Assessing the Documentation Development Effort in Software Projects

Isaac Sánchez-Rosado, Pablo Rodríguez-Soria, Borja Martín-Herrera,
Juan José Cuadrado-Gallego, Javier Martínez-Herráiz, and Alfonso González

CuBIT, Software Measurement Laboratory
Dep. of Computer Science / University of Alcalá, Madrid, Spain
Lab.N33, Edificio Politécnico, Autovía A2, Km. 31, 28805,
Alcalá de Henares, Madrid, Spain
`{pablo.rsoria,borja.martinh,jjcg,josej.martinez}@uah.es`

Abstract. From the initial stages of software engineering, one of the most important practices to be carried out during the software development is a good documentation generation. Since then, this has become more and more important in the overall process of software production of any company, especially for those that have or are trying to achieve higher maturity levels. So for those organizations with a maturity level higher than CMMI level 2, or those that have to comply with the IS0 9000-3 standard, the elaboration and revision of all the components included in the project documentation need an appreciable effort from the development teams.

This means that the effort estimation models will adjust this effort driver, to the most accurate precision, in order to obtain correct estimates, which will be used generically and in local environments.

In order to do so, we have defined an experiment with the following objectives: To obtain the relationship between documentation effort and total development effort and to obtain updated factors for software documentation, according to the latest documentation standards and software development techniques.

Keywords: Software Documentation, effort estimation models, cost drivers.

1 Introduction

In addition to the fine-tuning equations and research in new and better calibration methods, one of the main factors in the improvement of parametric models dealing with effort estimation, is the continuous revision of the cost estimators. This revision will imply not only adding or removing cost estimators to reflect changes in future technology and the methods used to produce software, but also thorough knowledge of those selected.

One of the aspects that has gained significant importance in the software development projects, is documentation. At first, this aspect was only considered in a few estimation models, such as SLICE [8] or NAVAIR [3]. The importance of this factor has progressively increased. This means that the resources, and consequently the

7. Jensen, R.W.: A Comparison of the Jensen and COCOMO Schedule and Cost Estimation Models. In: Proceedings of the International Society of Parametric Analysts, April 1983, pp. 96–106 (1983)
8. Kustanowitz, A.L.: System Life Cycle Estimation (SLICE): A new approach to estimating resources for application program development. In: Proceedings of the IEEE COMSAC (1977)
9. PRICE-S Reference Manual, Version 3.0, Mt Laurel, NJ, Lockheed - Martin (1997)
10. Manager's Handbook for Software Development. Revision 1. Software Engineering Laboratory Series. SEL-84-101
11. Software Measurement Guide Book. Revision 1. Software Engineering Laboratory Series. NASA-GB-001-94 (June 1995)
12. Software Process Improvement Book. Revision 1. Software Engineering Laboratory Series. NASA-GB-001-95 (March 1996)
13. Putnam, L.H., Myers, W.: Measures for Excellence. Yourdon Press Computing Series (1992)
14. SEER-SEM User's Manual Release 4.5, El Segundo, CA, G.A. SEER Technologies (December 1998)
15. United Kingdom Software Metrics Association (UKSMA). MK II Function Point Analysis. Counting Practices Manual Version 1.3.1