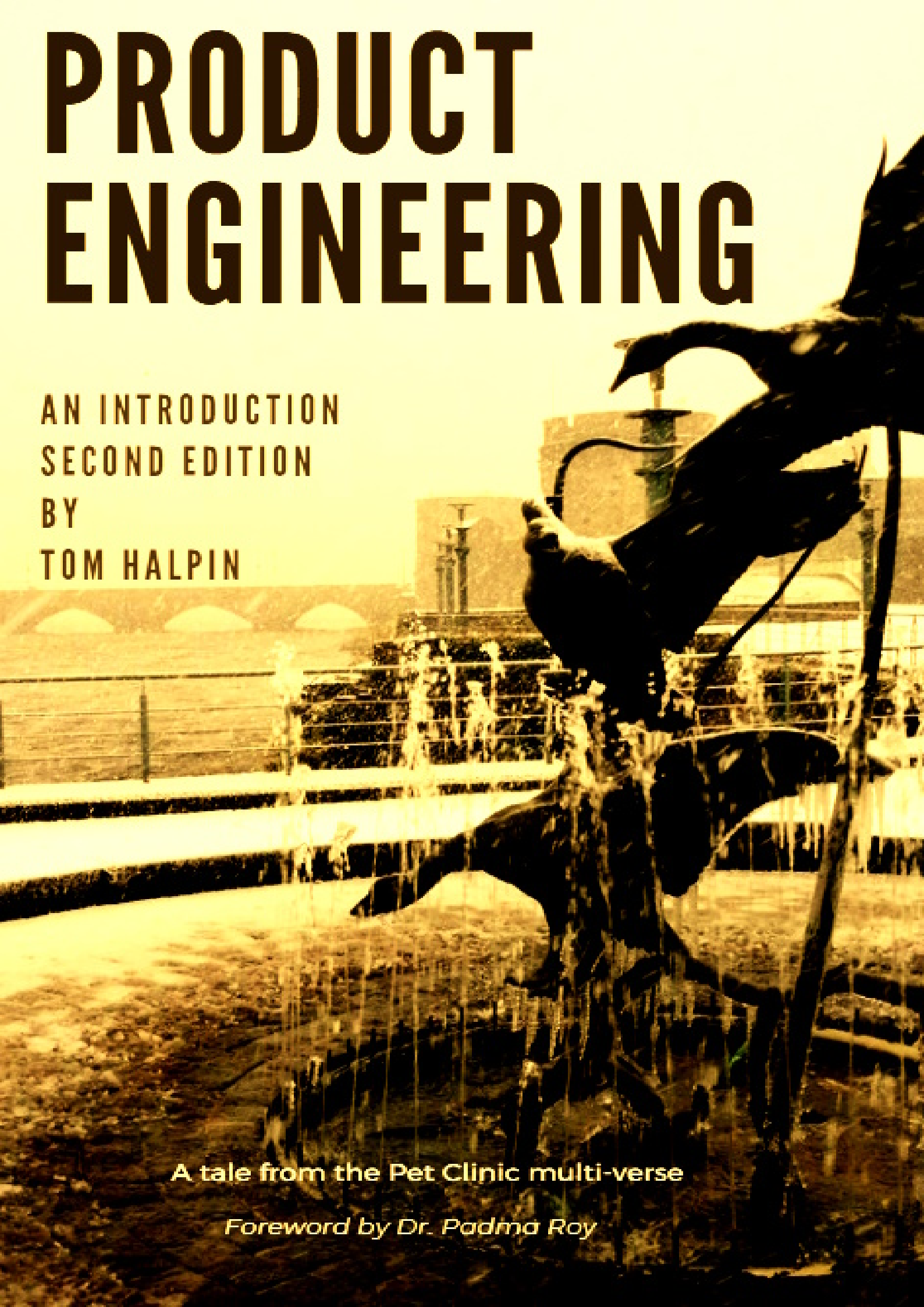
PRODUCT ENGINEERING

AN INTRODUCTION
SECOND EDITION
BY
TOM HALPIN



A tale from the Pet Clinic multi-verse

Foreword by Dr. Padma Roy

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The team, now faced with the challenge of improving Product Engineering practices within the Universal Imports Group, are considering applying the techniques learnt during the workshop to help scale Product Engineering practices across the Universal Imports Group.

