

Realistic Time Estimates Revisited ¹

Dr. Kenneth F. Smith, PMP

A recent (June 2020) PMWJ article by Dr. Benedict Amade² addressed the fact that PERT -- *Project Evaluation and Review Technique* -- is a fundamental tool for determining a schedule, but lamented that **most software do not perform computations on the probabilities of completing a project**; and presented a computerized template to resolve the problem.

The research, writeup, application and end product are commendable; but did not go far enough. An underlying issue -- namely that **the PERT formula *per se* is fundamentally flawed** -- was not addressed or resolved. My Oct 2019 PMWJ article³ addressed *that* issue, presented a modification to the PERT formula to encourage more realistic consideration when scheduling, and illustrated a user-friendly template highlighting the difference.



However, after reading Dr. Amade's article and reviewing my own, I realized that I too had not paid sufficient attention to the needs of the client, manager or scheduler to know the probability of completing a project or an individual activity, and be able to appreciate its impact. Consequently, I reworked my template to facilitate consideration of these aspects, as illustrated on the following page.

This upgraded template not only provides users with the probabilities of any unrealistic deadlines they may consider, but also highlights the extremely low probabilities of traditional 'Optimistic,' 'Most Likely' or even 'PERT' duration estimates. This revelation reemphasizes the reason why traditional approaches to estimating schedules have had such a dismal record, and are predestined to fall short of expectation unless & until more reasonable targets are adopted to address this pernicious problem.

¹ How to cite this article: Smith, K. (2020). Realistic Time Estimates Revisited, *PM World Journal*, Vol. IX, Issue VIII, August.

² Amade, B. (2020). A Computer Based Approach for Determining the Probability of Completing a Project at a Certain Due Date; *PM World Journal*, Vol. IX, Issue VI, June.

³Smith, K.F. (2019). Estimating Realistic Activity Times: A Critical Pseudoscience Problem and Workaround Solution, *PM World Journal*, Vol. VIII, Issue IX, October.

ESTIMATING ACTIVITY DURATIONS FOR PLANNING & SCHEDULING UNDER CONDITIONS OF UNCERTAINTY								
© 2020, 2016 Dr. Kenneth F. Smith, PMP (kenfsmith@aol.com)								
NOTE: The Probability of SURVIVING Russian Roulette is 83% !						Successful Scheduling Is the Art of reconciling the Possible with the Probable; the Desirable with the Doable.		Crispin Piney's Formula
THE PERT FORMULA (Opt + 4 ML + Pess) / 6				PERT's Expected Duration is ONLY a 50% PROBABILITY of Completing the Activity On-Time	Dr. Ken's REALISTIC FORMULA PERT + 2ESDs* = 95.44% PROBABILITY of On-Time Completion *where 1ESD = (Pess - Opt)/6	Your Client's, Your Boss's, or Your DEADLINE		PERT + 2((P-PERT)/3) Includes Buffer for "Unknown Unknowns" 99%
ENTER Activity Optimistic, Most Likely & Pessimistic Time Estimates (for up to 400 Activities) in the YELLOW Cells Below. NEXT, ENTER YOUR DESIRABLE DURATION (by 'trial & error') in the YELLOW Cells at the right to see the Probability of completing an Activity in the time YOU WANT, compared to other formulas.							Probability of being completed when you want it. [Rounded]	
Activity #	OPTIMISTIC (O) BEST CASE	MOST LIKELY (ML) TIME	MURPHY'S LAW PESSIMISTIC	EXPECTED DURATION	REALISTIC DURATION	YOU WANT IT WHEN?!	 %	XPERT DURATION
1	5	15	40	17.50	29.17	29	98%	32.50
2	2	10	25	11.17	18.83	12	58%	20.39
3	4	8	24	10.00	16.67	8	28%	19.33
4	10	18	80	27.00	50.33	10	7%	62.33
5	7	14	21	14.00	18.67	14	50%	18.67
6	5	10	15	10.00	13.33	13	96%	13.33
7				0.00	0.00	0	#N/A	0.00
8				0.00	0.00	0	#N/A	0.00

FYI, I did reach out to Dr. Amade and shared my upgraded template with him, in the hope that he will incorporate the concepts in his template, and/or use it “as is” to supplement his work and that of his students. It is reproduced here for the enlightenment of PMWJ readers.

About the Author



Dr. Kenneth Smith

Honolulu, Hawaii



Dr. Kenneth F. Smith was a project management consultant for ADB, the World Bank, and USAID for decades. He earned his DPA (Doctor of Public Administration) from the George Mason University (GMU) in Virginia and his MS from Massachusetts Institute of Technology (MIT Systems Analysis Fellow, Center for Advanced Engineering Study). A long-time member of the Project Management Institute (PMI) and IPMA-USA, Dr. Smith is a Certified Project Management Professional (PMP®) and a member of the PMI®-Honolulu Chapter.

Ken's book -- [Project Management PRAXIS](#) (available from Amazon) -- includes many other innovative project management tools & techniques; and describes a “**Toolkit**” of related templates available directly from him at kenfsmith@aol.com.