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Citations of "Software maintenance and evolution: a roadmap"

- Introduction It is widely acknowledged that software maintenance occupies a large fraction of the software development cycle [2, 24], where maintenance includes modifying, extending, debugging, testing, and documenting the application.
- The arguments raised in [4] might point to a solution.
- Hence, whether a system is kept in evolution or downgraded to the servicing stage [4] is a managerial decision.
- For comprehending this aspect of software evolution, empirical knowledge about process and human aspects is still needed [5].
- Introduction and rationale Over the years studies of industrially evolved software have contributed to a body of knowledge of the software evolution phenomenon [1, 3, 14, 15, 16].
- These sheets are subject to similar evolutionary patterns of possibly staged maintenance [3] as conventional software of comparable strategic importance.
- For instance, the object-orientation, often considered the "solution for the software maintenance" [1], created new problems for the maintenance [4] and should be used with very care to assure that the maintenance will not be more problematic than in the traditional legacy systems.
- I. INTRODUCTION Understanding the rationale and design knowledge of a software system is essential when maintaining or evolving the system [1].
- Therefore, as Bohner and Arnold [3] and Bennett and Rajlich [2] point out, a good software architecture should be evolvable, flexible.
- This makes it more and more difficult to evolve the program, and will most likely result in code decay [2].
- Generally, testing is the most time-consuming activity during software maintenance [1].
- Furthermore, it is reported that corrective changes account to only 21% of changes [2], so we cannot conclude that defects are the main reason for change.

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maintenance [2, 11, 14]."