



PLM Interest Group

PLM Maturity Manual

A comprehensive manual that explains the intricacies of PLM Maturity and how to assess it, in a way that presents clear and useable findings.

This is not a book, or theoretical treatise. It is a hands-on instruction manual for evaluating PLM Maturity and using it to generate accurate roadmaps.

Roger Tempest, PLMIG Co-Founder

Foreword

The concept of PLM Maturity has been around for more than a decade, and has formed into a general idea that if you choose 5 Levels of maturity progression, and write down how you perform against them, you will find a 'Maturity Score' for your company.

In fact this does not work. The subject of 'Maturity' in general breaks down into much more detail than this; and when it is applied to PLM it becomes even more complex. You must decide whether to measure absolute or relative maturity; choose levels that match the way that PLM develops; and break down each score into subdivisions that apply to the way that PLM is enacted.

The only way to treat the subject is thoroughly, and that is what this Manual sets out to do.

Accurate measurement of PLM Maturity is important for three reasons:-

1. Many companies have been working on PLM for more than a decade, with no clear indication of progress. The ability to quantify PLM Maturity will enable them to demonstrate their progress in graphical and numerical terms, and hence will show how much more of the journey is still to be travelled.
2. The industry as a whole has no central idea of what “completed PLM” entails, apart from the fact that it will be digitally connected. The concept of **Full PLM Maturity** (as defined in this Manual) provides this vision in a way that is straightforward and easy to understand.
3. The most effective method for long-term roadmapping is to understand the strengths and weaknesses of the current maturity situation and to plan towards Full Maturity.

The first step towards understanding PLM Maturity is to evaluate your own, as it is now, and the *PLM Maturity Manual* enables you to do this.

0 Executive Summary

This *PLM Maturity Manual* enables PLM practitioners to understand and measure the maturity of any PLM implementation.

PLM does not lend itself to Maturity assessment by generic methods. Conventional, widely-used scales of maturity level from 1-5 do not apply properly to PLM; and conventional metrics fail to provide adequate granularity in terms of the analysis. For a PLM environment, most methodologies are insufficiently precise about the scope and perimeter of interest, and fail even to define the type of maturity that is being measured.

This *Manual* contains a comprehensive Maturity assessment methodology that is designed specifically for PLM, together with wider explanations of the subject material and how to use it for analysis and roadmapping.

The Manual begins by explaining the main issues of PLM Maturity to establish the context; and describes two alternative scales, or metric criteria, against which Maturity can be scored.

The original *PLM Maturity Manual* set out two possible methods of carrying out the assessment:- Activity-Based, or Structure-Based. This Version focuses on the Activity-Based method, which leads seamlessly into roadmapping and planning; and provides more detailed text to guide the user through the process. The Structure-Based method, (plus some other frameworks that have been proposed in the past) are covered in appendices for those who would like to use them.

Every organisation will apply the Maturity Assessment in its own context, recording its own scores, and generating its own Roadmap and follow-on projects from the results.

It is important to understand and adhere to this, because:-

- (a) there are no general external standards of PLM Maturity that you could compare yourself to; and,
- (b) the main benefit of understanding your PLM Maturity is to be able to put in place a set of follow-on improvement actions, and these will be specific to your own implementation.

This *PLM Maturity Manual* contains a self-contained set of instructions that any PLM Team can apply to define their current situation and create Roadmaps for future project approval.

