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# Poster: An Empirical Study of the Product Owner Role in Scrum

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## ABSTRACT

The Product Owner (PO) is critical for translating business needs into a software implementation by gathering and prioritizing requirements, and assessing whether features have met the definition of “done.” There is a paucity of detail about how POs achieve this daunting task in practice with potential negative consequences for project success.

In this research we employed a mixed-method approach comprising two case studies in which we interviewed and observed 55 practitioners across 9 large multi-national companies and an SME. Using a cross-case analysis we identified twelve distinct Product Owner activities.

From our empirical findings we created a Product Owner role taxonomy and found eight generic activities common to all teams, projects and companies regardless of project size.

## CCS CONCEPTS

- **Software and its engineering** → **Software creation and management**; *Software development process management*; Collaboration in software development;

## KEYWORDS

Agile software development, Scrum, inter-team coordination, product owner role, SME, Global Software Development

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## 1 INTRODUCTION

Agile methods offer an approach to delivering value to the customer, improving productivity and product quality in software development [3]. There are three roles in the Scrum

approach: Product Owner, Scrum Master, and development team member. The Product Owner establishes a product vision and then elicits and prioritises requirements.

The Product Owner role is said to be “a cornerstone of successfully applying agile product management in Scrum” [8]. Yet, few studies report precisely how POs perform their role. We have observed Product Owners performing a surprisingly wide range of tasks and activities. In this research we examine what Product Owners actually do, through an empirical study of 55 practitioners in 10 separate organizations.

## 2 BACKGROUND

The Product Owner is responsible for communication between the customer and development teams [5]. The Product Owner “plays a crucial part not only in bringing new products to life but also in managing the product lifecycle” [8].

In larger scale agile projects, Product Owners organise themselves into teams [7]. The concept of Product Owner teams (with shared responsibilities) sees technical and governance issues added to the Product Owner responsibilities, in order to coordinate cooperating agile teams [1].

In this study we now undertake a cross-case analysis of 10 companies, and specifically ask *What activities do Product Owners perform?*

## 3 METHOD

In order to address our research question, we undertook a three phased cross-case analysis of ten organisations, all performing Scrum.

The first phase (Case Study 1) comprised 46 face-to-face semi-structured interviews conducted with practitioners in 9 large-scale multi-national companies (see Table 1), between January 2010 and March 2014. The interviews employed an open-ended interview guide and were recorded and then transcribed. A Glaserian grounded theory approach was used, informed by open coding, memo writing and constant comparison and theoretical saturation [4].

Building on the first phase, we triangulated findings with Case Study 2, a participant-observation study focusing on a development team from a medium-sized Irish-based software company Ocuco Ltd., conducted between January, 2016 and March, 2017, and validated by members of Ocuco Ltd.’s development organization (see Table 2).

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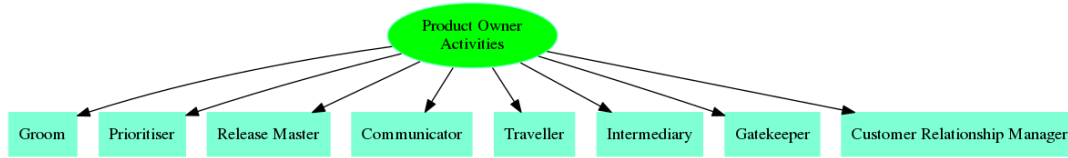


Figure 1: Product Owner activities from cross-case analysis

Table 1: Case Study 1 Demographic Information (n=46)

Company	Company Sector	Participant Roles
A, India	IT Service Provider	Programme Manager, Senior Project Manager, Team Member
B, India	Internet	Engineering Manager, Product Manager
C, India	Software Provider	Service Development Manager
D, India (offshore provider to E)	Software Provider	Service Project Manager, Product Owner, Scrum Master (3), QA Lead, Team Member
E, UK, England	Enterprise CRM	Programme Manager, Project Manager, Director of Engineering
F, India	Industrial Products	Scrum Master
G, India	IT Service Provider	Engagement Manager
H, India	IT Service Provider	Chief Technology Officer, Corporate Lead Architect, General Manager Human Resources, Delivery/Programme Manager (3), Project/Senior Project Manager (3), Scrum Master (2), Technical Analyst, Consultant/Specialist (6), Team Member (9), Business Analyst
I, UK, Scotland	CRM	Chief Operating Officer

We observed approximately 200 of TeamA’s Scrum ceremonies, and also conducted 9 semi-structured interviews of each member of TeamA, which were recorded and transcribed [2]. In phase three we employed a cross-case analysis [6] of our initial case study (Case Study 1) data and the new practices found in Case Study 2. We explored the results from all cases looking for similarities and differences.

## 4 RESULTS

The eight groups of Product Owner activities performed in all cases are shown in Fig. 1:

The *Groom* clarifies the details of product backlog items, and their respective acceptance criteria. The *Prioritiser* selects requirements that bring highest value or benefit. The *Release Master* manages and approves release plans. The *Communicator* transfers knowledge between onshore and offshore sites. The *Traveller* gathers an understanding of a client’s needs by spending time onshore at customer sites. The *Intermediary* acts as an interface between senior roles, and the team, to disseminate domain knowledge. The *Gatekeeper* determines feature or story completeness for inclusion in a release. The *Customer Relationship Manager* provides technical support to customers, assists with site preparation and product installation, and does product training.

## 5 CONCLUSIONS

In this research we conducted two independent case studies and performed a cross-case analysis to discover Product

Table 2: Case Study 2 Demographic Information (n=9)

Ocuco Ltd.	Participant Role	# participants
Team A	Product Owner	2
	Software Developer	5
	Quality Assurance	1
	Project Manager/Scrum Master	1

Owner activities from the perspective of 55 practitioners in 10 companies.

Our research shows that Product Owners perform a wide range of challenging activities which require experience and high-status in order to be able to exert influence over other project stakeholders.

As further work we will seek to publish more detailed descriptions of the Product Owner activities along with supporting evidence from our case studies and cross-case analysis.

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