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The Corporate Phase Review process is one of the principal tools used in the Company to help us plan, coordinate, manage, measure, and communicate during the life cycle of our products. We started using this process in the mid 1970's and over the years, it has been updated to incorporate new learnings and maintain congruency with how we do business.

The enclosed guide is a result of our continued effort to simplify the process, encourage more predictability, collaboration, flexibility, and discipline in product life cycle management. The specific changes we have made to the process are as follows:

1. Established Phase 1 exit as the Company's commitment to the product's function, cost and schedule.
2. Modified DEC STD 130 [Product Business Plan Requirement] and made the Phase 1 Business Plan the "Business Plan of Record" against which the business success of the product is measured.
3. Created a TOP 100 process, to provide more corporate visibility and management support for products critical to the Company's longer term survival.
4. Modified DEC STD 028 [Phase Review Policy] to clarify the intent of the process and articulate the Company's expectations of the roles played by the major functions involved in product life cycle management.

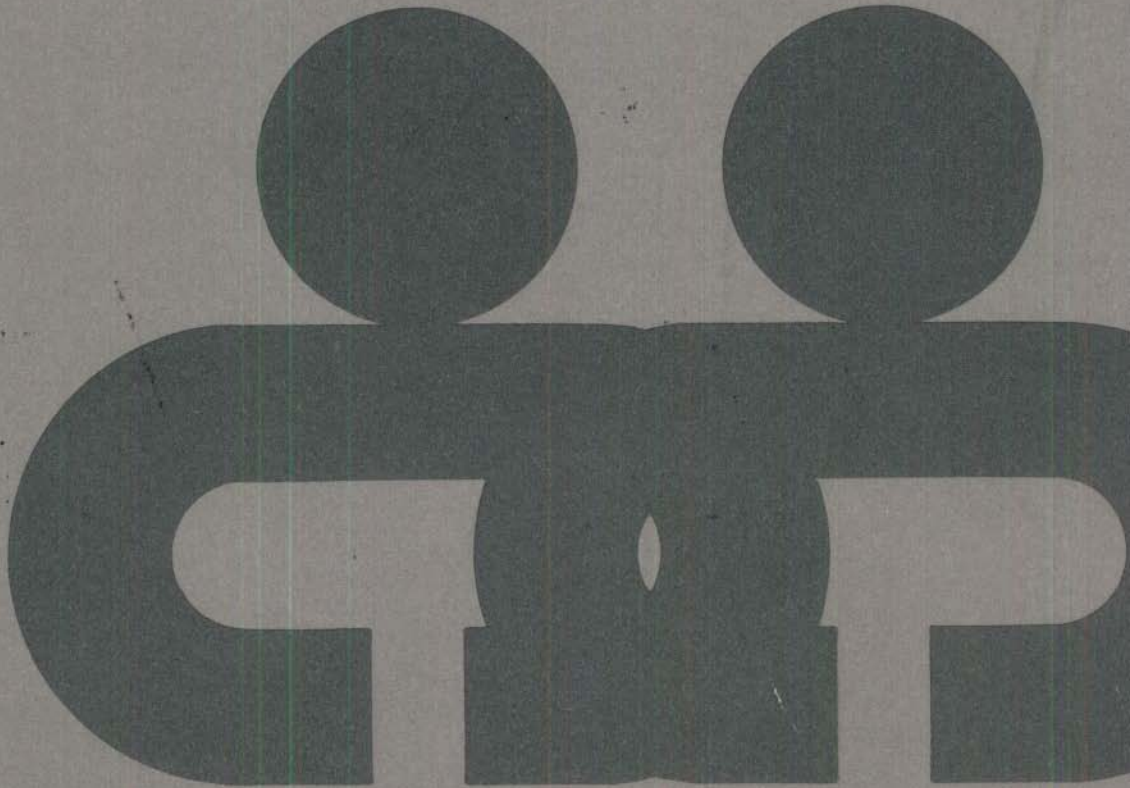
The guide was developed by a cross-functional team and reflects the commitments made by each function to support smooth implementation of the process and eliminate surprises. The guide clarifies areas of responsibilities, focuses on deliverables and actions necessary to fulfill the requirements of each phase. It does not tell you how to do your job. Ownership of how the work gets done resides in the responsible group. It is important that individual organizations develop their own management processes which reflect the needs of their individual businesses. Our expectation is that these processes will mirror the spirit and structure of the Phase Review Process.

The guide does not have all the answers and is not a substitute for good management. It should not be used to stifle creativity or hinder progress, and is most helpful where used within the spirit of the process. Please feel free to contact Walter Soltysik, PTO::Soltysik with constructive suggestions for future revisions.

Regards,



Corporate Phase Review Process Guide



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CORPORATE PHASE REVIEW PROCESS GUIDE

DOCUMENT IDENTIFIER: A-MN-ELCP356-00-0 Rev B, 08-Dec-1988

ABSTRACT: The Corporate Phase Review Process Guide provides guidelines that assist cross-functional Product Teams in:

- Planning for and controlling products during their life cycle.
- Using a common language to communicate project status.
- Promoting consistency in what is expected during the life cycle of products.
- Identifying responsibilities for meeting requirements of the Corporate Phase Review Process.

This guide offers concise guidelines for general application from product inception to product phase down.

APPLICABILITY: This guide applies to all product development efforts and is to be used by members of the Product Team and individuals within the Corporation who support these functions and their Team representatives during the product's life cycle.

The Phase Review Process is dynamic and flexible. However, it cannot stand alone and must be applied judiciously with sound management practice. The level of detail necessary to satisfy the Phase Review Process requirements is product dependent. Groups that supplement the information in this guide with their unique requirements will derive maximum benefit from the process.

STATUS: APPROVED 08-Dec-1988; see EL-INDEX for expiration date.

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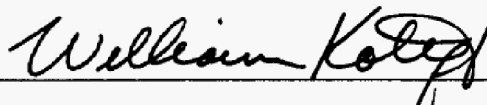
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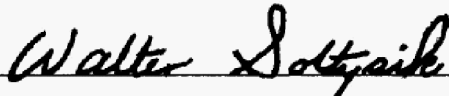
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"All of the battles will be fought, discussions held, compromises reached, and the company committed before we make large investments in Engineering, Manufacturing, Marketing, and the Field."

**Jack Smith
28-Jan-1985**

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Preface

PURPOSE OF THE GUIDE

This guide provides a framework that enables the Product Team to develop and communicate mutual commitments to product plans, and to execute those plans in accordance with agreed-upon objectives and schedules as required by *DEC STD 028-0 The Corporate Phase Review Policy*. It is also a reference for individuals or groups who support the Product Team or who need a working knowledge of the Phase Review Process.

SCOPE

This guide should be used by all groups involved in product life cycle activities. The Phase Review Process shall be used whenever a specific product is being contemplated, but need not be used in its entirety when technical concepts are being evaluated without a specific product in view.

This guide provides a clear and concise structure of who is involved, what their responsibilities are, and when these requirements shall be executed. It is NOT intended to explain HOW a specific group or organization meets these requirements.

TARGET AUDIENCE

The primary audience for this guide is the Product Team and supporting functions involved in product life-cycle management. A copy of this guide should be made available to each Product Team member.

HOW TO USE THIS GUIDE

The purpose of this guide is to help Product Teams successfully execute the requirements of the Phase Review Process. To accomplish this goal, the guide has been designed in a modular fashion to explain each function's responsibility, objectives, exit criteria, and activities for each phase. Memory joggers and outlines of required plans are also provided to help functions meet the exit criteria.

NOTE

Online versions of the required plans are available as templates from Standards and Methods Control. See the Required Documents section of each chapter for further information for obtaining function specific plan templates. Use the following file specification to copy all of the required plans.

```
JOKUR::PHASE_REVIEW:*PLANS.SDML  
JOKUR::PHASE_REVIEW:*PLANS.TXT
```

Contact JOKUR::SMC regarding problems copying these files.

This guide is divided into seven chapters, followed by a matrix of Digital design standards to be addressed by phase, a glossary, a list of all referenced documents, and an Index. This guide does not have to be read from beginning to end. It is designed so that the reader can "zero in" on the required information.

Chapter 1 provides a general overview of the Phase Review Process and highlights the major deliverables of each phase.

Chapters 2 through 7 describe responsibilities at a functional level:

- **Chapter 2** Product Management
- **Chapter 3** Marketing
- **Chapter 4** Engineering
- **Chapter 5** Manufacturing
- **Chapter 6** Corporate Product Operations – Sales
- **Chapter 7** Customer Services

The remainder of the guide consists of the following sections:

- **Appendix A** Digital Design Standards by Phase
- **Glossary**
- **Reference Documents**
- **Index**

The following documents provide further information and should be use in conjunction with this guide.

- *EL-ENGRS-OM, Internal Guide to Digital Organizations*
- *The Corporate Product Introduction Guide*
- *EL-00130-00, DEC STD 130-0 Product/System Business Plans: Content Requirements And Format Guidelines*
- *EL-SM498-00, Producing International Products*
- *EL-CP595-00, Corporate Product Introduction Guide*
- *Top 100 Process Overview Manual (Contact Engineering Product Planning)*

ACKNOWLEDGMENTS

Appreciation is expressed for the generous cooperation of individuals who took the time to review this document and provide valuable information for the development of its content.

Though we cite the efforts and generous cooperation of others, Engineering Product Planning takes responsibility for the technical content and integrity of this document.

CORPORATE PHASE REVIEW PROCESS

1.1 INTRODUCTION

The Phase Review Process provides an operational guideline for managing products throughout their life cycle. It provides a common set of planning, measurement, and implementation tools to help Product Teams deliver quality products to Digital's customers. The process is simple, dynamic, and flexible. It encourages and facilitates effective collaboration among functional groups, and improves the discipline and predictability required for an effective product development and delivery process.

The Phase Review Process defines the life cycle of products over six phases (0 through 5), and provides a set of measurable events for each phase. The process design supports Digital's internal management system. The objectives and deliverables defined for each phase provide appropriate checks and balances throughout the product's life cycle. Deliverables from each phase are evaluated against previously stated objectives prior to gaining approval to proceed to the next phase.

Factors established, confirmed, and documented by the Phase review and approval process are:

- Corporate visibility to products under development
- Fit to Digital's product strategy
- Viable and well integrated Plans
- Sound investment decisions

The Phase Review Process was first implemented by Digital in the mid-1970s to simplify product life cycle management. It organizes work performed in the normal course of doing business and identifies key points in a product's life cycle when management expects to review results prior to making investment commitments. The amount of time spent in each Phase is totally dependent upon the internal processes used to meet the Phase Review requirements. The Phase Review Process itself does not impose time constraints on the users.

Today, as life cycle management becomes more complex, the Phase Review Process is an essential tool for minimizing the uncertainties associated with bringing a product to, or retiring a product from the market. The process is now used throughout the Corporation as the preferred tool for product life cycle management.

Life cycle management within Digital is an ongoing process. As new product concepts are proposed throughout the year, groups sponsoring these proposals ensure their fit with the Corporate Product Strategy. Funding is provided to those proposals that are selected as prospective development activities. It is at this point that groups initiate the use of the Phase Review Process to further explore the proposed product concept. To contain the investment, funding is limited to Phase 0 and Phase 1 activities.

A Product Manager is assigned to the project and a Product Team is formed with members from Marketing, Engineering, Manufacturing, Corporate Product Operations (Sales), and Customers Services. The Product Business Unit (PBU) or sponsoring organization assigns a Finance Manager who provides financial support to the Product Team in the preparation of the Business Plans and other product planning activities, and coordinates Finance activities across all Product Team functions. The Product Team, led by the Product Manager, is responsible for full implementation of the Phase Review Process.

Each member of the Product Team is responsible for soliciting input from their function and communicating project status to their function on an ongoing basis. This enables a proactive approach to life cycle management and allows the Product Team to resolve issues that could negatively impact product introduction or retirement.

1.2 OVERVIEW OF THE PHASE REVIEW PROCESS

The following is an overview of each Phase in the Phase Review process. Each section describes the major objectives of the phase and defines documentation required for that phase and shows the continuous flow of this documentation from phase to phase.

Throughout this chapter, only Phase Exits are described. As time-to-market is critical, many supporting activities may be started in an earlier Phase. Depending on budget requirements, level of risk, and criticality of the FRS date, the Product Team and its management determine whether to begin an activity earlier than the phase in which it is usually begun. Therefore, *Entering Phase N* is not a meaningful concept, except for Phase 0.

1.2.1 Phase 0 – Strategy and Requirements

The objective of Phase 0 is to identify to the Corporation a market problem or opportunity and to propose a corresponding product solution that is consistent with Corporate Product Strategy.