Table of Contents

Foreword	1
0 Executive Summary	2
About This Toolkit	7
1 Introduction.....	8
1.1 Background	8
1.2 Use Cases	9
1.3 Manual Premise	9
1.4 Structure of the Manual.....	10
1.5 PLMIG Q&A	10
2 Definitions.....	11
2.1 Product Lifecycle Management (PLM).....	11
2.1.1 Descriptive Definition	11
2.1.2 Functional Definition	11
2.2 Perimeter of Interest	12
2.3 PLM Permeation	12
2.4 PLM Traction.....	12
3 How to Use this Manual	13
Part 1: Maturity Fundamentals	15
4 What is PLM Maturity?	16
4.1 Overview	16
4.2 Maturity, not Capability	16
4.3 Possible Maturity Parameters.....	17
4.3.1 Full PLM.....	17
4.3.2 Evolving Scale.....	17
4.3.3 Industry Factors	17
4.3.4 Organisation Factors.....	17
4.3.5 Product Development Position.....	17
4.3.6 Lifecycle Position	18
4.4 Full PLM Maturity - Definition.....	18
5 PLM Maturity Levels.....	19
5.1 Overview	19
5.2 “Standard” Scale	20
5.3 PLM Scale.....	21
5.3.1 Scale Boundaries	21
5.3.2 Low-End Maturity Levels.....	22
5.3.3 Working Maturity Levels.....	23
5.3.4 Future Maturity Levels	24
5.4 Scale Subdivisions.....	25
6 Maturity Permeation	26
6.1 Maturity Development	26
6.2 Lights Out / Lights On	26

Part 2: Maturity Methodology	27
7 Maturity Assessment Methodologies	28
7.1 Overview	28
7.2 Activity-Based Method	28
7.3 Structure-Based Method	29
7.4 Choosing the Method	29
8 Maturity Methodology: Activity-Based	30
8.1 Overview	30
8.2 Basic Principles	30
8.3 Aim	31
8.4 Iteration	31
8.5 What You Need to Know	31
8.6 Positioning	32
8.7 Setting the Parameters	33
8.7.1 Choosing the Perimeter of Interest	33
8.7.1.1 CAE Example	33
8.7.1.2 Supply Chain Example	34
8.7.2 Choosing the Metric Axes	34
8.8 Compiling the Maturity Score	36
8.8.1 Position	36
8.8.2 Focal Points	36
8.8.3 Perimeter of Interest	36
8.8.4 Maturity Levels	37
8.8.5 Axes	37
8.8.6 Assessment	37
8.8.7 Scoring	37
8.9 Review / Action	38
8.9.1 Documentation	38
8.9.2 Presentation	38
8.9.3 Next Steps	38
Part 3: Presentation of Results	39
9 Presentation of Results	40
9.1 Core Documentation	40
9.2 Maturity Assessment Report	41
9.2.1 Document Structure	41
9.2.2 Level of Detail	42
9.2.3 Presentation of Results	42
9.2.4 Discussion of Results	43
Part 4: Roadmapping	45
10 Roadmapping Methodology	46
10.1 Quick Wins	46
10.2 Roadmapping Overview	46
10.3 Fundamentals	47
10.4 Common Questions	48
10.5 Principle	49
10.6 PLM Roadmap Document	50
10.7 Maintaining the Roadmap	51

Class A PLM	53
11 Integration with Class A PLM	54
Appendix 1: Structure-Based Maturity Methodology	55
12 Maturity Model: Structure-Based	56
12.1 Overview	56
12.2 Structure-Based Matrix	57
12.2.1 Basic Matrix.....	57
12.2.2 Extending the Matrix [1]	58
12.2.3 Extending the Matrix [2]	59
12.2.4 Displaying the Initial Results	60
12.2.5 Spreadsheet Structure	61
12.2.6 Analysing the Detailed Results	61
12.2.7 Analysis by Function	62
12.2.8 Analysis by PLM Element	63
12.3 Compiling the Maturity Score.....	63
12.4 Detailing the Maturity Score.....	64
12.5 CAE Example.....	65
Appendix 2: Other Roadmapping Techniques	67
13 Three Alternative Options	68
13.1 Option 1	68
13.2 Option 2	69
13.3 Option 3	70
Terms and Conditions	71
14 Terms and Conditions	72
14.1 PLM Maturity Manual Ownership and Use	72
14.2 Disclaimer	72