Unexpected Delays Equal a Chance to Innovate

BY HUGH WOODWARD

Sometimes a delay is the best thing that can happen to a project. While I was program manager, funding problems that slowed and threatened to cancel our plans to improve the efficiency of our paper manufacturing processes gave us time to prototype and test new technologies repeatedly. As a result, we developed solutions that were even better than our initial overconfident estimates of how well untried improvements would work.

It started like any other project. We had a scope statement, a diverse team, a list of interested contractors, and the enthusiastic support of management. We even had binders with an indexed list of the techniques deemed essential for successful projects: communication, change management, risk management, and all the others. Although we had challenging cost and schedule requirements, we knew we had an excellent plan. Nothing could prevent us from delivering this project on time and under budget. At least, that is what we thought!

The first hint of a problem came in the form of questions about our spending curve. The company was concerned about its overall capital spending and was looking for opportunities to delay major expenditures into the next fiscal year. We were able to oblige initially. We reassessed our schedule and proudly offered a new plan with the most expensive work deferred to late in the project. The best news was that we would still meet our original cost and schedule commitments.

Our excitement was short lived. No sooner had we submitted our new plan than we were asked to reduce early spending even more. In fact, each new plan drew the same request. Eventually, we had to admit we could no longer complete the project on time. That is when the second blow hit us. We were informed the project was no longer a top priority. In fact, some members of management wanted to cancel it. Morale within the project team plummeted. Just a few short weeks earlier, our project had been priority number one. Success was guaranteed. Now we were on the verge of being shut down.

Our project was intended to increase production by modifying twenty-one paper machines at four manufacturing plants located throughout the United States. We planned to install control devices designed to reduce defects and allow us to speed up the machines. Some of the technology was new, even unproven, but our technical experts assured us it would work. A "no brainer," they called it. We probably should have known better, but we didn't, and confidently developed a list of which devices were to be installed on which machines and how much additional production we could expect from each.

However, our sales volume was not developing as anticipated. As disappointing monthly sales reports continued to accumulate, management became increasingly reluctant to spend money on increasing production. Eventually we were ordered to put the project on hold but to be ready to restart at any moment.

It was time for a new strategy. Since we were no longer under a time constraint, we decided to reduce our risk by prototyping each of the technologies included in the original scope. We installed and tested each device on a different paper machine. To our surprise, some did not work as intended. Some produced unintended side effects that actually decreased production. But fortunately, not all were failures. Some worked much better than we expected, enabling us to increase

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The obvious solution at this point was to modify our scope. Clearly, we could achieve the same overall production increase by just installing the devices that worked best and abandoning the others. But an even better strategy began to emerge. As the technical experts analyzed the results of our prototypes, they came up with new ideas. The experts identified modifications that could work even better than the devices that had proven successful. So we prototyped these ideas, too. It no longer surprised us that some worked and some did not. The results prompted even more ideas.

To help generate more new ideas, we looked to the manufacturing plants. These plants have process engineers who continually work to improve efficiency. They collect loss data and then look for ways to reduce the most prevalent losses. In tissue manufacturing, for instance, the most significant loss almost always comes from "sheet breaks." The dry paper comes off the end of a paper machine at 4,000 feet per minute or more; when it breaks, the machine has to be shut down for several minutes while the mess is cleaned up. The process engineers try to identify and eliminate the causes of sheet breaks.

To encourage the development and propagation of successful ideas, my project team conducted its meetings at each of the manufacturing sites in turn. Our agenda at each meeting included presentations by the local process engineers of their problems and the ways they were solving them. Invariably, the visitors from other plants saw opportunities to apply the ideas at their plants, and we adopted them as part of our project.

Eventually, the company's sales began to recover and management started asking for increased production. By this time, we had a menu of proven technologies ready for installation. We were therefore able to quickly reapply the modifications that provided the best return on investment. We now had a proven strategy, and we resisted the temptation to deviate. We continued to encourage new ideas, but insisted on testing them on a single paper machine before declaring them ready for reapplication.

We eventually ran out of money five years after the project was initially authorized, and more than three years after our original completion date. But by that time, we had achieved three times the production increase we had initially promised. We still had to complete the paperwork to explain why we changed the scope and missed our completion date, of course, but nobody really cared. The real project objective was to increase production at an affordable cost, and we had succeeded beyond our wildest dreams.

Real evidence of success came when the company asked us to submit paperwork for a new project. This time, we admitted our scope was a guess and sure to be wrong. But management did not care. They just told us to continue with the same approach and gave us the amount we requested. It was the easiest project approval I ever experienced.

If our project had not been delayed by funding problems, we would have fulfilled our initial cost and schedule commitments but produced only a fraction of the production increase we promised. Fortunately, we were able to turn those problems into an opportunity to develop and test innovative technology that far outperformed our initial expectations. And we delivered what the company really wanted: additional production at an affordable cost. ●

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