The Product Team thoroughly examines customer needs and the impact of the proposed product on corporate resources, and measures these findings against the financial potential of the product proposal. The Product Team then formulates a strategy and defines what is required to develop the concept.

The Product Manager, collaborating with the Product Team, determines the readiness of the product to Exit this and all subsequent Phases. When the Product Team agrees to exit a Phase, public Phase Exit Reviews (internal to Digital) are conducted to communicate the project status to a larger audience.

At Phase 0 Exit, the Product Team is ready to develop plans to support the agreed upon strategy and requirements for the product. Figure 1–1 shows the information generated during Phase 0.

Figure 1-1: Phase 0 – Strategy and Requirements

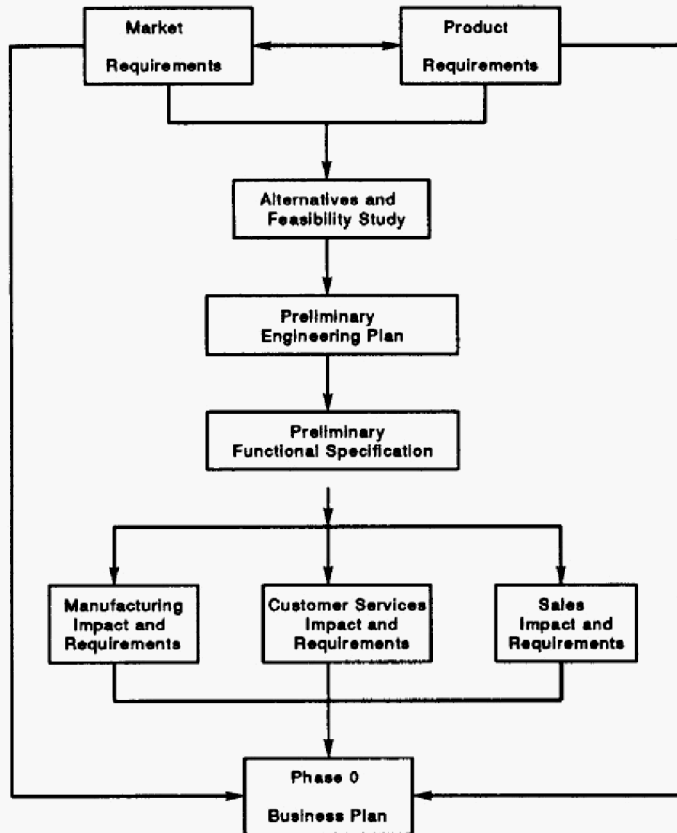


Fig1_1

1.2.2 Phase 1 – Planning and Preliminary Design (Business Plan of Record)

The objectives of Phase 1 are to create a functional specification, a preliminary product design, and provide the Corporation with an integrated implementation plan for Phases 2 through 4B. The purpose of the implementation plan is to ensure achievable commitments from all functions involved in the project. The plan must include cross-project interdependencies and a preliminary Product Phase Down Plan.

This is a critical phase for the product because the total investment required to bring the product to market is approved at Phase 1 Exit. The goal of Phase 1 is to eliminate weak ideas while the investment is still relatively contained. The Phase 1 Business Plan is the Plan of Record and is used to measure the product's success in meeting its quality, schedule, function, and revenue goals. Approval of Phase 1 Exit marks Digital's commitment to commercialize the product, and formally authorizes creation of vendor contracts for buyouts. At Phase 1 Exit, the Product Team is ready to implement agreed upon plans. Figure 1-2 shows the information generated during Phase 1.

Figure 1-2: Phase 1 – Planning and Preliminary Design

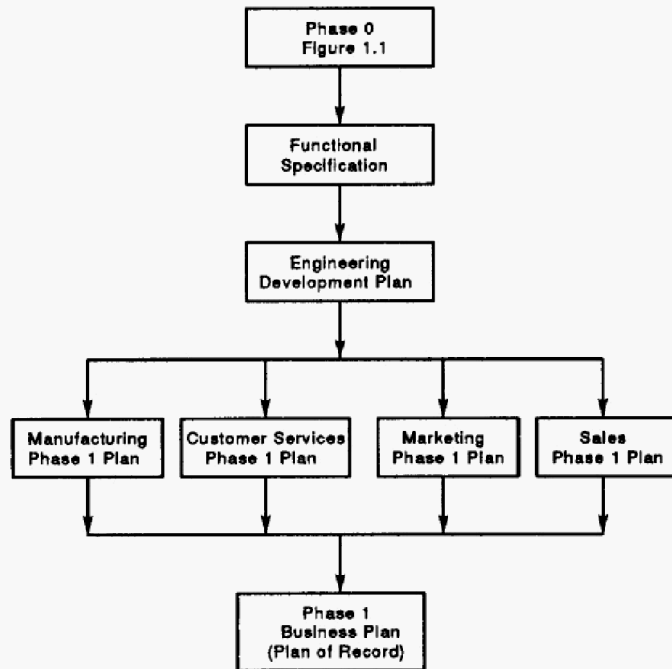


Fig1_2

1.2.3 Phase 2 – Implementation and Design

The objective of Phase 2 is to complete the detailed product design and execute the plans committed to at Phase 1 Exit. Phase 2 tends to be the longest phase in the process. During this phase, the design is completed and prototypes are built and verified through internal testing. The goal is to demonstrate that the product has met Phase 0 requirements and Phase 1 and 2 specifications. Full product functionality is tested in at least one configuration representative of the environment into which the product will be sold.

During Phase 2, the Product Manager develops a Product Launch package with Corporate Product Operations (Sales) and ensures that all members of the Product Team have implemented their respective plans.

At Phase 2 Exit, the product design is declared complete and the product becomes a candidate for qualification, pricing, and announcement. Figure 1–3 shows the information generated during Phase 2.

Figure 1-3: Phase 2 - Implementation and Design

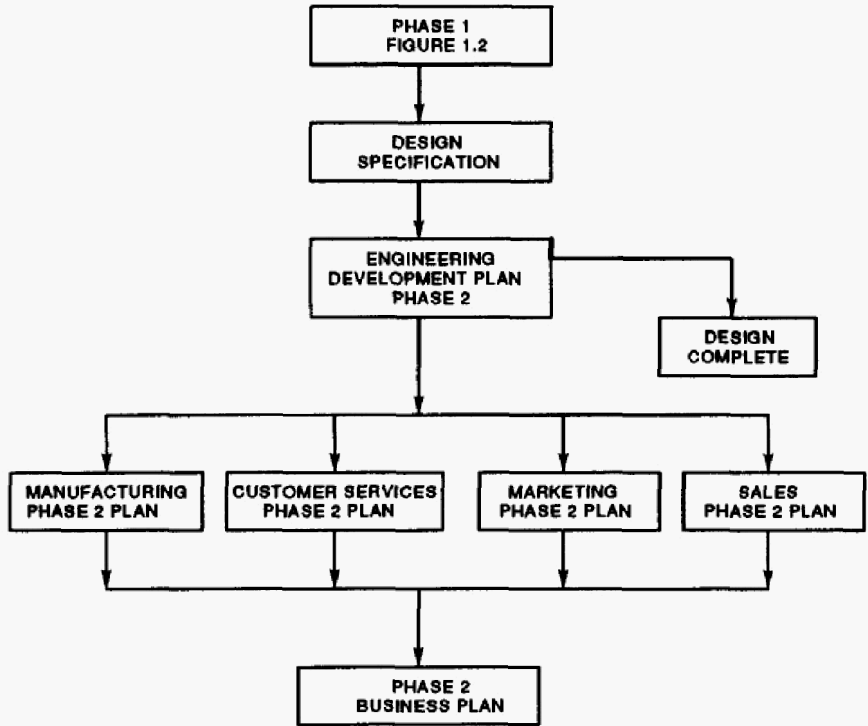


Fig1_3

1.2.4 Phase 3 – Qualification

The objective of Phase 3 is to qualify production-level copies of the product, and demonstrate, through internal and external testing and information from field test customers, that the product has met the requirements established in Phase 0 and the specifications established in Phases 1 and 2.

During Phase 3, the Product Team concentrates on completing all announcement and FRS criteria and all internal and external testing. Regulatory approvals are obtained, and training, service, and support functions are in place. The Pricing and Announcement Committee (PAC) verifies that announcement criteria have been met and approves product pricing. The product is announced with inventory available for shipment. All PAC and FRS criteria are completed prior to FRS.

Phase 3 Exit signifies that the product has been announced, orders are being taken, and Manufacturing, Sales, and Services are ramping up to achieve steady-state operation levels.

At the Exit of Phase 3, the Product Team works to ensure a smooth transition from development to steady-state operation. Figure 1-4 shows the information generated during Phase 3.

Figure 1-4: Phase 3 – Qualification

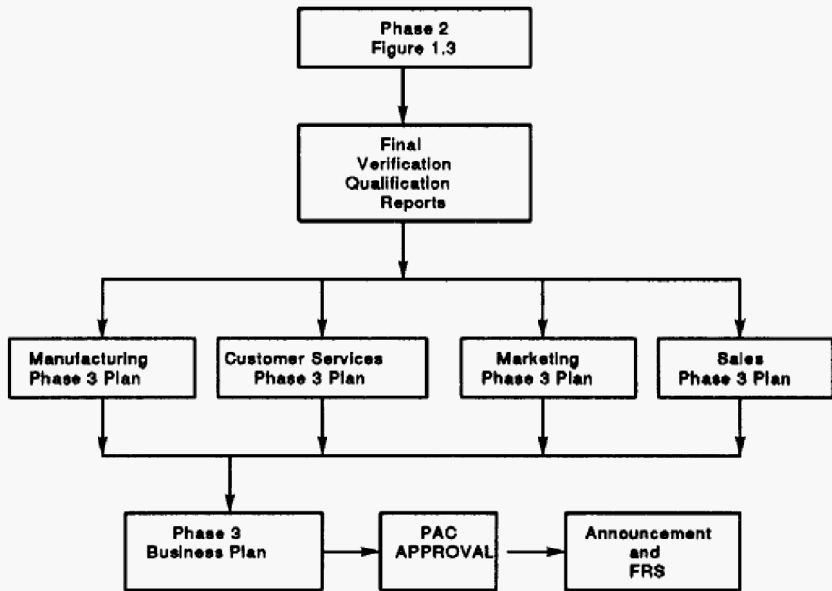


Fig1_4

1.2.5 Phase 4 – Production, Sales, and Service

The objective of Phase 4 is to achieve and maintain steady-state volume production, sales, and service, and periodically evaluate the product's performance in the market.

Phase 4 consists of two parts, each having distinct objectives and exit criteria:

- Phase 4A – Ramp-Up
- Phase 4B – Steady-State Operation

During Phase 4, the focus of the Phase Review Process shifts from development to production, sales, and service. Engineering Change Order (ECO) control and product responsibility is transferred from Development Engineering to Support Engineering. Specified ECO cost responsibility is transferred from Development Engineering to Manufacturing.

Within a month of FRS, the Product Manager convenes the Product Team to conduct a Post-Project Review. The information obtained from this review (generally what could have been improved) is communicated to other project teams to be used as a learning tool for future projects.

Figure 1-5 and Figure 1-6 show the information generated during Phase 4A and Phase 4B.

Figure 1-5: Phase 4A – Ramp-Up

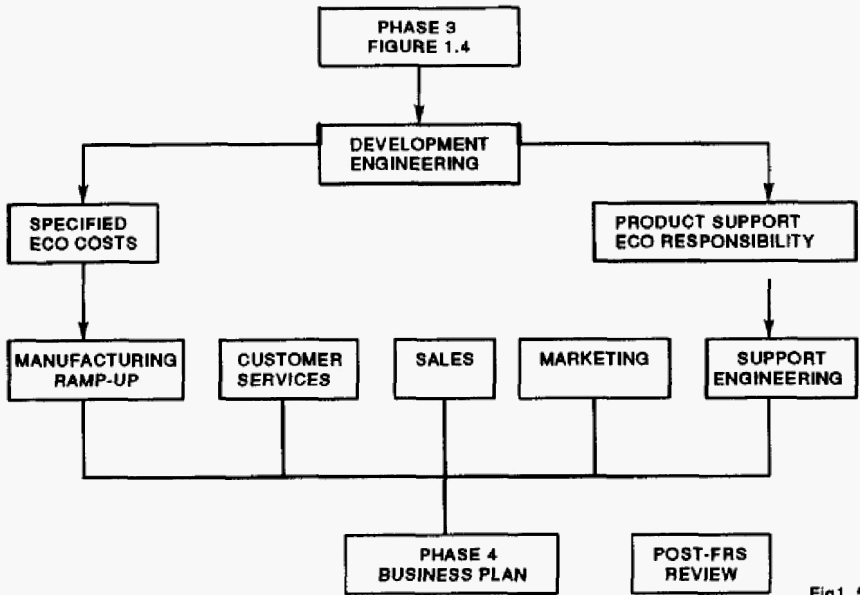


Fig1_5

Market performance evaluations are conducted periodically to determine if the planned market, product, and revenue goals are being achieved. The results of these evaluations are used to decide to continue, enhance, or retire the product.

