Inter-Office Memorandum

To	SD Managers	Date	July 23, 1977
From	Charles Simonyi	Location	Palo Alto
Subject	Diamond schedule	Organization	SDD/SD

XEROX

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Recently, I have received a number of enquiries about the Diamond schedule. Because the situation is both complex and changing, the following summary may be useful.

The original schedule, as discussed during the 1976 November review, called for an internal *staging* of an Early Bird test in October, 1977 and an external test in December, 1977. The only intermediate checkpoint was the demonstration of the precisely defined Minimum Milepost, set for January, 1977.

The Minimum Milepost code production goals were in fact obtained, with very little variance in contents from original plans, sometime in March, 1977. This slippage of about 2.5-3 months was reported in my April progress report.

Unfortunately, the run-time environment of this program did not permit an evaluation of the program's performance potential. In particular, observations of the behaviour of the test setup used by Diamond programmers should not be used for judging Diamond's performance.

The total size of the source code produced to-date is about 27600 lines (62900 characters). This compares unfavorably with Bravo's 35000 lines (74200 characters). Because Diamond has more features than Bravo and it also contains much more test code, its size will be at least 50000 lines.

A reasonably reliable way to prepare schedules, in my opinion, is to estimate the size of the code, measure productivity over a decent period and then obtain the time necessary for producing the estimated bulk. We recently developed or restored the tools for precise productivity measurement (Cr2, Bravo7).

Since April, the rate of production of Diamond code has slowed down to the point where extrapolating from current rates does not result in a meaningful schedule. For this reason, I have not published a revised schedule, although I made it clear that the current one is in jeopardy.

My plan for the immediate future is to improve programming productivity and run-time performance to the point where no further improvements would be expected or needed for 6-12 months. We may benefit from the improvements as early as September, 1977. By October, 1977 we may have a good idea of the maximum productivity which will be available to us in the forseeable future. A schedule will be published then.

For those interested in speculation, the missing 20000 lines of Diamond code *could* be produced in 20 man-months at little over 5 lines/man-hour. Assuming 4 months and 5 programmers available for the task, completion by the original December deadline is not out of the question. However, obtaining the required productivity by September may be very difficult indeed.