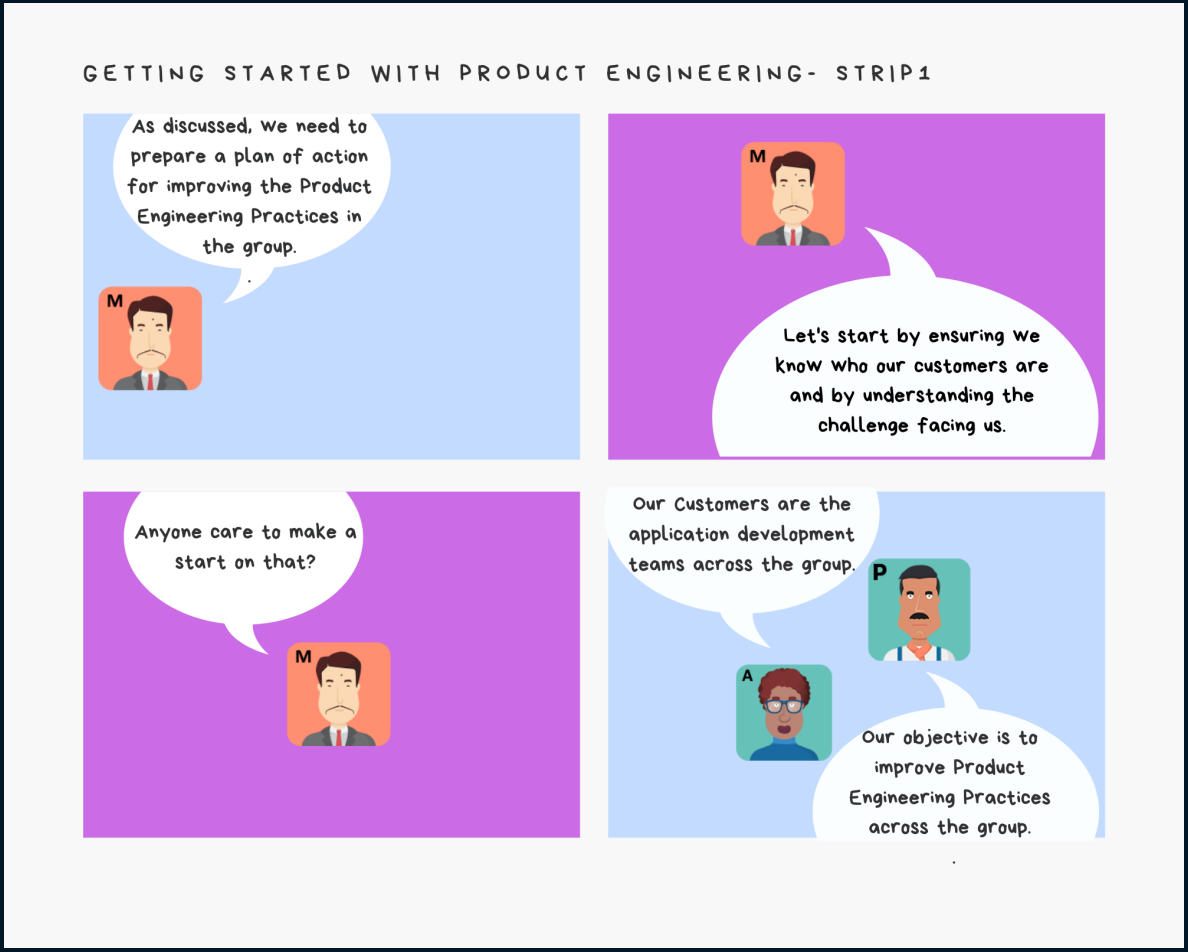
This chapter covers the ensuing discussions and the actions arising from those discussions.