If a decision is made to retire the product, a Product Manager is assigned the responsibility to create and implement a Product Phase Down Plan. A cross-functional team is created to address Manufacturing's last build requirements, the impact of long term contractual agreements, customer migration strategies, continued service requirements, a product phase down schedule, and appropriate Marketing messages.

Approval to Exit Phase 4B signifies Digital's commitment to support the Product Phase Down Plan.

Figure 1-6: Phase 4B Steady-State Operation

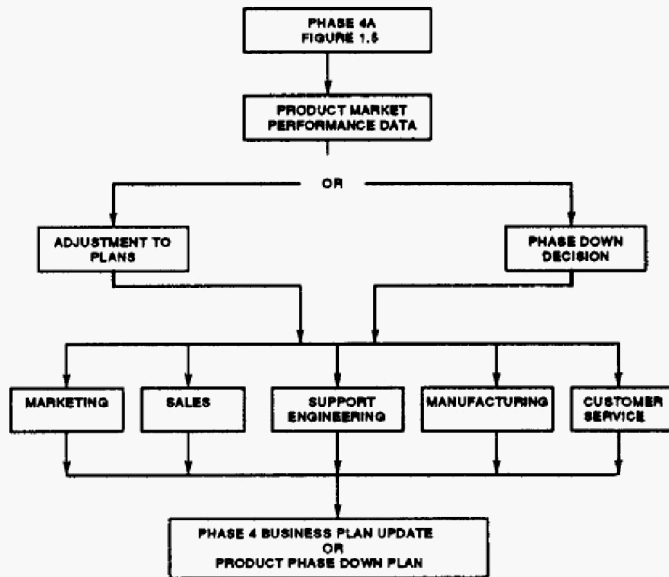


Fig1_6

1.2.6 Phase 5 – Product Retirement (Service Continues)

The objective of Phase 5 is to implement the Product Phase Down Plan in a manner that fulfills all of Digital's internal and external commitments.

At times, product retirement assumes the same level of complexity as new product development. The activities of the Product Team members in Phase 5 require the same level of cross-functional communication and collaboration that was required during the planning and development phases of the product. Figure 1-7 shows the information generated during Phase 5.

Figure 1-7: Phase 5 – Product Retirement (Service Continues)

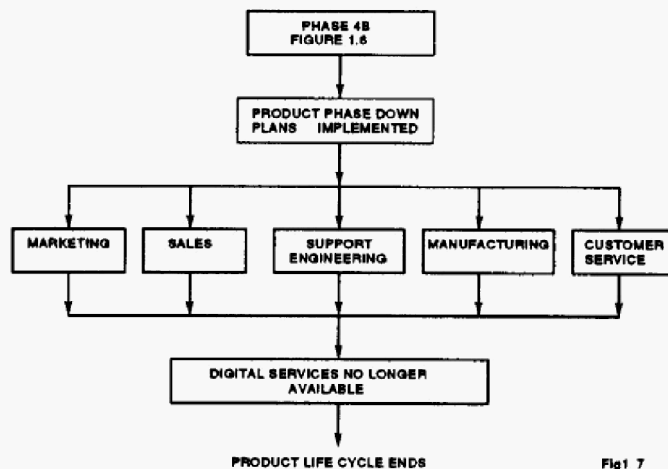


Fig1_7

Although manufacturing has ceased, and the product is no longer sold, Digital will continue to service the product throughout the remainder of its useful service life. The life cycle of the product ends when Digital no longer provides service for the product.

PRODUCT MANAGEMENT

2.1 PURPOSE

The Product Management function within Digital uses the Phase Review Process as a tool to:

- Manage products and systems throughout their life cycle.
- Provide a framework for the consistent, high quality product proposals that support the Digital Corporate Product Strategy and are congruent with the management review process.
- Drive worldwide coordination and integration of key internal organizations such as Marketing, Sales, Finance, Law, Engineering, Manufacturing, and Customer Services through the product's life cycle.

2.2 FUNCTIONAL RESPONSIBILITIES

Product Management is responsible for proposing a product solution that fulfills identified international market needs, fits within the Corporate Product Strategy, and is a sound business investment for the Corporation.

During the product's life cycle major issues and business decisions will require functional expertise. The Product Manager should include functional support representatives in the Product Team discussions concerning these issues from such groups as Finance, Component Engineering, Architecture, Qualification, and Quality groups.

To satisfy the above responsibilities, Product Management will:

- Establish and lead the Product Team through the Phase Review Process.
- Function as the primary source and focal point of all Product information for key internal groups such as Marketing, Sales (Corporate Product Operations), Engineering, Finance, Manufacturing, and Customer Services.
- Create and obtain approval for Phase 0 through 5 Business Plans. Refer to *DEC STD 130-0 Product/System Business Plans: Content Requirements and Format Guidelines* for additional information.
- Coordinate key functional inputs that reflect the appropriate Corporate commitment to bring the product to market.
- If Corporate Product Operations (Sales) has determined that it need not be directly involved as a member of the Product Team, the Product Manager and the Marketing member of the Product Team shall coordinate completion of all announcement and sales related activities and Exit Criteria following the Product Announcement Committee (PAC) process. For further information refer to Chapter 6 Sales and the following documents:
 - PAC Manual (EL-CPPAC-00, *Pricing and Announcement Committee Corporate Policies for Product Pricing, Announcement and first Customer Ship*)
 - EL-CP595-00, *Corporate Product Introduction Guide*

- Present the program, product strategy, and future directions to selected customers and third-party vendors through the Proprietary Information Disclosure (PID) process.
- Ensure that product information is available to the field for forecasting and planning purposes, such as *The Product Business Unit/Product Marketing Group Volume Planning Guide* (Blue Book).
- Present the key product proposals to management and corporate committees.
- Ensure that the product is properly represented at each stage of the review and approval process.
- Ensure that all aspects of the Phase Review Process are executed for the product development effort. Refer to *DEC STD 028-0 Phase Review Policy*.
- Ensure that intellectual property rights in innovative product developments are protected.
- Coordinate Trademark strategy.

2.3 PRODUCT MANAGER'S ACTIVITIES AND DELIVERABLES

The Product Manager shall ensure the completion of the activities and documents required by the Phase Review Process as shown in Figure 2-1.

Figure 2-1: Product Manager's Activities and Deliverables

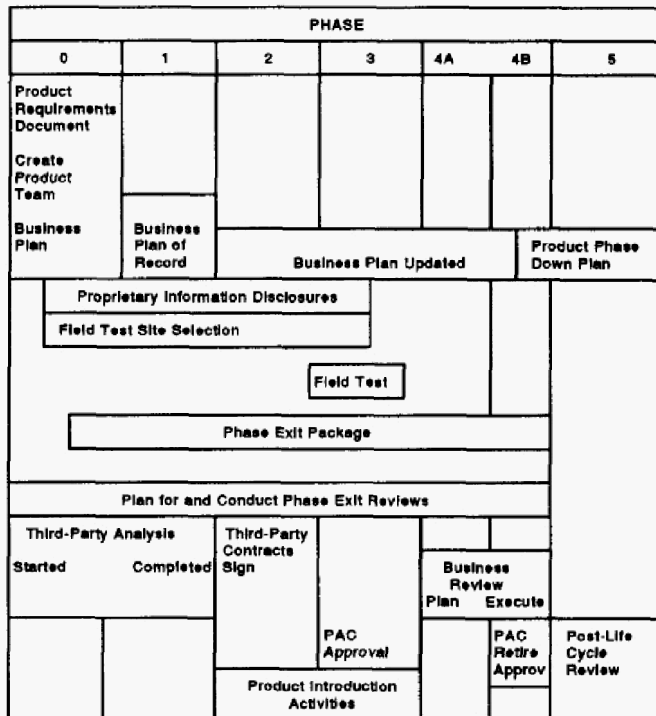


Fig2_1

2.4 EXECUTING AND EXITING EACH PHASE

Each phase in the product's life cycle provides a mechanism for the systematic review of proposals, plans, and results in a manner that allows for controlled funding, resource allocation, and project approval.

Questions that serve as Memory Joggers have been provided for the Product Manager. These questions are not all-encompassing and should be used only when applicable. Their purpose is to stimulate the thought process and surface issues as early as possible in each phase.

Additional Exit Criteria may be added or modified by the Product Team, when appropriate, at each phase.

The Product Manager is responsible for orchestrating the activities of the Product Team to move the product through the Phase Review Process.

The Product Manager is also responsible for such activities as writing and updating the Business Plan.

2.4.1 Phase 0 – Strategy and Requirements

Objective: Define product requirements in response to market requirements, and develop a Business Plan to support Corporate revenue, growth, and profit goals.

2.4.1.1 Phase 0 Exit Criteria

Product Team, representing the Corporation worldwide, established, consisting of members from Marketing, Engineering, Product Management, Manufacturing, Sales, and Customer Services, with support from Finance.

The protection of intellectual property rights used in the product coordinated through the Engineering Law Group.

The Internationalization Plan for the product is available from the International Engineering Development Group (IED). See Glossary for Internationalization Plan definitions. IED contact is Jim Mills. See ELF.

The GIA Product Strategy Committee contacted for Asian Base Development Plans. (Contact is Les Dole. See ELF.)

Product Requirements Document written, reviewed, approved, and published.

Preliminary phase exit schedule developed.

Third-party analysis for buyout begun.

All individuals responsible for Phase exit approval identified in the Business Plan.

Phase 0 Business Plan written, reviewed, approved, and published. Refer to *DEC STD 130-0 Product/System Business Plans: Content Requirements and Format Guidelines* for more information.

Export requirements identified by the Corporate Export and Trade Group (CE/T), Washington D.C.

NOTE

To ensure a timely review, provide CE/T with a summary product description, an overview of the target markets, estimated month of announcement, and initial date feedback is required. (Export contact is Don Ames. See ELF.)

Product fits Corporate and PBU or sponsoring organization strategies as defined in the Long Range Plans (LRP).

The protection of intellectual property rights in the product has been coordinated through the Engineering Law Group.

Phase Exit Criteria for Marketing, Sales, Engineering, Manufacturing, and Customer Services completed.

A Phase 0 Exit Review held with all appropriate persons attending and all open issues resolved.

All members of the Product Team in agreement to exit Phase 0.

All known risks and major dependencies documented by the Product Team.

Approved Phase 0 Exit plans submitted to the PBU or sponsoring organization for archiving. Copies of these plans submitted to Engineering Product Planning, for Top 100 Products.

Phase 0 Exit Package, as defined by the Phase Review Committee (PRC), submitted to the Phase Review Committee for Top 100 Products. Refer to *Top 100 Process Overview Manual*. Contact Carlha Vickers, Engineering Product Planning.

Appropriate approvals, as documented in the Business Plan at the Phase 0 Exit, obtained to exit Phase 0.

2.4.1.2 Phase 0 Activities

Identify the members of the Product Team.

Define product goals and strategy.

Ensure that identified internationalization requirements have been addressed by members of the Product Team in their Phase 0 Plans.

Ensure that the product will be designed to be competitive in all countries designated as strategic markets for the corporation. Refer to *DEC STD 066-3 Policy for Designing Products for All Countries Designated as Strategic Markets*.

Identify the key factors critical to the success of the product including technology, architecture, profit, resources, schedule. Quantify the impact of these key factors.

Ensure that the Product Team reviews the Phase 0 Exit Criteria for applicability.

Translate Marketing's definition of market requirements into the Product Requirements Document.

Ensure that the impact and requirements from other functions, such as worldwide Manufacturing, Marketing, Customer Services, and Sales, have been addressed in the Product Requirements Document and Business Plan.

Integrate product requirements identified by IED in the Internationalization Plan into the Phase 0 Business Plan and Product Requirements document.

Ensure that the Engineering Law Group or appropriate Patent Engineer has been contacted to establish and implement an applicable legal protection strategy for the product.

Ensure that prior to any proprietary information discussions, the Proprietary Information Disclosure (PID) process has been followed and intellectual property protection strategies are being implemented.

Contact the Corporate Export and Trade Group (CE/T), Washington, D.C. to determine export requirements. This applies to hardware and software products developed worldwide, technical data, and Proprietary Information Disclosures throughout the life of the product.

