



COCOMO II

....the next step in software cost estimation....

COCOMO II is the modern update of the well-known COCOMO (COConstructive COSt MOdel) software cost estimation model originally published in 1981 by **Dr. Barry W. Boehm**, (currently Director of the *Center for Software Engineering* at USC). That first COCOMO model became the industry's most widely used cost estimation model. COCOMO II conserves the original COCOMO strengths, while addressing new and emerging software practices coming to the fore as the software industry moves into the 21st century.

FEATURES:

The new model offers estimating capability at **three levels of granularity**, capturing three stages of software development activity, and providing three levels of model precision:

Prototyping: Applications Composition model, input sized in **Object Points**.

Early Design: input sized in **source statements** or **Function Points**, with **7 cost drivers**.

Post-architecture: input sized in **source statements** or **Function Points**, with **17 cost drivers**.

Five Scale Factors based upon **1) project precedentedness, 2) development flexibility, 3) architecture/risk resolution, 4) team cohesion, and 5) development process maturity** replace previous development mode ratings of *organic, semi-detached, or embedded*.

Multiplicative Cost Drivers applied at the *component* level.

Reuse and Reengineering effects: added **Assessment & Assimilation** and **Software Understanding** increments
→ results in revised **Adaptation Adjustment Factor (AAF)**.

BENEFITS:

- **Reduced Risk of Inaccurate Estimates**
- **More Credible Sensitivity Analysis**
- **More Accurate Technology Investment Analysis**
- **Acceleration of Continuous Process Improvement**
- **Easier Compliance with Government Contract Data Reporting Requirements**

COCOMO II AFFILIATES PROGRAM:

Has the support of more than **two dozen leading** software development **companies and government organizations**, providing a solid foundation for further **improving and refining** the COCOMO II model.

USC Center for Software Engineering

USC COCOMO II.1997.1

is the latest official *University of Southern California* software implementation of the COCOMO II model, programmed by a development team led by **Dr. Ellis Horowitz**, Chairman of the Department of Computer Science at USC. It is available for three platforms: SUN OS, Java, and on **IBM**[®] compatible personal computers running *Microsoft* Windows95 or Windows NT.

USC COCOMO II.1997 is compact, requiring less than 720 kb of disk space for installation, and only 4 mb of RAM.

It is also *fast!* It performs its estimates in real-time, adjusting its figures as quickly as you can input data.

Its User Interface is based upon that of the USC-CSE implementation of COCOMO81, which in turn was based upon the *Component Level Estimating Form* (CLEF) originally published with Dr. Boehm's model in 1981, making the software easy to learn and simple to understand.

It offers report-making capabilities, and the ability to take "snap shots" of analyses in progress, allowing "what if" scenarios to be explored quickly and efficiently.

Most importantly, and new to the 1997.1 version, it provides an *automated* ability to calibrate the model to fit the actual software development experience of any given organization, allowing the model to be tuned in order to produce the most accurate estimates possible.

All of the above makes *USC COCOMO II.1997* a valuable tool both for costing and for understanding your future software applications.

The USC COCOMO II.1997 Software Graphical User Interface:

X	Module Name	Module Size	LABOR Rate (\$/month)	EAF	NOM PM DEV	EST PM DEV	PROD	COST	INST COST	FSWP	RISK
	Routing	S:27894	6500.00	1.16	140.9	164.1	170.0	1066814.30	38.2	6.1	0.7
	Assembly	F:69120	5800.00	0.93	349.2	324.8	212.8	1883838.14	27.3	12.0	0.0
	Packaging	A:16398	6100.00	1.88	82.9	156.1	105.1	952078.80	58.1	5.8	2.3

	EST	Sched	PROD	COST	INST	FSWP	RISK	
Total SLOC: 113412	Optimistic	516.0	25.0	219.8	3122184.99	27.5	20.7	
Effort (PM): 573.0	Most Likely	645.0	27.1	175.8	3902731.24	34.4	23.8	2.9
Productivity: 197.9	Pessimistic	806.3	29.3	140.7	4878414.05	43.0	27.5	

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