The team involved in the discussions are

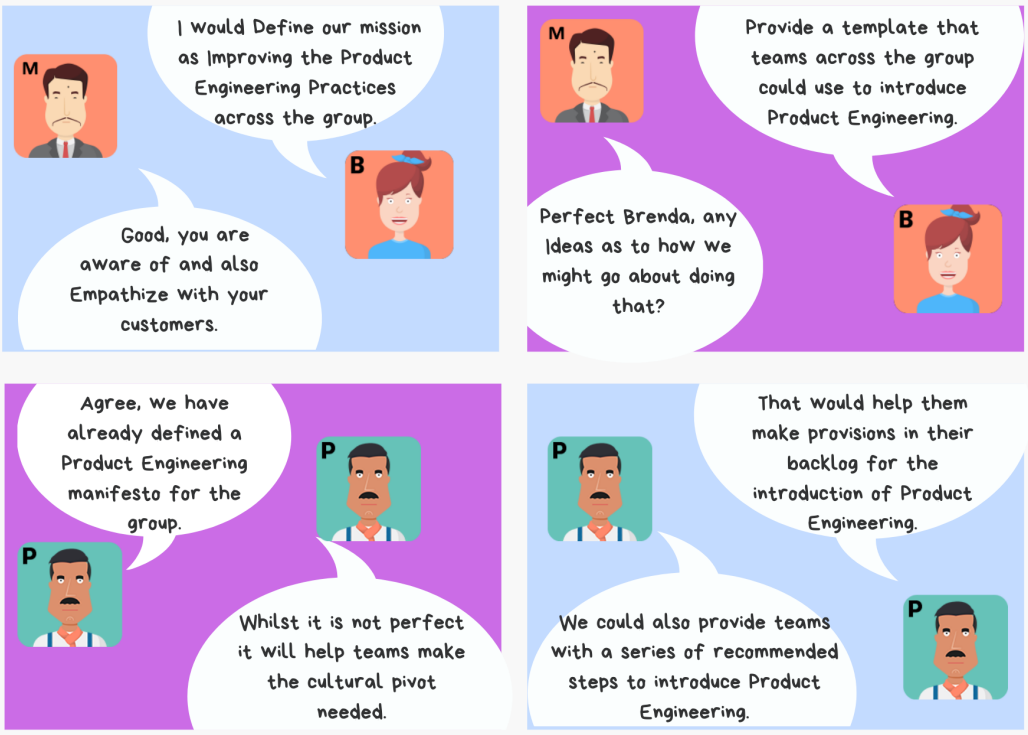
	**Miyagi** Product Engineering Coach and Mentor, tasked with increasing the use of Product Engineering within the Universal Imports Group.
	**Pennyworth** Project Manager from The Daily Mentioner National Newspaper tasked with chairing the effort.
	**Adriana** Architect from the InGen Space Exploration Company lending her expertise to the Product Engineering effort.
	**Paulo** Product Owner for the Pet Clinic Application.
	**Brenda** Business representative from the Pet Clinic, who was the main Business champion of the DevOps transformation.

Improving Product Engineering Practices at Scale

The team discusses how to scale the improvement of Product Engineering practices in the Universal Imports Group.



