

UNIT II

PROJECT LIFE CYCLE AND EFFORT ESTIMATION

12. A Parametric Productivity Model

COCOMO II: A Parametric Productivity Model

Constructive Cost Model II (COCOMO II) is a model that allows one to estimate the cost, effort, and schedule when planning a new software development activity. COCOMO II is the latest major extension to the original COCOMO (COCOMO 81) model published in 1981. It consists of three submodels, each one offering increased fidelity the further along one is in the project planning and design process. Listed in increasing fidelity, these sub models are called the Applications Composition, Early Design, and Post-architecture models.

COCOMO II can be used for the following major decision situations :

- Making investment or other financial decisions involving a software development effort
- Setting project budgets and schedules as a basis for planning and control
- Deciding on or negotiating tradeoffs among software cost, schedule, functionality, performance or quality factors
- Making software cost and schedule risk management decisions
- Deciding which parts of a software system to develop, reuse, lease, or purchase
- Making legacy software inventory decisions: what parts to modify, phase out, outsource, etc
- Setting mixed investment strategies to improve organization's software capability, via reuse, tools, process maturity, outsourcing, etc
- Deciding how to implement a process improvement strategy, such as that provided in the SEI CMM

The original COCOMO model was first published by Dr. Barry Boehm in 1981, and Reflected the software development practices of the day. In the ensuing decade and a half, software development techniques changed dramatically. These changes included a move

away from mainframe overnight batch processing to desktop-based real-time turnaround; a greatly increased

emphasis on reusing existing software and building new systems using off-the-shelf software components; and spending as much effort to design and manage the software development process as was once spent creating the software product.

These changes and others began to make applying the original COCOMO model problematic.

The solution to the problem was to reinvent the model for the 1990s. After several years and the combined efforts of USC-CSSE, ISR at UC Irvine, and the COCOMO II Project Affiliate