Understand sales support requirements and responsibilities for low volume products that are not directly supported by Sales.

Collect and distribute the following Assumptions Package to the Product Team:

- Market requirements from the Marketing Plan
- First pass product requirements that include product descriptions (functional requirements should be provided as soon as available)
- Alternatives and Feasibility Study
- Assumptions:
 - Volume projections
 - Announcement and target First Revenue Ship (FRS) dates
 - Major goals (such as time-to-market, cost, and availability)

Update the Product Team on product status. Initiate discussions on the type of announcement activities the product merits.

For Strategic Marketing Products (see Chapter 3 Marketing), ensure that the Marketing Advisory Board (MAB) Team and the European Systems Strategy Planning Group, and the GIA Product Strategy Committee has received review copies of the Business, Marketing, and Sales Plans at least two weeks prior to the scheduled phase exit. (Contact Marc Zavadil, Strategic Systems Planning Group, Europe and Les Dole, GIA Product Strategy Committee. See ELF for contact information.)

Announce the phase exit review date and make available all phase exit documents no later than two weeks prior to the scheduled review date.

Conduct a Phase 0 exit review.

Ensure that the appropriate approvals have been obtained to exit Phase 0.

2.4.1.3 Phase 0 Memory Joggers

Has the Product Team agreed to the product goals stated in the Business Plan?

Has the Law Department been contacted to approve the product name or trademark strategy for the product? Are any patent, copyrights, or other intellectual property rights infringements involved?

Has there been adequate consideration of the process for obtaining patent protection for the product, product components, or production method? Of the process for defining trade secrets requiring protection?

Has International Engineering Development (IED) been contacted? Is an Internationalization Plan in place?

Are all major milestones of component product schedules integrated into a single master project schedule?

2.4.2 Phase 1 – Planning and Preliminary Design

Objectives: Create an integrated plan and schedule; ensure development of engineering product specifications and a complete product justification to support the proposed investment.

2.4.2.1 Phase 1 Exit Criteria

Legal Protection Strategy in place, including updates to the Phase 0 Strategy, prior to any Proprietary Information Disclosures (PIDs).

Export requirements identified.

NOTE

To ensure a timely review, provide CE/T with a summary product description, an overview of the target markets, the estimated month of announcement, and the date feedback is required. (Export contact is Don Ames. See ELF for contact information.)

Agreement and commitment by each Product Team member to the Business Plan of Record, Product Functional Specification, Internationalization Plan (I18N Plan) and product's schedule.

Third-party analysis for buyouts completed. (No contract signed until Phase 1 Exit approval.)

Volume projections specified in the Business Plan aligned with projections from worldwide Sales, Manufacturing, and Product Marketing Groups (PMG).

Assumptions and requirements evaluated since the Phase 0 exit and significant changes communicated to the Product Team and appropriate approval bodies.

Phase Exit Criteria for Marketing, Sales, Engineering, Manufacturing, and Customer Services completed.

Business Plan (Plan of Record) updated, reviewed, approved, and published. Refer to *DEC STD 130-0 Product/System Business Plans: Content Requirements and Format Guidelines*.

Phase 1 Exit Review held with all appropriate persons attending and all open issues resolved.

All members of the Product Team in agreement to exit Phase 1.

All known risks and major dependencies documented by the Product Team.

Phase 1 Exit Package, as defined by the Phase Review Committee (PRC), submitted to the Phase Review Committee for Top 100 Products. Refer to *Top 100 Process Overview Manual*. Contact Carlha Vickers, Engineering Product Planning.

Approved Phase 1 Exit plans submitted to the PBU or sponsoring organization for archiving. Copies of these plans submitted to Engineering Product Planning, for Top 100 Products.

Appropriate approvals obtained to exit Phase 1 (as documented in the Business Plan at the Phase 1 Exit).

2.4.2.2 Phase 1 Activities

Ensure that the required staffing to develop and deliver the product is available and committed.

Evaluate assumptions and requirements since the Phase 0 Exit. Update affected plans as necessary and communicate significant changes to the appropriate review and approval bodies.

Ensure that the Product Team reviews the applicability of Phase 1 Exit Criteria.

Ensure that any open issues or action items generated at Phase 0 are resolved to the satisfaction of the Product Team.

Request New Products Form (NPF) from release engineering for software products.

Ensure that the Product Functional Specification addresses requirements identified in Phase 0. Identify and document any exceptions as an addendum to the Product Requirements and Business Plans.

Contact the Engineering Law Group to establish and update if necessary, applicable Legal Protection Strategy for the product.

Contact the Corporate Export and Trade Group (CE/T), Washington, D.C., to determine export license requirements. This applies to hardware and software products developed worldwide throughout the life of the product.

Solicit potential Field Test sites from the Product Team and review this list with Corporate Product Operations to eliminate possible problem sites.

Identify primary factors that ensure the success of this product and quantify their impact (such as, assumptions, customer dependencies, economic and environmental issues, materials, new processes, services, and technology).

Obtain cross-functional commitments and support from worldwide Engineering, Finance, Marketing, Sales, Manufacturing, and Services.

Ensure that the Proprietary Information Disclosure is developed and approved as defined in *Corporate Proprietary Information Disclosure Policies Procedures* (order number EJ-3198305) that may be obtained from Printing and Circulation Services in Northboro.

Ensure that the product is still compatible with Corporate Product Strategies.

Consult with worldwide Sales, Industry Marketing, and PMGs regarding Phase 1 pricing volume projections.

Ensure that plans are in place to satisfy the critical international requirements for the product. Finalize Internationalization Plan. Refer to subheading 2.5 Required Product Management Documents.

Ensure that the product and its goals (including quality and performance) have specific, well defined metrics.

Ensure that plans are in place for meeting all standards and regulatory requirements and obtaining agency approvals worldwide. Refer to *DEC STD 060-0 Design and Certification of Hardware Products to National and International Regulations and Standards - Policy and Procedures* for more information.

For Strategic Marketing Products (see Chapter 3 Marketing), ensure that the MAB Team and the European Systems Strategy Planning Group, and the GIA Product Strategy Committee has received review copies of the Business, Marketing, and Sales Plans at least two weeks prior to the scheduled phase exit. (Contact Marc Zavadil, Strategic Systems Planning Group, Europe and Les Dole, GIA Product Strategy Committee. See ELF for contact information.)

Update the Product Team on product status.

For hardware products only, provide the Engineering Manager with input to the part number family assignment plan.

Collect, from the Product Team, the number of units required to support Phase 2 and Phase 3 activities (such as internal test, training, Field Test, introduction activities, applications and characterization).

Generate a preliminary plan for the build, distribution, and financing of pre-FRS units.

Ensure that reviews with appropriate New Product Committees are conducted prior to Phase 1 Exit, including the VAX New Product Committee (VNPC), Networks New Products Committee (NNPC), and Micros New Product Committee (MNPC).

Identify which critical events must occur for the product to meet its schedule.

Ensure that any open issues or action items generated at Phase 0 are resolved to the satisfaction of the Product Team.

Announce the Phase exit review date and make available all phase exit documents no later than two weeks prior to the scheduled review date.

Prior to the Phase 1 Exit Review Meeting, ensure that all members of the Product Team are in agreement to exit Phase 1.

Conduct the Phase 1 exit meeting.

2.4.2.3 Phase 1 Memory Joggers

Is this product a good investment for Digital?

Does the integrated schedule contain:

- Activities during the following phases of a product's life cycle: prototype, development, preproduction, and phase down?
- Tasks and interdependencies of all worldwide functional groups?

Are there conflicts with other hardware or software products? Is this product in direct competition with another Digital internal product?

What agreements have been made with other groups to ensure the product's success? Have the agreements been documented? For example, is a final Internationalization Plan from International Engineering Development (IED) in place?

Has the Product Manager read the following product introduction manuals?

- Pricing and Announcement Committee's (PAC) manual, EL-CPPAC-00, *Corporate Policies for Product Pricing, Announcement, and First Customer Ship*.
- EL-CP595-00, *Corporate Product Introduction Guide*.

Has a plausible product cost estimate been developed including manufacturing labor and overhead costs? Refer to *DEC STD 130-0 Product/System Business Plans: Content Requirements and Format Guidelines* for more information.

Are there new ideas developed for which intellectual property rights strategies need to be implemented?

2.4.3 Phase 2 – Design and Implementation

Objectives: Execute the plans committed to in Phase 1 and deliver the proposed product with stated characteristics, on time, within budget, and at cost.

2.4.3.1 Phase 2 Exit Criteria

Assumptions and requirements evaluated since the Phase 1 Exit and significant changes communicated to the Product Team and appropriate approval bodies.

A legal protection strategy is in place, including updates to the Phase 1 strategy, prior to any new Proprietary Information Disclosures (PIDs).

The Corporate Export and Trade Group (CE/T) has determined the appropriate government classification, under the current export regulations, and advised the Product Manager of the conditions under which the product may be exported.

Third-party contracts signed.

Field Test Sites selected, licensed, and prepared to begin testing.

Customer field test support in place.

Field Test Plan written, reviewed, approved, and published.

Product ready for qualification as specified in Field Test Plan.

The volume projections specified in the Business Plan aligned with projections from worldwide Sales, Manufacturing, and the PMGs, For Top 100 Products.

Total worldwide product volume requirements for qualification, characterization, product introduction, and first quarter ramp identified and agreed to by the Product Team.

Activities required to support Product Introduction defined.

Phase Exit Criteria for Marketing, Sales, Engineering, Manufacturing, and Customer Services completed.

Phase 2 Business Plan updated, reviewed, approved, and published. Refer to *DEC STD 130-0 Product/System Business Plans: Content Requirements and Format Guidelines* for more information.

A Phase 2 Exit Review held with all appropriate persons attending and all open issues resolved.

All members of the Product Team in agreement to exit Phase 2.

All known risks and major dependencies documented by the Product Team.

Phase 2 Exit Package, as defined by the Phase Review Committee (PRC), submitted to the Phase Review Committee for Top 100 Products. Refer to *Top 100 Process Overview Manual*. Contact Carlha Vickers, Engineering Product Planning.

Approved Phase 2 Exit plans submitted to the PBU or sponsoring organization for archiving. Copies of these plans submitted to Engineering Product Planning, for Top 100 Products.

Appropriate approvals obtained to exit Phase 2 (as documented in the Business Plan).

2.4.3.2 Phase 2 Activities

For software products, ensure that the New Products Form (NPF) is updated by release engineering to reflect documentation and media kits.

Ensure that a Legal Protection Strategy is in place, and export requirements are satisfied prior to any PIDs.

Ensure that the PID is developed and approved as defined in the Corporate Proprietary Information Disclosure Policy.

Negotiate agreement with Sales and Marketing regarding determination of proposed Field Test Sites, and deliver the list to Engineering for inclusion in the Field Test Plan.

Ensure that the preliminary Software Product Description (SPD) is written and reviewed for Field Test.

Ensure that progress against the integrated schedule is monitored on a regular basis.

Match unit requests to support Phase 2 and Phase 3 activity with Manufacturing capacity. Work prioritization and allocation of available units with Product Team.

Ensure that there is a Product Introduction Information Package to support Introduction activities, if required by Corporate Product Operations (Sales).

NOTE

The Product Introduction Information Package may include a description of hardware and software support requirements, prerequisite equipment, site planning information, estimated equipment costs, and configurations. This information is used to plan for customer seed units, Field Service training units, geography support centers, demos, Application Centers for Technology (ACTs), Digital Competence Centers (DCC), application characterization, and the field benchmark center. This Product Introduction Information Package must be distributed to Marketing, Sales, Services, Manufacturing, Engineering, and the Law Group.

Work with the Product Team to prepare for product qualification and Introduction.

Update the plan for pre-FRS units with the Product Team.

Review and begin Announcement and FRS checklists. Refer to *PAC Manual*.

Ensure that the Product Team agrees that all the Phase 2 Exit Criteria have been met.

For hardware and systems products, ensure that valid part numbers have been obtained from the Chief Engineer's Office for the total product offering. Refer to *DEC STD 012-2 Unified Numbering Code for Part Identifier Class Codes and Related Document Identifiers*. For software products refer to *DEC STD 012-4 Unified Numbering Code (UNC) – Software Numbering Conventions*.

Review product documentation.

Ensure the completion of plans for prototype distribution, including customer Field Test Sites.

Ensure that all documentation, Product Team plans, and the Business Plan have been updated to reflect changes made to the product or program.

For Strategic Marketing Products (see Chapter 3 Marketing), ensure that the Marketing Advisory Board (MAB) Team and the European Systems Strategy Planning Group has received review copies of the Business, Marketing, and Sales Plans at least two weeks prior to the scheduled phase exit. (Contact Marc Zavadil, Strategic Systems Planning Group, Europe. See ELF.)