GETTING STARTED WITH PRODUCT ENGINEERING- STRIP1



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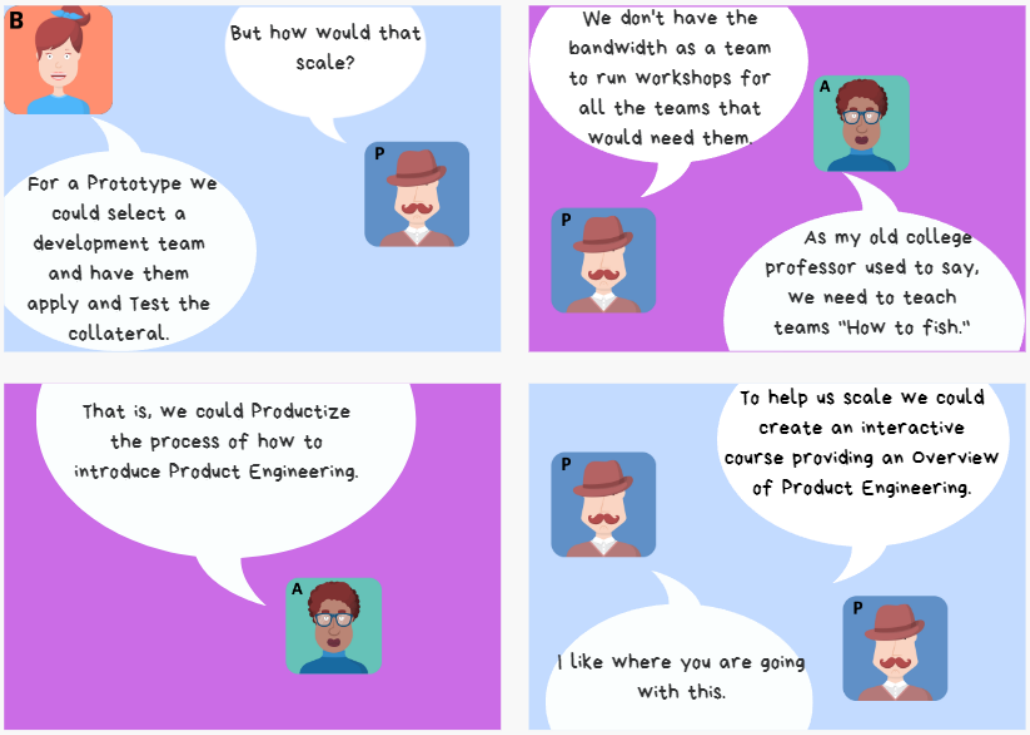

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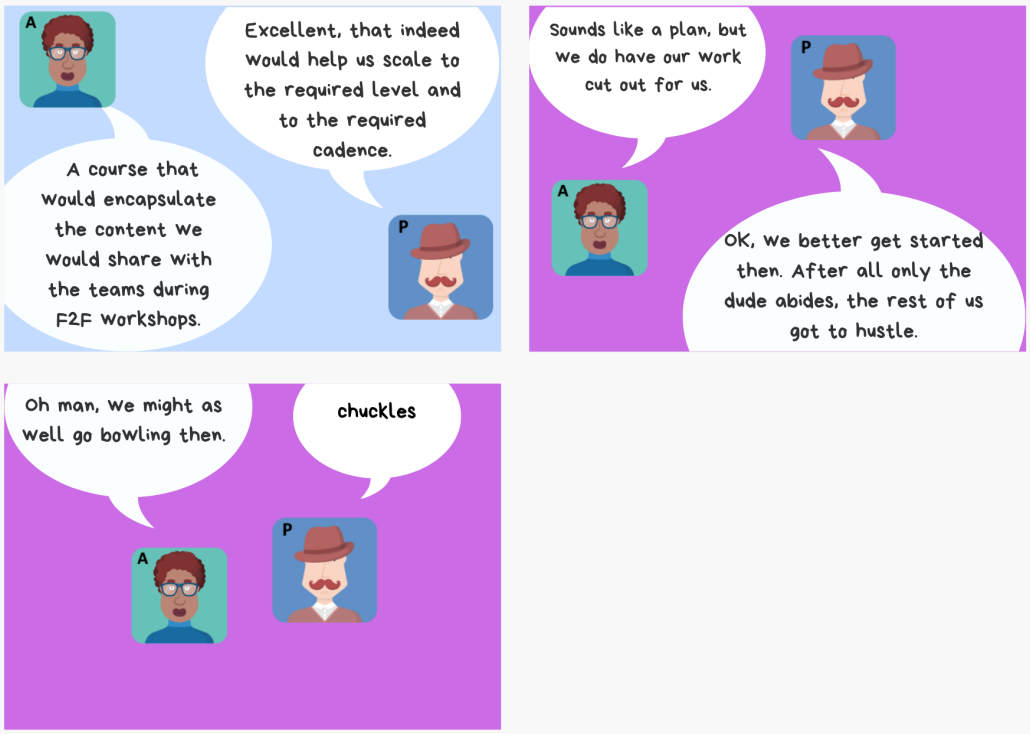

