

SOFTWARE ENGINEERING MANAGEMENT FOR PRODUCTIVITY AND QUALITY

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Since the advent of electronic computers, people have struggled to develop effective software engineering processes. While these processes are similar to those used by hardware engineers, the software industry has earned a reputation for late delivery of inadequate products. Most software managers are looking for ways to deliver quality products faster, or with fewer resources. The development time and product outcome of the any software project is determined by four independent variables: the product characteristics, the people involved, the processes they use, and the underlying technology. In order to have an impact on the productivity of a software development effort, the manager must focus on and balance these areas. This paper will discuss classic mistakes and effective ways to improve productivity by using this approach. The discussion will include experience gained by the Controls Software Group at Thomas Jefferson National Accelerator Facility in the course of developing, maintaining and upgrading their lab-wide controls software based on the Experimental Physics and Industrial Control System (EPICS).