2.4.3.3 Phase 2 Memory Joggers

Has the product schedule been updated on a regular basis? Has the Product Team been notified of any deviations from the schedule? Are functional groups meeting their obligations?

Has Services confirmed that support people have been trained and provided with a sufficient number of spares and documentation to support field test plans?

Has the Government Systems Group been notified in advance when developing pricing and packaging?

Has Customer Services Systems Engineering (CSSE) Project Management submitted service pricing for Field Services Pricing and Policies Committee (FSPPC) approval?

Are there any new ideas developed for which intellectual property rights strategies need to be implemented?

2.4.4 Phase 3 – Qualification

Objectives: Demonstrate that the product meets its stated specifications through internal and external testing, and complete all required Announcement and FRS criteria.

2.4.4.1 Phase 3 Exit Criteria

Assumptions and requirements evaluated since Phase 2 Exit and significant changes communicated to the Product Team and appropriate approval bodies.

Legal Protection Strategy in place, including updates to the Phase 2 strategy, and export requirements satisfied prior to any new Proprietary Information Disclosures (PIDs).

All announcement and First Revenue Ship (FRS) criteria met.

Final Software Product Description (SPD) written, reviewed, approved, and published.

Final New Product Form (NPF) reviewed and approved.

All pricing actions approved by the Pricing and Announcement Committee (PAC) and the Marketing Sales and Strategy Committee (MSSC), if applicable.

The volume projections in the Business Plan are aligned with projections from Sales, Manufacturing, Industry Marketing, and PMGs.

Demonstrate, through documentation of test results, that the product meets performance goals.

Plans in place, if appropriate, for transition of Product Management responsibility for remainder of the product's life cycle.

Phase 3 Business Plan updated, reviewed, approved, and published. Refer to *DEC STD 130-0 Product/System Business Plans: Content Requirements and Format Guidelines* for more information.

Phase Exit Criteria for Marketing, Sales, Engineering, Manufacturing, and Customer Services completed.

A Phase 3 Exit Review held with all appropriate persons attending and all open issues resolved.

All members of the Product Team in agreement to exit Phase 3.

All known risks and major dependencies documented by the Product Team.

For Top 100 Products, Phase 3 Exit Package as defined by the Phase Review Committee (PRC), submitted to the Phase Review Committee. Refer to *Top 100 Process Overview Manual*. Contact Cartha Vickers.

Approved Phase 3 Exit plans submitted to the PBU or sponsoring organization for archiving. Copies of these plans submitted to Engineering Product Planning, for Top 100 Products.

The appropriate approvals obtained to exit Phase 3 (as documented in the Business Plan).

2.4.4.2 Phase 3 Activities

Evaluate assumptions and requirements since the Phase 2 Exit. Update affected plans as necessary and communicate significant changes to the appropriate review and approval bodies.

Obtain approval to FRS the product.

Ensure that the PID is updated and approved as defined in *Corporate Proprietary Information Disclosure Policy*.

Contact the Engineering Law Group to establish and update, if necessary, the applicable legal protection strategy for the product. Include, in particular, that strategy relating to product naming and trademarks.

Ensure that regulatory approvals have been obtained worldwide.

Ensure that Field Test and Introduction requirements are complete. Refer to the *PAC Manual* for more information.

Monitor the Product Team's integrated schedule of activities on a regular basis.

Ensure the delivery of all Field Test materials to selected sites.

For VMS layered products, submit Product Authorization Key (PAK) to product registrar in Software Quality Management (SQM).

Update Product Team on product status to help determine the type of announcement activities the product merits.

Sales Update and Competitive Update Article(s) written, approved, and submitted.

Complete Announcement and FRS criteria for approval committees. Refer to *Refer to the PAC Manual* for more information.

Ensure that Maynard List Price (MLP) forms have been prepared to place related older products in the Maintenance Only section of the Corporate Price File.

For software, ensure Software Distribution Center (SDC) New Products Form (NPF) has been approved by the Product Manager.

Prepare, approve, and submit MLP forms to Data Management Services to enter, update, and delete information contained in the hardware, software, packaged systems, and Maintenance Only sections of the Corporate Price File, Digital Standard Price List, and its Addenda. Make changes to the Option Module List.

Write in PAC proposal form all pricing actions, such as pricing of hardware and software licenses, price changes, special sales, discount changes, First Revenue Ship (FRS) criteria, and product features/presentations. Obtain approval from the PBU or sponsoring organization and the Pricing and Announcement Committee (PAC) before announcement to the field and customers.

Obtain Marketing and Sales Strategy Committee (MSSC) approval when required.

Ensure that Field Test Sites are supported, polled on the results according to plan, and that appropriate field test feedback has been implemented.

Ensure that there has been an assessment of the effect of the product's announcement on other Digital products. This is typically part of the Business Plan (See DEC STD 130-0).

Ensure that the Law Department reviews PAC/MSSC proposals and Marketing communications materials.

Ensure the successful completion of internal qualification against product specifications, Digital standards, and industry standards prior to FRS.

Ensure completion of external country-specific testing.

For hardware and systems products only, ensure that the Chief Engineer's Office has been notified and has approved any part number deviations from those approved at Phase 2 Exit.

Ensure that all testing has been completed, and product performance data is published.

Ensure the availability of Application and Performance information for Sales Literature.

Ensure that customers have been identified for the first hardware production units.

Schedule a Post-FRS Review within a month of FRS. This review is to allow the Product Team to evaluate the effectiveness of the tools and processes used to develop and introduce the product.

Prior to the Phase 3 Exit Review meeting, ensure that the Product Team agrees that all Phase 3 Exit Criteria have been met.

Conduct final reviews prior to FRS with the appropriate New Product committees, such as the VAX New Products Committee (VNPC), Micros New Products Committee (MNPC), Networks New Products Committee (NNPC), and Software Quality Management (SQM).

Resolve any open issues or action items generated at Phase 2 to the satisfaction of the Product Team.

For Strategic Marketing Products (see Chapter 3), ensure that the MAB Team has received review copies of the Business, Marketing, and Sales Plans no less than two weeks prior to the scheduled phase exit.

2.4.4.3 Phase 3 Memory Joggers

What are the critical events and developments that must occur within other internal and external groups?

For hardware products, have appropriate changes been made to the Option Module List?

Has the Law Department reviewed promotional material?

Are plans in place for the transition of the product to Support Engineering or Maintenance Engineering?

Are there any new ideas developed for which intellectual property rights strategies need to be implemented before product announcement?

2.4.5 Phase 4A – Ramp-Up

Objective: Evaluate product demand and supply and take appropriate action.

2.4.5.1 Phase 4A Exit Criteria

Assumptions and requirements evaluated since the Phase 3 Exit and significant changes communicated to the Product Team and appropriate approval bodies.

The product is meeting its Sales, Services, Manufacturing, and Marketing goals.

The volumes specified in the Business Plan are aligned with projections from Sales, Manufacturing, and the PMGs, for Top 100 Products.

A Product Manager is available for continuing management of the Product Team.

Plans are in place for Product's Business Performance Reviews (to be held annually, at a minimum).

A Post-FRS Review meeting held to allow the Product Team to evaluate the effectiveness of the tools and process used to develop and introduce the product.

Phase 4 Business Plan updated, reviewed, approved, and published. Refer to *DEC STD 130-0 Product/System Business Plans: Content Requirements and Format Guidelines* for more information.

Phase Exit Criteria for Marketing, Sales, Engineering, Manufacturing, and Customer Services completed.

A Phase 4A Exit Review held with all appropriate persons attending and all open issues resolved.

All members of the Product Team in agreement to exit Phase 4A.

All known risks and major dependencies documented by the Product Team.

Approved Phase 4A Exit plans submitted to the PBU or sponsoring organization for archiving. Copies of these plans submitted to Engineering Product Planning, for Top 100 Products.

Appropriate approvals obtained to exit Phase 4A (as documented in the Business Plan at the Phase 0 Exit).

2.4.5.2 Phase 4A Activities

Evaluate assumptions since the Phase 3 Exit. If no longer valid, reevaluate and update the functional and business plans. Communicate changes to the Product Team and appropriate approval bodies.

Evaluate product performance feedback from Quality, Manufacturing, Services, Marketing, and Sales, and take appropriate action.

Ensure that the Product Introduction is working smoothly. If not, coordinate Introduction with Sales.

Participate in defining any follow-on products to be developed.

Ensure that the Chief Engineer's Office has been notified of planned or potential part number changes to a hardware product as a result of:

- ECOs
- Value Engineering activity
- Product Enhancements or mid-life kickers
- Other activities that may require changing or adding part numbers to the current product offering

Once shipment has been achieved, periodically conduct Business Performance Reviews of the product forecast versus actual sales and other financial objectives. Update the Business Plan as required. Refer to *DEC STD 130-0 Product/System Business Plans: Content Requirements and Format Guidelines* for more information.

Ensure that ongoing service and support plans and resources are in place.

If contemplating changes to the Price Book, take into account any affected products' worldwide sales.

Resolve any open issues or action items generated at Phase 3 exit to the satisfaction of the Product Team.

For Strategic Marketing Products (see Chapter 3), ensure that the MAB Team has received review copies of Business, Marketing, and Sales Plans no less than two weeks prior to the scheduled phase exit.

2.4.5.3 Phase 4A Memory Joggers

Is the profitability of the product less than planned or less than the corporate average for like products? Define what action will be taken.

If repricing a product, has a PAC proposal been written and approved?

Have worldwide implications of repricing been considered and addressed?

Have all actions, such as pricing of hardware and software licenses, special sales, and discount changes, been written in PAC proposal form and approved by the PBU or sponsoring organization and then by the PAC before announcement to the field and customers?

2.4.6 Phase 4B – Steady-State Operation

Objectives: Monitor Sales, Service, Support Engineering, and Manufacturing activities. Evaluate results against plans and orchestrate change as necessary.

2.4.6.1 Phase 4B Exit Criteria

Assumptions and requirements evaluated since the Phase 4A Exit and significant changes communicated to the Product Team and appropriate approval bodies.

Plans that support the retirement of the product in place for each functional group.

Product Phase Down Team established.

Product Phase Down Plan written, reviewed, approved, and published.

All worldwide Phase Down issues addressed.

PRC approval received prior to submitting to PAC.

Phase Down proposal approved by PAC.

Phase Exit Criteria for Marketing, Sales, Engineering, Manufacturing, and Customer Services completed.

Phase 4B Exit Review held with all appropriate persons attending and all worldwide phase down issues resolved.

All members of the Product Phase Down Team in agreement to exit Phase 4B.

All known risks and major dependencies documented by the Product Phase Down Team.

Phase 4B Exit Package, as defined by the Phase Review Committee (PRC), submitted to the Phase Review Committee for Top 100 Products, Refer to *Top 100 Process Overview Manual*. Contact Carlha Vickers, Engineering Product Planning.

Approved Phase 4B Exit plans submitted to the PBU or sponsoring organization for archiving. Copies of these plans submitted to Engineering Product Planning, for Top 100 Products.

Appropriate approvals obtained to exit Phase 4B (as documented in the Business Plan at the Phase 0 Exit).

2.4.6.2 Phase 4B Activities

Evaluate product performance feedback from Quality, Manufacturing, Services, Marketing, and Sales, and take appropriate action.

Participate in definition of any follow-on products.

Conduct Business Performance Reviews to determine one of the following courses of action:

- Take no action, and continue as planned
- Enhance the product (mid-life kicker)
- Introduce new marketing programs
- Value Engineer (VE) the product
- Phase Down and Retire the product

Ensure that the Chief Engineer's Office has been notified of planned or potential part number changes to a hardware product as a result of:

- ECOs
- Value Engineering activity
- Product Enhancements or mid-life kickers
- Other activities that may require changing or adding part numbers to the current product offering

Establish a Product Phase Down Team with representatives from appropriate functional groups, including Support Engineering, Customer Services, Manufacturing, Sales, and Marketing.

Incorporate guidelines from the *Product Phase Down Handbook for Product Managers* into the Product Phase Down Plan. (Order number EZ-J360887, Northboro, Ma.)

Ensure that all worldwide issues concerning product phase down have been addressed in the Product Phase Down Plan, including:

- Manufacturing's last build
- Long-term contractual agreements
- The customer migration strategy
- Continuing service-life requirements and plans
- Development of the marketing messages
- Product phase down schedule

Ensure that all pricing actions have been written in PAC proposal form, approved by the PBU or sponsoring organization, and approved by PAC before announcement to the field and customers. (This includes the pricing of hardware and software licenses, price changes, special sales, discount changes, and phase down announcement criteria, such as pricing, availability, and support provisions.)

