PLM Interest Group

PLM Handbook for SMEs

A practical and easy-to-use Handbook that explains PLM from the SME viewpoint, and provides a methodology that enables an SME to apply it.

This is not a book, or theoretical treatise. It is a hands-on instruction manual for small and medium-sized businesses to adopt PLM effectively.

Roger Tempest, PLMIG Co-Founder

0 Executive Summary

This is a simple and straightforward *PLM Handbook for SMEs*. It explains the subject from a small- or medium-sized business perspective, dispels some of the myths and errors that exist, and sets out a methodology for mastering the subject.

SMEs looking at PLM for the first time will find no shortage of technical advice - the Internet has lots of it, and as soon as you approach a vendor to discuss buying some PLM software, you will get a lot more.

Almost all of this will be generic or proprietary. All of it will be advice that is aimed at large companies.

For an SME, the CEO as well as the potential hands-on PLM Project Manager will need to make sense of this, and understand how it all applies to their own specific business. That is the purpose of this *Handbook*.

It is designed to be read by the CEO (or whichever VP is assigned to head up PLM); as well as the PLM Project Manager (the technical person tasked with "doing PLM"). It acts as an interface that lets an SME engage accurately with the wider world of PLM.

Eventually you will want to make the investment - to spend money on PLM improvements and software, that you want to be useful and effective. By reading the *Handbook* first, following the logic and doing the preparation, you will find that all of the generic and proprietary information falls into place.

The *Handbook* is also useful for SMEs that have started on PLM, and want to cross-check to see if they are going in the right direction.

The *Handbook* has a clear and logical structure that begins with Preparation to understand the overall PLM context. It then describes how SMEs can relate to PLM so that they can start their journey from the right place.

There is a detailed list of Instructions that guide the PLM Project Manager through the work that will be required in order to define and complete the investigation; and guidelines on how to apply PLM, and on some advanced subjects to consider.

This is not an encyclopaedia - a full written explanation of PLM would run to many hundreds of pages, and would be unusable for an SME. SMEs need concise, accurate information that they can process quickly and act on easily. That is what the *PLM Handbook for SMEs* provides.

However, the *Handbook is* an instruction book, and not a just a casual read, so the Sections are numbered for easier navigation and use.

© PLMIG 2022

Table of Contents

0 Executive Summary 1

About This Handbook **5**

1 Introduction 6
- 1.1 Background 6
- 1.2 Handbook Premise 6
- 1.3 Handbook Methodology 7
- 1.4 PLMIG Q&A 7

Part 1: Preparation **9**

2 Forewarned is Forearmed 10

3 Why PLM is Important for SMEs 11
- 3.1 The Economic Value of SMEs 11
- 3.2 Modern Techniques and Methods 11
- 3.3 Integrated Economy 11
- 3.4 Effective Operation 12
  - 3.4.1 Overview 12
  - 3.4.2 Where is the Data? 12
- 3.5 Advanced Development 13

Part 2: How SMEs Can Understand PLM **15**

4 What Is PLM? 16
- 4.1 Origins of PLM 16
- 4.2 Standard PLM Definitions 16
- 4.3 The Essence of PLM 17
- 4.4 PLM in My Company 17
- 4.5 The PLMIG Definition of PLM 18

5 Common Misconceptions 20
- 5.1 How Large Corporations See PLM 20
- 5.2 What the SME Sees 20

6 Benefits of PLM 21

7 Ecosystem Before Software 22
- 7.1 Wide Horizons 22
- 7.2 What Is Your Ecosystem? 22
- 7.3 PLM is Everywhere 23

© PLMIG 2022

Part 3: PLM Instruction Book **25**

8 PLM Methodology Overview 26
8.1 Basic Rules 26
8.1.1 Speak the PLM Language 26
8.1.2 Remember the 'Enterprise Context' 26
8.2 SME PLM Checklist 27

9 SME PLM Instructions 28
9.1 Step 1: Owner / Board Convinced of PLM 28
9.2 Step 2: CEO / First Reports Understand PLM 28
9.3 Step 3; Establish the Management Mechanism 28
9.4 Step 4: Define and Allocate Responsibilities 29
9.5 Step 5: Map Processes 29
9.6 Step 6: Establish PLM Awareness 30
9.7 Step 7: Confirm the 'Stage/Gate' Mechanism 30
9.8 Step 8: Work Through the 16 Axes 31
9.8.1 Strategy 32
9.8.2 Portfolio Management 32
9.8.3 Business Management 32
9.8.4 Collaborative Product Development 32
9.8.5 Innovation 32
9.8.6 New Product Development and Introduction 33
9.8.7 Manufacturing 33
9.8.8 Product Support and Service 33
9.8.9 Maintenance 33
9.8.10 Quality 33
9.8.11 Lifecycle Management 33
9.8.12 Technology / IT Platform 34
9.8.13 Operational Performance 34
9.8.14 Financial Performance 34
9.8.15 Knowledge and Skills Management 34
9.8.16 Regulatory Compliance 34

Part 4: How to Apply PLM **35**

10 How to Apply PLM 36
10.1 Status Check 36
10.2 SME Fundamentals 37
10.2.1 Use of Advisers 37
10.2.2 80:20 Rule 37
10.2.3 Management Mechanism 37
10.2.4 Project Set-Up 38
10.3 Standard Adoption Methodology 38
10.4 External Sources of Information 39
10.4.1 PLMIG Toolkits and Best Practice 39
10.4.2 Other Information Sources 39

© PLMIG 2022

Part 5: Advanced PLM Subjects **41**

11 Advanced PLM Subjects 42
11.1 Terminology Translator 42
11.1.1 BOM / Bill of Materials 42
11.1.2 Legacy Systems 42
11.1.3 PDM 42
11.1.4 Process Map 43
11.1.5 Servitization 43
11.1.6 Stage/Gate 43
11.1.7 Steering Committee 43
11.1.8 Vision Statement 43
11.2 PLM Concept Set 44
11.3 Digital Transformation 45
11.4 Documentation 46
11.5 Full PLM Maturity 46

Appendix **47**

12 Terms and Conditions 48
12.1 PLM Handbook for SMEs Ownership and Use 48
12.2 Disclaimer 48

© PLMIG 2022