

Part 2

Uses for Rationale

One of the major stumbling blocks in rationale research has been the fear that rationale may not be worth the cost of its capture. With the continuing emphasis on software quality and process improvement, the development community has become more aware that software development is not only about producing code and that the upfront costs of a more rigorous process result in downstream savings. The question is, how can the rationale be used and do the uses justify its cost?

The first use that comes to mind for rationale is the most simple—presenting the rationale to the software developer or maintainer when they need it. The presentation of rationale (Chapter 6) helps the developer learn about the software and the criteria that guided its development, and helps them to avoid errors in future decisions.

Rationale supports the ability to evaluate decisions (Chapter 7) to ensure that the choices made during development are the ones that best meet the needs of the system stakeholders. The importance of this evaluation is highlighted in the CMMI's inclusion of the Decision Analysis and Resolution process area (CMMI Team 2006).

Software development is a highly collaborative process since most systems are well outside the size and scope where they can be developed by only a few people. The support for collaboration provided by rationale (Chapter 8) has been demonstrated by field studies (Conklin and Burgess-Yakemovic 1991) and was highlighted in a talk on collaboration presented at the Future of SE track of the 2007 International Conference on SE (Whitehead 2007).

Unlike with hardware, software engineering rationale can be directly connected to the artifacts that it describes. These connections allow rationale to support change analysis (Chapter 9) by identifying interdecision dependencies and showing the developer how changes in decisions affect the software. This, and the other uses described in this chapter, clearly indicates that rationale has the potential to provide software development assistance that far outweighs the cost and effort required to capture it.