2.4.6.3 Phase 4B Memory Joggers

Have the financial objectives of the product been met?

What products are available to replace this product?

How good are the alternative product opportunities?

Have economic or marketing factors been an element of the decision to phase down the product?

Have manufacturing and field service agreed to ongoing logistical support for the product?

Has product modification been explored relative to prolonging the market life of this product?

Has the Product Phase Down Plan been written with input from functional group representatives?

Has a phase down schedule been prepared for the product? Does it contain tasks and interdependencies of all functional groups?

Is there a plan for continuing Engineering support through Phase 5?

Have the needs of affected customers been identified?

If the product is software and a candidate for the DECUS Program Library, have the appropriate forms been completed and submitted?

2.4.7 Phase 5 – Product Retirement (Service Continues)

Objectives: Ensure implementation of the Product Phase Down Plan(s), continue to monitor customer needs, and develop Services Phase Down Plan.

2.4.7.1 Phase 5 Activities

Evaluate assumptions and requirements since the Phase 4B Exit and communicate significant changes to the Product Phase Down Team and appropriate approval bodies.

Ensure that the Product Phase Down Plan developed in Phase 4B is implemented.

Update Product Phase Down Plan with detailed information.

Ensure that Services Marketing develops a Services Phase Down Plan. See Chapter 3 Marketing.

Publish Sales Update article announcing the decision for and conditions of the Product Phase Down.

Conduct a Post–Life Cycle Review.

Remove product from the Price Book and place in the "Service Only" category in the Price File.

Submit Product Phase Down Plan updates to Engineering Product Planning. Notify all affected parties worldwide that Digital plans to phase out sales (and sometimes support of) this product.

Notify the Chief Engineer's Office when the hardware or system product is no longer offered for sale.

Coordinate activities between Manufacturing, Sales, and Services to manage the Product Phase Down Plans.

Conduct a post-life cycle analysis to determine how successfully the product met its Phase 1 Business Plan metrics.

Execute Product Phase Down Plans and adjust as required.

2.5 REQUIRED PRODUCT MANAGEMENT DOCUMENTS

The overview and outline contained in this section serve as guidelines for creation of the Product Requirements Document used by the Product Manager in support of the Phase Review Process. The content, style, and scope of the document described here may vary for hardware and software products. The outline presents the minimum requirements for Product Requirements Documents submitted for Phase Exit approval.

NOTE

Online versions of this outline are available as a VAX DOCUMENT .SDML file and an ASCII file from Standards and Methods Control. Use the following file specification to obtain outlines for the Product Requirements Document.

JOKUR::PHASE_REVIEW:PRODUCT_REQ_PLANS.SDML
JOKUR::PHASE_REVIEW:PRODUCT_REQ_PLANS.TXT

Contact JOKUR::SMC regarding problems copying these files.

2.5.1 Product Requirements Document

OVERVIEW

The Product Requirements Document defines goals for the product in the market place and coordinates worldwide Engineering activities to meet those goals. The document is developed during Phase 0 updated during Phase 1 to define significant activities, deliverables, and schedules. It's purpose, characteristics, audience, and relationship to other corporate activities are described below.

Purpose:

Provide a detailed description of the primary product features and functions intended to satisfy critical needs and success factors identified by market requirements. The document forms the base line for the product specification.

Desired Characteristics:

- Describe the product and how it fits within Digital's product strategy.
- Identify product features and functions intended to satisfy market needs and critical success factors.
- Identify exceptions to Digital standards.
- Identify interdependencies with other products.
- State performance metrics of software and/or hardware.
- Identify major competition.
- Define product transfer costs where appropriate.
- Present the information in a format that shows direct correlation of market requirements and critical success factors to proposed features and functions.

PRODUCT REQUIREMENTS DOCUMENT OVERVIEW (continued)

Audience:

- All functional groups that develop, support, or interface to the product. (Engineering, Manufacturing, Marketing, Sales, CSSE)
- Appropriate review and approval organizations.

Who is Responsible:

- The designated Product Manager with input from Marketing and Engineering.

When Required:

Created during Phase 0.

Relationship to Other Activities:

- Phase 0 Business Plan.
- Alternatives and Feasibility Study.
- Market Requirements Section of the Marketing Plan.

Where Recorded:

- Engineering Product Planning (For Top 100 Products).
- Business Unit (or group sponsoring the product).

PRODUCT REQUIREMENTS DOCUMENT OUTLINE

The following is a suggested outline for the Product Requirements Document.

1.0 EXECUTIVE SUMMARY

A brief summary of the key product aspects that meet stated marketing requirements and critical success factors, and that put this product into perspective as a Digital offering. This section should include summaries of marketing requirements, product requirements, product strategy and product interdependencies.

1.1 Product Goals

- What are the key product features?
- Where does this product fit into Digital's strategy?
- What are the metrics for measuring proposed functionality against customer expectations?
- What are the key performance requirements?
- What are the key compatibility requirements?
- What are the key architectural growth requirements?
- What are the key strengths and weaknesses of the proposed product compared to external (competition) and internal (other Digital) products?
- What are the key innovative areas to protect and maintain intellectual property rights?

1.2 Product Non-Goals

- What are the non-goals for this product?
- What requirements will be put off for the next version of this product?

1.3 Risks and Contingencies

- What are the risks associated with this product?

PRODUCT REQUIREMENTS DOCUMENT OUTLINE (CONTINUED)

2.0 PRODUCT CAPABILITIES

Present the requirements for the product based on input from Marketing, Manufacturing, Sales, and Customer Services (through their required documentation). The product requirements and features of this product should be prioritized according to the following scheme:

- a. **ESSENTIAL** – Version n.0 of the product cannot be shipped without this feature. It is a critical feature that, if omitted, would cause most customers not to purchase the product and would also cause major damage to the customers' perception of Digital's strategy.
- b. **IMPORTANT** – Version n.0 of the product should include this feature unless its inclusion jeopardizes the time-to-market goal. The lack of this feature may cause certain customers not to purchase the product, either because it is a feature that is available and used often in current products, or because it is a feature that they have requested and been promised for a long time. This feature must be included no later than Version m.0.
- c. **DESIRABLE** – Version n.0 of the product can be shipped without this feature, but it should be included as soon as possible in a follow-on release. The lack of this feature may cause some customers not to purchase the product and be a source of customer complaint.
 - What are the key product features? Why do they exist?
 - What will this product (or version of the product) not do?
 - What can be observed from outside the product by users, other hardware, and other software?
 - What are the product's commands?
 - How does the product integrate with other products?
 - What is the product's interface design?

PRODUCT REQUIREMENTS DOCUMENT OUTLINE (CONTINUED)

3.0 ENVIRONMENT

- What is the environment in which the product operates (physical, user, other products)?
- What specifications contain details about the product's environment?

3.1 Users – Target Customers

Develop a user profile to match the skill levels and work habits in the user environment and the product being designed for the environment.

- Who are the target user(s)?
- What are the user's background and skill levels?
- What is the user workflow pattern?
- How does this product satisfy the needs of the target user(s)?
- How will the user use this product?
- Who will purchase this product?

3.2 Hardware Compatibility

- What Digital or non-Digital hardware is required to use this product? Does this product support the required hardware?
- What Digital or non-Digital terminals and printers does this product support?

3.3 Software Compatibility

- What software is required by this product?
- With what operating systems can this product run?
- What layered software, application software, and third-party software are required for this product? Does this product support?
- What distributed software (clusters, networks, communications) can work with this product?
- What products are dependent on this product (hardware, software, and services)?
- What software is dependent on this product?

PRODUCT REQUIREMENTS DOCUMENT OUTLINE (CONTINUED)

4.0 PUBLICATIONS AND TRAINING

4.1 Publications

- What documentation and other publications are required for the product?
- What is the purpose and contents of each book in the publication set for the product?

4.2 Training

- What training will be available for the product?
- Does the sales force need training on the product?
- Do software specialists need training on the product?

5.0 PACKAGING

- What aspects of the initial presentation and appearance of the product are desired by the user?
- What is the packaging of the product, including hardware, software, documentation, and shipping containers?
- How will the product be available?
- What kits will be required for the product and what will they contain?
- On what media will product software be distributed?
- Will the documentation conform to *DEC STD 073-0 Manufacturing and Packaging for Publications*?

6.0 INSTALLABILITY

- What does the user desire of the product from the time the package is opened to the time the product is used for the purpose in which it was purchased?
- What needs to be done to get the product up and running at the customer's facility?
- What are the goals that allow easy installation of the product?
- What is the projected installation time for the product?
- What installation guidelines should be followed for the product?

PRODUCT REQUIREMENTS DOCUMENT OUTLINE (CONTINUED)

7.0 EASE OF USE

Ease of use requirements are measured in terms of user performance and satisfaction, including the following:

- How can the human interface of the product be tailored to fit the needs of the target user?
- How easy will the product be to use?
- What features make the product easy to use?
- What are the on-line HELP features for the product?
- Will the product use graphical interfaces?
- Into what languages must this product be translated to make it acceptable in the targeted markets?

8.0 PERFORMANCE

- What are the desired performance characteristics of the product's hardware and software under both normal and extreme operating conditions?
- What are the product's memory requirements?
- What are the product's speed requirements for executing specific tasks?

9.0 RELIABILITY

- What are the desired characteristics that affect the user's ability to get tasks accomplished in a dependable, predictable manner?
- How long, typically, will it be between failures of the product (in terms of hours or commands?)

PRODUCT REQUIREMENTS DOCUMENT OUTLINE (CONTINUED)

10.0 SERVICE AND MAINTENANCE

- What are the desired characteristics that enable ease of problem diagnosis and correction of the product?
- What features make the product easy to maintain?
- What is the Basic Monthly Cost (BMC) goal for the product?
- What is the planned interval between tested releases?
- What are the requirements for maintenance update procedures?
- What is the desired maintenance service goal for this product?
- What support services will be available to maintain the product?

11.0 MANUFACTURABILITY

- What hardware, software, and documentation needs to be produced?
- Where will manufacturing occur worldwide?
- What special capital equipment is required for manufacturing the product?

12.0 COMPATIBILITY

12.1 Product Compatibility

- What are the desired characteristics that enable the user to move to the product from existing products without undue disruption, and to easily use the product with other Digital and non-Digital products.
- What are the areas of compatibility and incompatibility with existing Digital and non-Digital products?

12.2 Standard Conformance

- How does the product conform to the following:
 - Digital standards?
 - International standards?
 - Industry standards?
 - Installation standards?

PRODUCT REQUIREMENTS DOCUMENT OUTLINE (CONTINUED)

13.0 EVOLVABILITY

- What external (vendor) or internal (Digital) products will the product replace?
- What external or internal products will replace the product?
- What are the desired characteristics that enable the product to be adaptable to suit a changing environment?
- What are the requirements that allow customers to modify the product to their own needs?
- Does the product require a capability to be extended and transported for migration to other processors or operating systems, such as Ultrix-32 or MS-DOS?

14.0 INTERNATIONALIZATION

- What are the requirements for internationalization of this product? Refer to the Internationalization Plan from International Engineering Development (IED) .
- Does the product follow guidelines provided by International Engineering Development (IED)? Refer to the following documents:
 - EL-SM498-00, *Producing International Products Handbook*
 - EL-ENGRS-OM, *Internal Guide to Digital Organizations*

PRODUCT REQUIREMENTS DOCUMENT OUTLINE (CONTINUED)

15.0 CRITICAL SUCCESS FACTORS

- What are the product's critical dependencies?

15.1 Costs

- What are the proposed transfer cost goals for the product?
- What are desired constraints associated with the development cost to Digital?
- What are the desired constraints associated with the product cost to the user?
- What manpower and equipment resources are required to develop the product in a timely fashion?

15.2 TIMELINESS

- What are the constraints associated with the delivery schedule of the product?
- What are the requirements (constraints) that must be fulfilled for the product to be acceptable?
- How is the product dependent on other hardware and software development projects? What are their schedules?
- What is time frame (window of opportunity) to develop the product to generate an adequate return on investment?
- What are the tradeoffs among product features, or between features and schedule demands?
- What are the guidelines for making tradeoff decisions?
- What are the additional special constraints and tradeoff priorities, if any, assigned to the goals, capabilities, and external characteristics described in this Product Requirements Document?
- What are the possible tradeoffs that can and cannot be considered in meeting the goals described in this Product Requirements Document?

