Service Planning at Cray Research

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ABSTRACT: *This paper will describe how Cray drives reliability, availability, and serviceability (RAS) into the product development process. It will also outline how Customer Service plans and tracks their readiness for support of new products.*

Overview

My presentation will cover the following four topic areas:

- The Three Service Planning Functions
- The Product Development Process
- The Service Readiness Process
- Sources of Service Planning Input

The Three Service Planning Functions

The Service & Business Planning Department (SBP) coordinates the technical and business-related aspects of service planning. The department's main functions can be grouped into three areas. The first two, *Product Management* and *Service Readiness* are both led by experienced technical planners with responsibility for individual product lines. The *Business Management* functions are provided by financial and marketing professionals who work closely with the technical planners.

Product Management -- RAS

Each technical planner works closely with engineering design teams to design reliability, availability, and serviceability (RAS) into new Cray Research products.

We can informally define the three RAS components as follows:

- *Reliability* means the product rarely fails
- *Availability* means that if it does fail, it can be restored to operation quickly, maximizing system availability
- *Serviceability* means the system can be serviced quickly and effectively

SBP developed a product-independent set of RAS requirements in 1994. The service planners use the broad RAS requirements as the basis for product-specific requirements for each new system being developed. They then work with the appropriate engineering teams from the concept phase through the design and development phases.

While we have had some success in improving the RAS capabilities of our systems, we are aware that our requirements have been too general to bring about the kinds of design changes we would like to see. As a result, improving our RAS requirements will be a key focus area for my department in 1996.

Service Readiness

Each technical planner serves as the service readiness coordinator for his or her product line(s). The planner tracks the efforts and deliverables of each major department in the Customer Service Division to ensure that we are ready to begin servicing a product when its initial systems are shipped. The process is managed through a series of *Service Readiness Reviews* which are detailed in a later section of this paper.

Business Management

The business side of SBP is responsible for the financial and marketing functions for service.

We are developing a new estimation model for the *cost of providing service*. (This is analogous to the accounting term *cost of goods sold*.) The technical planners use the cost estimates as leverage with engineering to reinforce the importance of RAS features in product design.

Our marketing functions include service pricing, the development of literature and other collateral for service, and competitive analysis.

Product Development Process

Overview of the Process

The Product Development Process (PDP) is used by Cray to manage new technical projects and ideas within the company. A Product Approval Committee (PAC) of senior executives leads the PDP and evaluates potential new Cray products.

New product ideas at Cray begin with a *Concept Evaluation Plan* which describes in moderate detail the new product being

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proposed and analyzes its potential in the marketplace. After PAC approval, a further study is authorized, leading to the *Integrated Business Plan (IBP).* The IBP is developed by the *Product Core Team* and includes coordinated information from all areas of the company: Hardware Engineering, Software Development, Marketing, Sales, and Customer Service.

The core team member for Customer Service is the technical planner from SBP. He or she leads a sub-team with representatives from each CS department. This team completes the Service Readiness Review process mentioned earlier.

By using the PDP, Cray divisions are full participants in the concept, design, development, and launch of each new product. It gives Customer Service a formal role from the earliest stages of product conceptualization through the first several customer shipments.

Service Readiness Process

Service Readiness Reviews (SRRs)

The SRR process is used to manage preparations within the Customer Service Division for new Cray products. The process includes four checkpoints at various stages of new product development.

The SRR-1 meeting serves as the formal start of our division's role in the development of a new Cray product. It is held soon after the PAC approves each IBP. It is an opportunity for each CS department to offer its list of deliverables for the new Cray product, and a preliminary schedule is usually developed in preparation for the review meeting.

The SRR-2 and SRR-3 meetings happen mid-way through and at the end of the development process, respectively. They include presentations by each department on the state of its deliverables, and it serves as a forum for resolving any open questions or issues within the division.

The SRR-P meeting happens after several customer shipments. It is a post-introduction examination of the SRR process for the new system. The main purpose of the SRR-P is to provide feedback on successes and areas for improvement that can be applied to other development efforts that are still underway.

Sources of Service Planning Input

The SBP department relies on many sources of ideas, information, and requirements for our planning efforts. We welcome customer requirements and receive them from direct interaction with customers and through forums like CUG. In addition, we receive a steady stream of information and requirements from the groups most directly connected with customers: our district service managers and our account managers.

We have also made significant improvements in our understanding and tracking of market requirements. We complete a competitive analysis project each year and subscribe to several service industry market information services.

The *Cray Advantage Service*℠ (CAS) program provides the structure for service offerings across the range of current and future Cray products. The flexible CAS packages give customers the opportunity to choose the right set of services to meet their needs. Since CAS is available on current products from the largest CRAY T90 to the smallest CRAY J90, it provides a common set of requirements that SBP can work to deliver across all products.

An Invitation

The Service & Business Planning department is striving to provide customers with the best combination of service and products available. We welcome your comments and ideas at any time. Please feel free to call or write to me at the address below if I can be of assistance.

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