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One System, Multiple Markets: Supporting OLX's Path to Market-Agnostic Payments and Delivery

5+
core
capabilities
unified

unified
architecture
across BE/FE

culture
collaborative
practices

Introduction

Environmental consciousness, cost of living crises and COVID set the stage for remarkable growth in online marketplaces like OLX. COVID in particular, led to an overnight upsurge in the requirement for online payment and delivery capabilities across European markets.

Supporting such rapid growth had necessitated the creation of 3 independent implementations of payments and delivery capabilities across Poland, Romania and Ukraine. Whilst this had served its purpose, independent implementations had both product and operational challenges. Entering new markets or even maintaining market position became significantly more difficult and expensive, leading OLX to the decision to unify these services into a single market agnostic technology stack.

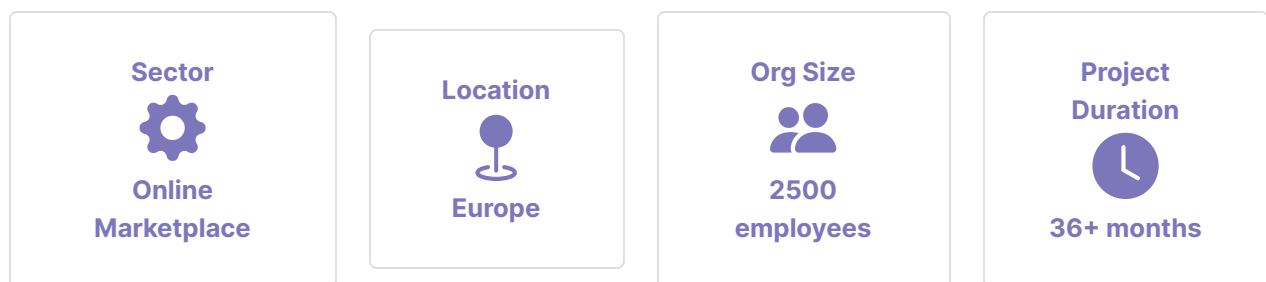
With the backdrop of increasing European regulation, Clockwork has been supporting OLX in this journey to “unify” its payment and delivery capabilities by providing expertise across the board: Backend, Frontend and Platform Engineering, Technical Program Management and Engineering Directorship.

In order to drive this complex initiative, Clockwork laid the foundations for a market agnostic platform allowing the continuous delivery of backend and frontend components to production multiple times a day. In addition to establishing the strategy and execution of this platform, Clockwork consultants helped upskill engineering teams to adopt this approach.

About OLX

OLX is a global marketplace that has revolutionised the way people buy and sell goods and services online. Founded in 2006, this marketplace allows users to easily list and browse items across various categories, from electronics and furniture to vehicles and real estate, connecting buyers and sellers in their local areas.

Since its inception, OLX has grown rapidly, becoming one of the largest online marketplaces in the world. With a presence in over 30 countries and millions of active users, OLX has empowered individuals to declutter, find bargains, and make money through a simple, user-friendly interface. Its combination of accessibility, trust-building tools, and smart marketing has helped OLX become a leader in the competitive world of online classifieds.



Challenge

Establishing the foundations for multi-market product development and operations.

In order to work towards profitability targets, the payments and shipments area of OLX needed to scale to 100M transactions per year. That level of scale needs:

- Maximising the number of online transactions in existing markets
- Scaling to new markets

- Offering online transactions to new sectors such as services and car parts

The challenge that OLX had is around the scalability characteristics with fixed costs growing linearly with the number of markets: 3 markets and 3 different solutions.

Prohibitive Development Costs: Each product feature needed to be built three times, making the cost of developing new capabilities essentially prohibitive.

High Maintenance and Operational Expenses: Maintaining and operating three different solutions incurred significant costs, which made expansion into new markets impractical.

Team Efficiency and Context Switching: Teams faced considerable context switching when working with three different solutions due to:

- Different Product Experiences
- Diverse Programming Languages & Frameworks: Python, Kotlin, React, Svelte
- Minimal Shared Components: Few shared components between markets
- Differing experience with the solutions, due to historical reasons

This set the stage for rethinking and unifying the product experience and operations. The Payments and Delivery area embarked on a journey to converge towards a single, market agnostic product experience, rolled out to multiple markets.

Solution

Moving from market specific to market agnostic is a wholesale change in thinking across the whole department — whether it's product, design, tech or even the market managers. Clockwork helped in a number of ways.

Unified Platform and Services

To make this ambitious goal possible, the teams needed to build upon a coherent market agnostic system. One that was configurable for all markets rather than a separate system for each market.