PRODUCT REQUIREMENTS DOCUMENT OUTLINE (CONTINUED)

16.0 OUTSTANDING ISSUES

List the following in chronological order, by required completion date:

- Outstanding issues in order of importance
- Names of people responsible for resolving issues
- Completion dates

As issues are resolved, document the resolution of the issue in this document and date the item in this section. All outstanding issues should be resolved before Phase 0 commitment to this Product Requirements Document.

17.0 INTELLECTUAL PROPERTY PROTECTION

- Are innovative technologies being considered for patent invention disclosures?
- Are product trademarks being developed to maximize market pull produced by successful trademarks?

MARKETING

3.1 PURPOSE

Marketing uses the Phase Review Process as a tool to manage products and systems throughout their life cycle in order to meet market requirement with timely product introductions, mid-life enhancements, and quality phase down support.

The Marketing Plan documents the goals set for the product in the market place and coordinates the worldwide activities to meet those goals. Where a fundamental choice has been made, the plan should document the reasons for making it. The Marketing Plan should not document all the data and understanding on which the plan is based.

The Phase Review Process provides a forum for integration of Industry, Channels, Services, Product Marketing Group (PMG), Base Product Marketing, European Systems Strategy Marketing, and GIA Marketing Plans.

3.2 FUNCTIONAL RESPONSIBILITIES

It is Marketing's role to understand customers' needs worldwide and translate those needs into the best solutions strategy that maximizes Digital's ability to profitably address them.

The Marketing member of the Product Team is responsible for gathering information from applicable marketing organizations and the three Geographies (Europe, General International Area, and U.S.). Marketing functions and responsibilities are distributed across a number of organizations – Base Product Marketing, Product Marketing, Industry Marketing, Channels Marketing, Field Service Marketing, European Systems Marketing, and GIA Marketing.

3.2.1 Base Product Marketing

Base Product Marketing (BPM) focuses on marketing a specific set of products and is part of the Product Business Unit (PBU) that owns the product.

The designated PBU Product or Marketing Manager, with assistance from corporate marketing organizations, is responsible for the Marketing Plan. The Marketing Plan describes the marketing context in which the product is developed. The plan shall include:

- Identification and quantification of market opportunities that offer profitable and/or strategic business opportunities to the Corporation worldwide.
- Presentation of evolving product and service requirements of customers, segmented according to the Digital organizational structure (Geographies, Channels, Services, Industries, and PMGs).
- Determination of the potential for Digital's competitive advantage and development of an overall competitive positioning.
- Definition of market strategy, positioning, and messages.
- Specific marketing activities and programs.

3.2.2 Marketing Advisory Board (MAB)

The Marketing Advisory Board (MAB) is the vehicle for the initiation of formal interaction between the Product Business Units (PBUs) and the PMG, Industry, and Services Marketing groups for implementation of the Phase Review Process. The process for MAB involvement with individual products is described below.

On a regular basis MAB reviews the Top 100 Products, identifies Strategic Marketing Products, and notifies the Product Managers. For these Strategic Products:

- The full MAB or a smaller subset of the marketing groups represented on the MAB reviews the product during the Phase Review Process.
- MAB identifies a Team that will be directly involved with Base Product Marketing (BPM) in the development of the Marketing Plan and agrees on an appropriate, cross-functional marketing strategy and action plan.
- The Marketing member of the Product Team informs the MAB Team of the Phase Exit date at least one month prior to the Phase Review Meeting for Phases 0 and 1, and no less than two weeks prior for Phases 2 through 4B. In addition, the Marketing member of the Product Team is required to provide to the MAB Team review copies of the Business Plan, the Marketing Plan, and the Sales Plan.
- The MAB Team represents marketing groups at Phase Exit Reviews.

3.2.3 Product Marketing

The Product Marketing Group (PMG) is responsible for integrating Base Products with vertical or horizontal applications and marketing these as complete solutions to customers' computing problems.

PMG engineers integrate solutions in the Systems Engineering function. Systems Engineering provides generic product requirements in the context of Base Products. In addition, the PMG represents Industry, Channels, and Services Marketing in the Phase Review Process.

Product Marketing Groups are responsible for:

- Defining product requirements in the context of base platforms that meet the needs of all marketing groups (PMG, Industry, Channels, and Services).
- Communicating competitive information in an application context to BPM.
- Defining Solution Systems that integrate the product and characterizing them, when applicable.
- Developing and implementing an Applications Characterization Plan when applicable.
- Supporting announcements by:
 - Participating in Announcement Strategy Committee (ASC).
 - Integrating announcement into PMG programs.
 - Providing PMG messages for input to Sales Training and announcement literature.
 - Identifying strategic accounts for marketing seed units and testimonials.
 - Providing the following specific PMG deliverables:
 - Communication content
 - Positioning
 - Messaging
 - Application mapping
 - Performance characterization
- Reviewing the Top 100 Products as members of the Phase Review Committee.
- Forecasting volumes through the 8-Quarter Volume Plan.
- In addition to the MAB-initiated process for Strategic Marketing Products, PMG is responsible for directly supporting and contributing to the Marketing Plan when:
 - A PMG has a specific, strong interest in a product.
 - Industry Marketing has a specific, strong interest in the product.
 - Requested by the Product Marketing Strategy Committee (PMSC) or Executive Committee.

3.2.4 Industry Marketing

Industry Marketing acts as the team leader in driving the development of the Field Marketing Plan organized by industry, by specific account, and by application opportunity. Industry Marketing is responsible for clearly defining the "mission critical applications" in each of the targeted industries, and articulating the needs of those industries to Base Product Marketing, Product Marketing, Channels Marketing, Sales, and Services.

Industry Marketing is responsible for:

- Identifying Strategic Marketing Products for each industry during the MAB review of the Top 100, including:
 - Providing industry strategy information and market requirements for targeted industries during Phase 0.
 - Identifying "mission critical applications" for targeted industries.
 - Reviewing Phase 0 Marketing Requirements and Phase 1, 2, and 3 Marketing Plans.
 - Contributing to the Industry Programs section of the Marketing Plan during Phases 1 and 2.
- Participating in Field Test Site selection for all products.
- Directly supporting announcements by:
 - Participating in Announcement Strategy Committee (ASC).
 - Integrate Announcement into Industry Marketing programs.
 - Providing industry messages for input into sales training and the announcement literature.
 - Identifying strategic accounts for marketing seed units and testimonials.

3.2.5 Channels Marketing

Channels Marketing is responsible for developing indirect channels and marketing Digital products to and through these channels. Specifically, Channels Marketing's goals are to:

- Articulate the product needs of indirect channels to Digital.
- Develop and execute a comprehensive strategy for how indirect channels will sell Digital's products to non-DBA accounts.

A Digital Business Agreement (DBA) is a contract a customer signs with Digital to purchase a certain amount of Digital's products, qualifying the customer for discounts on those products.

- Continue implementation of the Partners Strategy to build the Corporate Applications Portfolio.
- Provide promotion and education to the marketplace, and within Digital, on how this All-Channels Strategy creates a competitive edge.

Channels Marketing is responsible for:

- Participating in PAC and Marketing and Strategy Committee (MSSC) to ensure that Digital's products are priced, discounted, and positioned properly for the indirect channels.
- Directly supporting product announcements by:
 - Participating in the ASC and in-field announcement activities by ensuring that indirect channel messages are included.
 - Integrating announcement into Channels Marketing programs.
 - Providing Channels messages for input into sales training and announcement literature.
 - Identifying strategic accounts for marketing seed units and testimonials.

3.2.6 Field Service Marketing

Customer Services Systems Engineering (CSSE) Marketing is responsible for the strategic marketing of Digital's services for Field Service. Note: the Maintainability Engineering role of CSSE is defined in Chapter 7 of this manual.

CSSE Marketing is responsible for:

- **Writing and distributing the Field Services Market Appraisal on an annual basis.**
- **Supporting product announcements.**
- **Working with CSSE Product Managers, BPM, and Geographies to define services for products, and strategic programs.**
- **Defining the service market strategy, positioning, messages, and ensure integration with BPM.**
- **Supporting Service Product Managers and Geographies in the pricing of services.**
- **Identifying an individual to be a member of the MAB Team, which assists in the development of the Marketing Plans. The extent of involvement will be product dependent.**
- **Working closely with Educational Services and Software Services as their activities influence the Field Service Business.**

3.2.7 European Systems Marketing

European Systems Marketing is responsible for developing:

- Tactical programs that directly affect short term goals.
- Longer term strategic programs, including development and implementation of the European Market and Product Requirements Process.

This task is driven by the Systems Strategy Market Planning, group, which shall:

- Review the Central Engineering Top 100 list (for products in Phase 0) and provide a prioritized list of strategic Product and Market requirements for Europe.
- Collect inputs from Country Marketing, European Industry Marketing, Channels Marketing, and International Engineering.
- Analyze any gap between Corporate plans and the European priority list for a Central Engineering/PBU/PMG response to this gap.

3.2.8 GIA Marketing

GIA Marketing is organized into the following groups:

- Industry Marketing
- Product Marketing
- Software Services Marketing
- Field Service Marketing

These groups parallel Corporate Marketing efforts with the intent of identifying and supporting specific, unique requirements within the diverse markets of GIA.

GIA has established a Product Strategy Committee (GIAPSC) as a subcommittee to the GIA Management Committee (GIAMC). GIAMC includes the Vice President of GIA and the country managers. The GIA Product Strategy Committee is chartered to ensure that GIA has products for its unique requirements.

The mission of the Product Strategy Committee is to affect GIA product strategy supporting the Geographies' Long Range Plans (LRPs), and maximize the return on engineering investment.

GIA Product Strategy Committee objectives ensure that:

- Regional requirements and priorities are reflected in overall GIA product specific strategies.
- GIA product strategy is responsive to GIA Intergrated Industry Marketing Plan (IIMP) submissions.
- The GIA product strategy is integrated into GIA's Central Engineering, Product Marketing Groups, Software Services Engineering (SWS/E), and Computer Special Systems (CSS) Long Range Plans.
- The GIA Product Strategy Committee evaluates the impact of future corporate products and adapts the GIA product strategy as required.
- The Product Strategy Committee provides a forum to review major GIA specific engineering proposals as they effect the GIA product strategy.

In support of the Phase Review Process, the GIA Product Committee will:

- Identify and make visible to Central Engineering product modifications and gaps that effect the GIA Product Strategy.
- Act as an influencing body on behalf of GIA on Corporate Product Strategies and priorities.
- Understand the requirements to support third party applications to ensure that they are incorporated into the GIA Product Strategy.

The GIA Product Strategy Committee membership includes managers of Software Systems Engineering (SWS/E), GIA Engineering, Computer Special Systems (CSS), Product Marketing, Product Planning, Industries Marketing, Asian Base Systems Software, and Software Systems Marketing. GIAPSC can be contacted through Les Dole, the Product Strategy Committee secretary. (See ELF for contact information.)

3.3 MARKETING ACTIVITIES AND DELIVERABLES

Marketing's responsibilities throughout a product's life cycle are shown in Figure 3-1.

Figure 3-1: Marketing Activities and Deliverables

PHASE						
0	1	2	3	4A	4B	5
←———— MARKETING PLAN —————→						
Market Requirements and Strategy	Detailed Market Plan	Pre-product Announcement		Post-product Announcement		
←———— Market Definition and Description —————→						
←———— Marketing Objectives and Strategies —————→						
←———— Situational Analysis, Including Competitive Analysis and Positioning —————→						
←———— Marketing Tactics (Programs) (Product Features, Pricing, Distribution, Promotion) —————→						
OBJECTIVE WITHIN PLAN - PLANNING						
Marketing Objectives and Strategies	Marketing Programs, Volumes, and Pricing	Intro and Announcement Plan	Product Life-Cycle Strategy	Phase Down Plan	Product Replacement Plan	
OBJECTIVE WITHIN PLAN - EXECUTION						
	Review Specifications Against Requirements	Product Announcement Plan	Product Announcement and Information	Marketing Programs	Product Phase Down	

Fig3_1

3.4 EXECUTING AND EXITING EACH PHASE

Each phase in the product's life cycle provides a mechanism for the systematic review of proposals, plans, and results in a manner that allows for controlled funding, resource allocation, and project approval.

For each phase in this chapter, there is a list of exit criteria, supporting activities, and a set of questions that serve as memory joggers for the Marketing Manager of the project. These questions are not all-encompassing — their purpose is to stimulate the thought process and surface issues as early as possible in each phase.

3.4.1 Phase 0 – Strategy and Requirements

Objective: Define and document Market requirements and strategies.

3.4.1.1 Phase 0 Exit Criteria

Market requirements and strategy section of the Marketing Plan written, reviewed, approved, and published. (This document written with input from PMG, Industry, Services, Channels, European Systems Marketing, and GIA Marketing.)

