ADDING MULTI-PLANT FEATURES TO

A LARGE, INTEGRATED MANUFACTURING PACKAGE

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Whether buying a new software package or maintaining an already purchased system, program and database modifications to a third party vendor's application are a serious decision. Manufacturing software systems like Hewlett-Packard's MM/PM or ASK's MANMAN are large and complex, trying to be all things to all customers (almost). Even if a company buys software that "fits" its applications, the complexities of the changing environment require some small changes within the vendor's lead time. But really complicated modification projects are expensive to maintain as new enhanced "releases" become available.

If the vendor is definitely not going in a given customer's direction, that company must either modify the package and abandon new releases, change to another package or prepare to spend substantial funds and resources for on-going maintenance of the modifications within the vendor's new releases.

If planned modifications are something the vendor intends to do themselves (someday), then it may be okay to do drastic changes. The key to successful modification in anticipation of the vendor's moves is a very close contact with the vendor and its users groups.

This presentation is the story of one company's modifications to ASK's MANMAN system. It covers adding "Multi-Plant" features which were two releases ahead of the vendor, but which hopefully will "go away" when the vendor implements its more generic solution in a couple of years. It also shows how a two or three man team can leverage the thousand man years work of the vendor's R&D department, moving fast to solve unique problems while the vendor and its many customers agree on the best solution for all.

ASK released MANMAN/MFG on the HP3000 in the summer of 1978. MAN-MAN was originally written in IMAGE/Fortran on the HP2100/1000. During 1979, as the Financial software packages (named FINMAN I,II,and III)were produced, four updates to MANMAN/MFG were sent out to the tiny customer base. Anyone who had modified any programs found out quickly how to migrate through new releases. If ASK had kept up the three month release cycle, who knows where we'd be? But they didn't; they went to a twelve month release cycle by 1982.

Cameron Iron Works of Houston, Texas purchased the ASK MANMAN software in June, 1987. The Company was replacing large IBM mainframes running custom in-house manufacturing/financial software. Three hundred plus terminals in sites all over the oil producing states were to be replaced with "dumb PC's" networked to an HP3000.

ASK's software/hardware price and performance/fit were excellent for Cameron in most areas. Two major concerns were lack of adequate Multi-Plant features in the applications software and doubts about response time with 300 terminals. Cameron cut the number of terminals in half to solve the latter problem. Blanket Resources, also of Houston, was contracted to enhance the applications software.

Cameron and Blanket Resources worked closely with ASK, at the local Houston office and at Corporate, to learn which features would be added to the packages and when. Visits by Cameron and/or Blanket Resources to the ASK Users Group "Multi-Plant Common Interest Group" meeting in St. Louis in December, 1987 and "Multi-Plant Roadshow Seminar" in Chicago in September,1987 gave insights about what other ASK users wanted and when ASK would respond. Sessions at the MANMAN conference in San Jose in March, 1988 brought the Multi-Plant CIG up to date on the progress at Cameron.

Cameron Iron Works "went live" on all major aspects of MANMAN MFG, OMAR, A/P, and G/L on March 1, 1988. Here is a description of the environment and Modifications:

A 'multi-plant' environment can be described as a group of manufacturing plants with a common 'thread'. Any attempt to be more specific about the meaning of the term would make it invalid for any number of 'multi-plant' situations currently

operating in the business world. The 'common thread' could be a holding company (fixed assets), a managing entity (general ledger), a financial group (accounts payable, accounts receivable), a production management center (order management, purchasing, production planning), or a supplier (a plant and multiple distribution warehouses). It will take an enormous effort to satisfy every combination that could possibly exist.

The standard ASK package has been able to provide a common view of the financial state of a company with multiple plants through a single GL. The problem has been the fact that different plants had to lead separate lives. There was no means of centralizing any other function within the company. This created book keeping problems and made production planning and management very difficult. The material transfer between different plants had to be managed in a roundabout way. Centralized order management and production planning had to be done manually. It was not possible to order the same part from the same vendor for different plants and take advantage of quantity discounts. And the list went on and on.

The task to turn the ASK's manufacturing and financial packages into a Multi-plant package was made possible due to the fact that ASK is getting ready to have multi-plant capabilities. There are already 'inactivated hooks' throughout the system which just needed to be switched on. It also helped to have a specific company which had an already working definition of what the multi-plant system should look like. This limited definition enabled the project team to spend minimum amount of time studying the design requirements. The program modification and development started within 30 days after the start of the project.

The overriding guideline for the entire project was to stay within the realm of future ASK multi-plant features defined by ASK's own project documentation and the undocumented program hooks buried inside the seemingly 'single plant' packages. All designs had to fit within the framework of ASK's upcoming product enhancements so that the custom modifications could be phased out as they become vendor supported functions.

The modified system can have a single or multiple financial groups managing multiple manufacturing plants. Material transfer is possible and is tracked automatically through intercompany clearing accounts. Order entry is possible at the local plant level and also through centralized order management. Vendors are maintained in one database and paid for purchases by different plants with a single check. An overall view of bookings and shipments is possible making it feasible to observe

product trends and forecast accordingly. All this was possible without any changes to the transactions and utilities supplied by the vendor.

Under this scheme there are plants that manufacture and warehouses under these plants which act as distribution points. As far as the user is concerned, the visible differences from the unmodified ASK package are as follows:

A. A multi warehouse user is prompted for the warehouse number at the start of each command.

B. A multi-plant user is prompted for the plant when initially starting a session.

A single warehouse user will never be prompted for the above information. The only other difference is the interplant material transfer transactions which had to be developed in their entirety since there are no such functions currently offered by the software vendor. All the warehouse and plant switching is done by the software in the background freeing the user from determining which database they should be accessing.

The project was completed in shortest possible time due in part to the somewhat unique approach which enabled the users to interact with the designer/programmer directly. The completed programs were submitted to the requesting user for testing. Any bugs or enhancements were explained to the original programmer who also made the necessary changes. There was one project leader for design and implementation who was involved in all aspects of the decision making. There was also a project coordinator in charge of user/design team/operations team interface. There were at most seven individuals in the project team including the user testing group.

Originally it was decided that the documentation would be completed before any code modification was started, but it quickly became apparent that, since the users had the final word, any attempt at documentation would lead to hundreds of pages of obsolete information by the completion of the project. The users, not being familiar with the new package, would alter the specification upon the first execution of a modified or developed transaction. This method goes against the prevailing and accepted method of product development and modification. In practice, however, this approach was abandoned after a 40 page document had to be discarded before it was even submitted to the client company. The time required to produce the documentation was deemed better spent completing the requested program and submitting that to the user committee.

The Cameron/ASK/Blanket Resources MANMAN implementation is still in progress while this paper is being written in April, 1988. The speech to be delivered in Orlando in August will provide more details.

OUTLINE

I. Introduction

    A. History of ASK's MANMAN Software Releases

    B. History of Case Study Company

II. Fitting the Company to the Package - the Compromises

    A. Multi-Plant Environment

    B. The Standard ASK Package in Multi-Plant Environment

    C. The Modifications

    D. Implementation Events

III. Conclusions

    A. The Team Approach for Success

    B. Eleventh Hour Delivery Service

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