Clockwork took the lead in helping the OLX teams to create a platform which was based on a common base, with a microservice architecture underpinned by common code for essential non-functional features such as observability and security. The platform was organised in a single code repository (monorepo) structure and supported by Continuous Delivery pipelines which delivered code to production

hundreds of times a day in under 20 minutes, backed up by heavy automated testing across all phases of the product engineering lifecycle.

Shifting Mindset and Ways of Working

A single, unified, market agnostic product experience means the same user experience / flow in all markets. This required a shift to “Standard by default” rather than “market specific by default” mindset, e.g. having the same checkout flow everywhere.

In order to do this, Clockwork worked to ensure that Product was an equal partner in the unification process. A mindset shift to thinking in capabilities that are exposed to the customer was needed.

This approach ensured not only that existing services were unified well, but that future services were built thinking in a market agnostic manner.

Clockwork also introduced Pair Programming and Ensemble Programming practices as ways of performing continual code reviews and invested heavily in “Shift-Left” practices to ensure that the development feedback loop was minimised to enable a high level of flow across product engineering teams.

Results

To move from multiple market specific implementations and capabilities to a single market agnostic stack, whilst supporting new regulatory requirements in parallel, is a non-trivial endeavour. Some of the key achievements that Clockwork supported OLX in achieving include:

Market Agnostic Delivery & Payments Checkout Experience

Numerous services and customer facing flows were unified by OLX during the 2022 to 2024 period, the most visible being the market agnostic checkout experience serving both Romania and Poland.

- This serves over 2.2 million checkout requests across Poland and Romania for Web and Mobile with a P95 of ~200ms.
- **Simplified monitoring and alerting** — By treating “market” as an attribute, there is a single place to monitor system performance and alert when thresholds for errors or latency have been breached.

- **Codebase** — Both markets are served by a single codebase with features managed as capabilities and common components are shared.
- **Experimentation** — There is the ability to run cross market experiments on the checkout flow.

Multi-Market Platform

The market agnostic services are backed by a platform that hosts approximately 40 backend services and 30 frontend modules implementing a range of capabilities across the payments and delivery domain.

This platform supports engineers in focusing on product delivery by providing shared infrastructure components, tooling, and implementation of best practices around testing, observability, and security.

The rate of change that the platform supports puts the teams operating on it in the highest DORA classification (High Performers*) with averages of 10+ production deployments per day, a change failure rate below 4%, and Lead time to change under 3 hours.

** Data from July 2024*

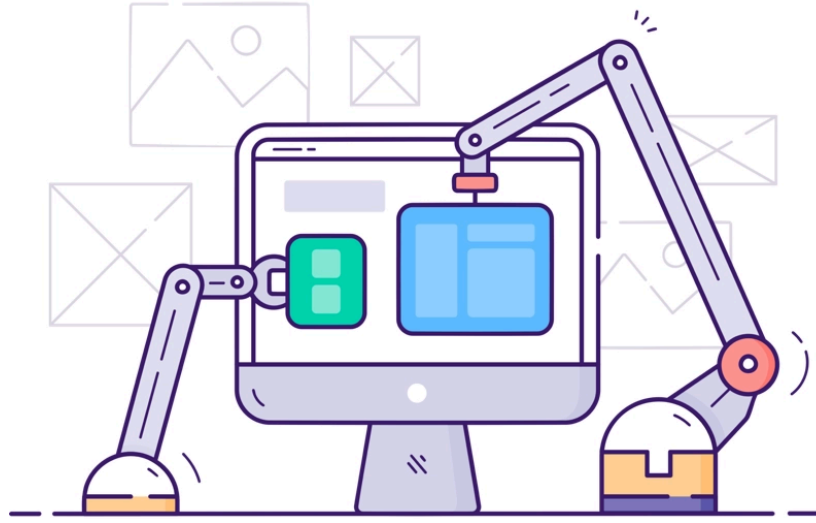
Conclusion

Moving from a market centric approach with multiple implementations to a market agnostic way of working and thinking is rarely straightforward or easy. It requires the entire organisation to think, act and work differently — changing both in the way that problems are thought about and solved. In essence, this work has to be performed on shifting sands; whilst new regulatory changes are made and features are introduced.

In the time that Clockwork supported this transition, OLX were able to move the majority of the key customer facing (Payment & Delivery) services for Poland and Romania to the new unified platform.

OLX continues on this journey in the payment & delivery space, aiming for new markets, services and features — built once, served in multiple countries. They do so on a platform that is scalable, with templates for new services that make them testable, observable and self-documenting.

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