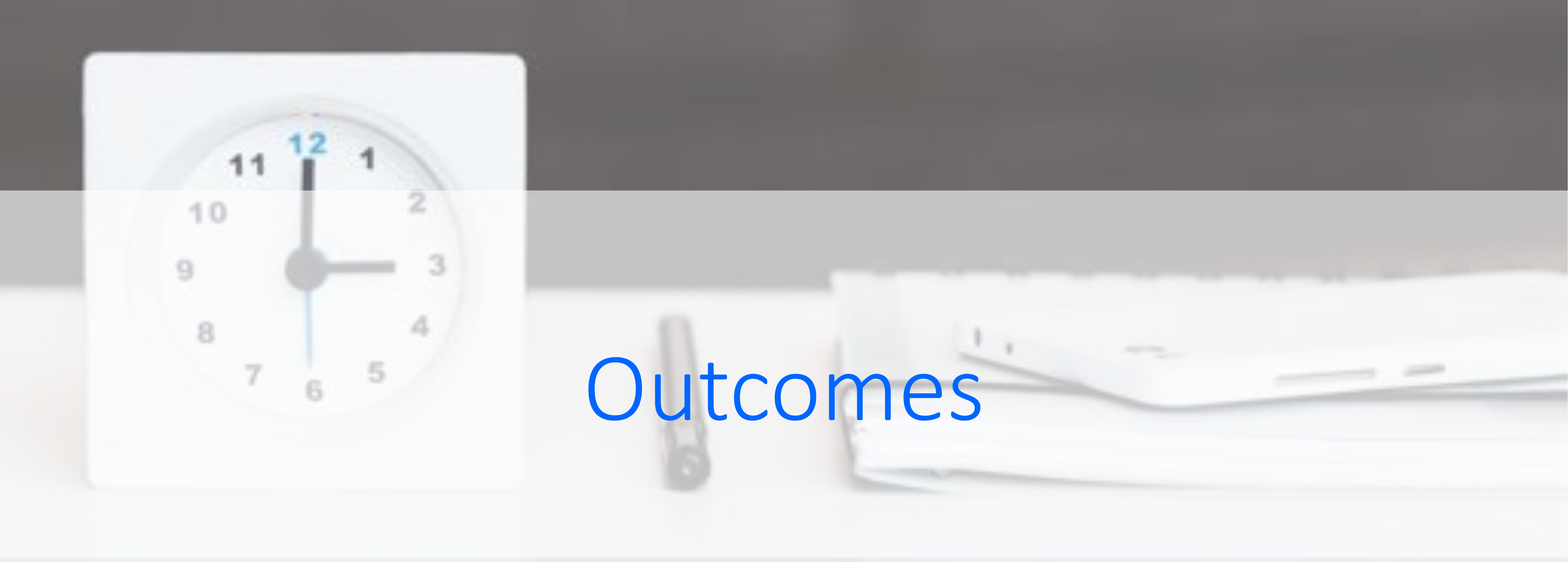
- **Increase automatic functional** tests to avoid regressions on critical features.
- Use of **BeHat** or equivalent to include the customer in the tests writing.

Back-office inputs

- Management of paragraphs via a "library" more explicit than the interface provided by default.
- Improvment of the interface of nested paragraphs.

Front-Office

- More harmonious use of javascript when searching and calculating prices for a better user experience.
- Reduce page weight.
- The integration of forms in the front-office is still the black spot for front-end developers.



Outcomes

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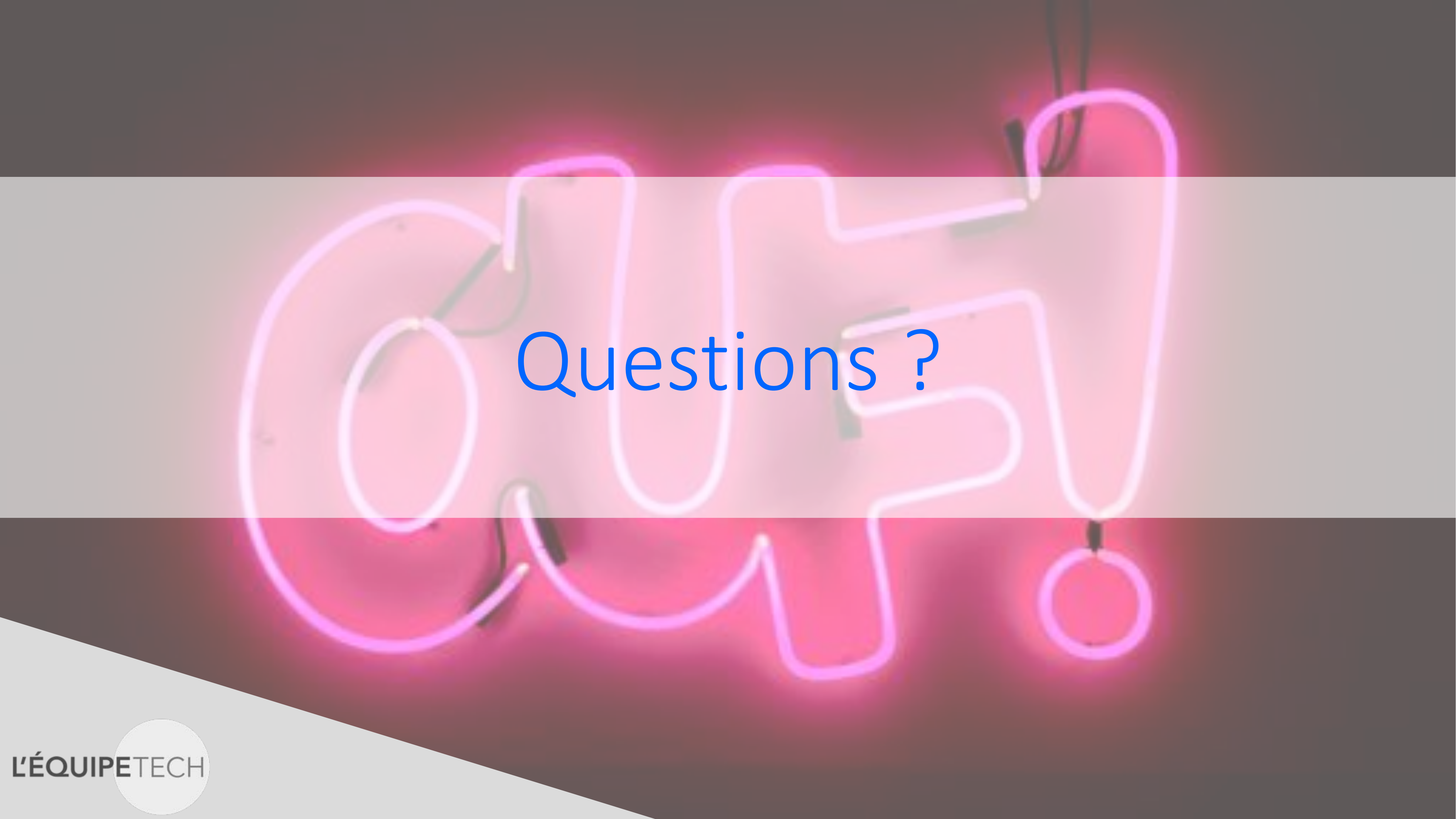
Outcomes

- A business e-commerce project outside the traditional online sales sites.
- Big points of business complexity.
- Commerce 2.x more flexible and better designed than Commerce 1.x.
- Commerce 2.x adapted to business commerce.
- An online site with an ever-increasing number of sales.



Questions ?

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