Build Product Squads

We in the Universal Imports Group want to build the best possible products.

To do that I suggest we should first invest time, energy and budget in to building the best engineering teams that we can. Then we need to make additional investments to support those teams ensuring we foster accountability, creativity and also encourage experimentation.

Simply put stronger engineering teams will build better products.

Miyagi any suggestions as to how we might go about doing this?

The structure and culture I recommend for Product Engineering teams is known as the "Product Squad" a concept popularized by Spotify.

Product squads are cross-functional teams comprised of a small number of developers and a product owner. Product squads own a complete product or a specific functional area of a product line, they are also responsible for developing domain expertise in support of an organizations product portfolio.

I am sure you are thinking that sounds remarkably similar to Agile scrum teams.

Afterword

The **Product Engineering: An Introduction** eBook is intended to enhance the understanding and application of product engineering practices to software development; through the use of storytelling and real-world scenarios involving a fictional team. The hope being to make learning process engaging and practical.

In closing, this collection of chapter summaries and key takeaways revisits the core insights and lessons presented throughout the **Product Engineering An Introduction** eBook.

Chapter Summaries and Key Takeaways

Chapter 1: Welcome

Synopsis:

The welcome chapter sets the stage for the eBook by introducing its purpose, structure, and the fictional team that will be used to illustrate key concepts. It outlines the main objectives of the book and what readers can expect to learn.

Key Takeaways:

- Understanding the scope and goals of the eBook.
- Identifying the intended audience.
- Setting expectations for the learning journey.
- Overview of the structure and content.
- Introduction to the concept of Product Engineering.

Chapter 2: Introduction to Product Engineering

Synopsis:

This chapter introduces the fundamental concepts of product engineering, emphasizing its importance in modern software development. It covers the lifecycle of product engineering from ideation, design, development, testing, deployment and maintenance.

Key Takeaways:

- Understanding the holistic nature of product engineering.
- Key principles and practices involved.

- Benefits over traditional engineering methods.
- The role of culture in successful implementation.

Chapter 3: Design Thinking

Synopsis:

Focusing on design thinking, this chapter explains how to adopt a user-centric approach to product development to drive innovation and user-centric solutions. It details the Design Thinking phases of empathize, define, ideate, prototype, and test.

Key Takeaways:

- Steps and stages in the Design Thinking process.
- How Design Thinking enhances product development.
- The importance of empathizing with users to identify their needs.
- Iterative prototyping and testing to refine products.
- Techniques for fostering creativity and innovation.
- Integration of Design Thinking in Product Engineering.

Chapter 4: Getting Started with Product Engineering

Synopsis:

This chapter provides practical steps to introduce product engineering in an organization. It includes guidance on setting up teams, defining roles, and establishing processes.

Key Takeaways:

- Initial steps to start with Product Engineering.

- Strategies for assembling a cross-functional product engineering team.
- Key roles and responsibilities within a product engineering team.
- Steps to implement product engineering practices effectively.
- Overcoming common challenges.
- Tips for continuous improvement and scaling.