Application portfolio matches the marketing strategy.

Customers' service needs identified.

Approved Phase 0 Marketing Plan submitted to the PBU or sponsoring organization for archiving. Copy of the plan submitted to Engineering Product Planning, for Top 100 Products only.

3.4.1.2 Phase 0 Activities

Perform worldwide Market Analysis with input from European Systems Marketing and GIA Marketing.

Provide an understanding of targeted customers segmented according to the Digital organizational structure (Geographies, Channels, Industries, Services, and PMGs).

Quantify opportunity and present potential for Digital's competitive advantage.

Document market requirements for the product, including internal and external standards and international requirements.

Provide Market Requirements Chapter of the Marketing Plan.

Position the product.

For Strategic Marketing Products identified by MAB for review:

- Involve the MAB Team and European Systems Marketing in the development of the Marketing Plan.**
- Ensure that the MAB Team and European Systems Marketing is notified one month prior to the Phase 0 Exit date.**
- Provide review copies of the Business, Marketing, and Sales Plans to the MAB Team and European Systems Marketing two weeks prior to the Phase 0 Exit Review.**

Define the market strategy, including:

- Target audience
- Pricing
- Promotion
- Messaging
- Market share and tentative volumes
- Geography, Industry, PMG, and Channel segmentation
- Services
- Impact on existing marketing programs

Inform MAB and European Systems Marketing when product appears on Phase Review Committee (PRC) agenda.

3.4.1.3 Phase 0 Memory Joggers

Who are the customers we want to target, according to the Digital organizational structure (Geographies, Channels, Industries, Services, and PMGs)? Why? Why not?

Who is the competition?

What is the product "vision"?

What are the features and attributes of the product that provide Digital's competitive advantage? Have the following been considered?

- Functionality
- Relevant customer performance metrics
- Physical environment
- Cost model
- Cost of ownership
- Primary user interface
- Display requirements
- Computing environment
- Data model

- **Availability/Reliability requirements**
- **Computing services needed**
- **Upgrading requirements**
- **Services provided**
- **Vendor reputation**

Does the applications portfolio, when applicable, match the marketing strategy?

Does the product require development of a significantly different application performance testing effort? Include marketing personnel in this consideration.

Do product or application characteristics exist that require a significant training effort? Include marketing personnel in this consideration.

Has the opportunity been sized in terms of market share, revenue, and units?

Has the product been positioned relative to other Digital products and the competition in terms of functionality, performance, and price?

If there are questions on product positioning, have you consulted the MAB?

Why develop the product?

What Solution Systems require this product?

With what standards (Digital, International, de facto, customer) must the product comply?

What requirements are driven by the environment in which the product will be used?

What are the distribution requirements?

What are the key market messages?

Do the Industry Marketing groups support the industry strategy?

Has PMG agreed to the applications strategy?

Has Services Marketing agreed to the service delivery strategy?

Does Channels Marketing support the channels strategy?

Have market and technology risks and dependencies been identified?

Does this product replace an existing Digital product? If so, identify the replacement product.

3.4.2 Phase 1 – Planning and Preliminary Design

Objective: Prepare a detailed Marketing Plan that includes specific programs.

3.4.2.1 Phase 1 Exit Criteria

Assumptions and requirements evaluated since the Phase 0 Exit. Market requirements updated, if required, and significant changes communicated to the Product Team.

A detailed Marketing Plan, including specific marketing programs, written, reviewed, approved, and published.

Marketing Plan Executive Summary available for the Phase 1 Business Plan.

Industry Marketing in agreement with the proposed selection of Field Test Sites.

Estimated number of units required for Phase 2 and Phase 3 activities supplied to Product Manager.

Approved Phase 1 Marketing Plan submitted to the PBU or sponsoring organization for archiving. Copy of the plan submitted to Engineering Product Planning, for Top 100 Products only.

3.4.2.2 Phase 1 Activities

Update Marketing Plan from Phase 0 (including input from European Systems Marketing, and GIA Marketing).

Present marketing objectives and strategies (including pricing, promotion, competitive positioning and distribution), along with preliminary details for specific programs and tactics for product.

Define the extent to which customers will view this product as complementing or overlapping other Digital products.

Provide input for the Sales Plan and Business Plan of Record.

Ensure that marketing goals are detailed and specific, including volumes, pricing, distribution, and promotion.

Define the set of cross-functional and external marketing programs required to merchandise the product, or to impact existing programs.

Define an Applications Characterization Plan that ensures availability of appropriate product positioning.

Review and obtain approval for the Marketing Plan from all contributing organizations.

For Strategic Marketing Products identified by MAB for review:

- **Involve the MAB Team and European Systems Marketing in the development of the Marketing Plan.**
- **Ensure that the MAB Team and European Systems Marketing is notified one month prior to the Phase 1 Exit date.**
- **Provide review copies of the Business, Marketing, and Sales Plans to the MAB Team and European Systems Marketing two weeks prior to the Phase 1 Exit Review.**

Ensure that marketing input has been provided to the PBU for the creation of the Proprietary Information disclosure (PID).

Develop a plan for units intended for characterization, application development and conversion, and promotion.

If required, establish a Marketing training program and obtain required resources.

3.4.2.3 Phase 1 Memory Joggers

Have market conditions changed? If so, have they changed our plans?

Have the product goals in terms of market share, revenue, and units for each year of the product's life cycle been forecasted?

Have risks and dependencies been quantified in terms of impact on product goals?

Has product promotion been defined in terms of specific programs, and have the owners of these programs been identified?

Has the type of product announcement been determined? Include input from European Systems Marketing, and GIA Marketing.

Have metrics been defined by which product success is known?

Have resource and the budget requirements been established and approved for each program?

Are all contributing organizations firmly committed to the programs?

Has the Product Manager received input for the Pre-FRS Unit Plan?

3.4.3 Phase 2 – Design and Implementation

Objective: Develop announcement plans, messages, activities, and positioning in close cooperation with the Announcement Consultant or Product Manager.

3.4.3.1 Phase 2 Exit Criteria

Assumptions and requirements evaluated since Phase 1 Exit. Marketing Plan updated, if required, and significant changes communicated to the Product Team.

Marketing Plan updated to include detailed announcement messages and activities.

Approved Phase 2 Marketing Plan submitted to the PBU or sponsoring organization for archiving. Copy of the plan submitted to Engineering Product Planning, for Top 100 Products only.

3.4.3.2 Phase 2 Activities

Review, revise, and provide further detail concerning the marketing objectives, strategies, tactics and programs for the product.

With Corporate Product Operations, determine applicability of the *Corporate Product Introduction Guide* to the product.

Provide input for Sales Plan and Business Plan.

Update Marketing Plan from Phase 1.

Develop announcement messages.

For Strategic Marketing Products identified by MAB for review:

- **Involve the MAB Team in the development of the Marketing Plan.**
- **Ensure that the MAB Team is notified at least two weeks prior to the Phase 2 Exit date.**
- **Provide review copies of the Business, Marketing, and Sales Plans to the MAB Team at least two weeks prior to the Phase 2 Exit Review.**

Review and obtain approval of the plan from all contributing organizations.

Ensure that marketing input has been provided to the PBU for the creation of the Proprietary Information Disclosure (PID). See *Corporate Proprietary Information Disclosure Policy*.

3.4.3.3 Phase 2 Memory Joggers

Have market conditions changed? Has the schedule changed? If so, do we need to revise the marketing strategy? Are these changes reflected in the applicable plans?

Have announcement messages been communicated to the Product Captain?

Have the contributing organizations committed to supporting the Marketing Plan?

If the *Corporate Product Introduction Guide* applies, has the Announcement Captain and Announcement Team been identified?

Have targeted Industry Marketing groups incorporated the product announcement into their field programs?

Is Channels Marketing prepared to support the channels strategy?

Is Field Services Marketing prepared to support the service delivery strategy?

3.4.4 Phase 3 – Qualification

Objective: Develop a detailed product life cycle, including pricing, mid–life kickers, and phase down.

3.4.4.1 Phase 3 Exit Criteria

Assumptions and requirements evaluated since Phase 2 Exit. Marketing Plan updated and significant changes communicated to the Product Team.

Applications characterization executed.

Marketing Plan updated to include detailed Product life cycle Program with pricing, mid–life kickers, and phase down.

Approved Phase 3 Marketing Plan submitted to the PBU or sponsoring organization for archiving. Copy of the plan submitted to Engineering Product Planning, for Top 100 Products only.

3.4.4.2 Phase 3 Activities

Review, revise, and detail marketing objectives, strategies, tactics, and programs for the product.

Provide input for the Sales Plan and Business Plan.

Update Marketing Plan from Phase 2.

Develop a detailed Product Life Cycle Program.

For Strategic Marketing Products identified by MAB for review:

- Involve the MAB Team in the development of the Marketing Plan.
- Ensure that the MAB Team is notified at least two weeks prior to the Phase 3 Exit date.
- Provide review copies of the Business, Marketing, and Sales Plans to the MAB Team at least two weeks prior to the Phase 3 Exit Review.

Implement Applications Characterization Plan.

Work with appropriate Sales, PMG, and Industry Marketing organizations to select testimonials for announcement.

Distribute applications characterization information to the appropriate parties in time to impact announcement and field training activities.

3.4.4.3 Phase 3 Memory Joggers

Have market conditions changed? If so, have plans been changed?

Has final pricing, product naming, and product's life cycle been determined?

3.4.5 Phase 4A – Ramp-Up

Objective: Review and revise marketing objectives, strategies, tactics, and programs for the product.

3.4.5.1 Phase 4A Exit Criteria

Assumptions and requirements evaluated since Phase 3 Exit. Marketing Plan updated to reflect market and product changes and significant changes communicated to the Product Team.

Approved Phase 4A Marketing Plan submitted to the PBU or sponsoring organization for archiving. Copy of the plan submitted to Engineering Product Planning, for Top 100 Products only.

3.4.5.2 Phase 4A Activities

Execute Marketing Plan.

Provide input for Sales Plan and Business Plan.

Update Marketing Plan and Announcement Plan as required by market conditions.

3.4.5.3 Phase 4A Memory Joggers

Have market conditions changed? If so, have plans been changed?

3.4.6 Phase 4B – Steady–State Operation

Objective: Describe the Product Phase Down Plan and possible replacement strategy.

3.4.6.1 Phase 4B Exit Criteria

Product assumptions and requirements evaluated since Phase 4A Exit.

Marketing Plan updated to include Product Phase Down and possible replacement strategy.

Approved Phase 4B Marketing Plan submitted to the PBU or sponsoring organization for archiving. Copy of the plan submitted to Engineering Product Planning, for Top 100 Products only.

3.4.6.2 Phase 4B Activities

Review marketing objectives, strategies, tactics, programs, and market performance of the product, and revise the Marketing Plan.

Propose product modifications and enhancements (mid–life kickers) as appropriate.

Update the Marketing Plan to include product replacement strategy.

Develop a detailed Product Phase Down Plan in association with Sales, Services, and other marketing organizations.

Provide input for the Sales Plan and Business Plan.

3.4.6.3 Phase 4B Memory Joggers

Have market conditions changed? If so, have plans been changed?

Is this the final product of the product family or is there a plan to replace it with another product?

What is the strategic reason for replacing the product?

Are there ongoing customer commitments or contracts that affect product phase down?

What are the international implications for product phase down, such as legal requirements and inventory. (Contact Jim Mills, International Engineering Development for more information. See ELF.)

3.4.7 Phase 5 – Product Retirement (Service Continues)

Objective: Implement Product Phase Down Plan and develop Services Phase Down Plan.

3.4.7.1 Phase 5 Activities

Document final customer and contract migration and support strategies for the Services Phase Down Plan.

Update Marketing Plan to include Services Phase Down and submit to Engineering Product Planning.

3.4.7.2 Phase 5 Memory Joggers

Have you considered:

- The Public Relations (PR) required for the Service Phase Down Plan?
- Other available programs (migration or trade-in) and communicated the existence of these programs to the customer base?
- What new or changed services are required for products as they approach their end-of-life?
- The legal impact of remaining contracts?

3.5 REQUIRED MARKETING DOCUMENTS

The overview and outline contained in this section serve as guidelines for creation of the Marketing Plan used by Marketing in support of the Phase Review Process. The content, style, and scope of the plans and documents described herein may vary for hardware and software products, and across Marketing Groups. The outlines present the minimum requirements for the Marketing Plan submitted for Phase Exit approval.

This section contains outlines for the following chapters of the Marketing Plan:

- 1.0 Executive Summary
- 2.0 Market Requirements
- 3.0 Market Strategy
- 4.0 Market Programs
- 5.0 Life Cycle Program

NOTE

Online versions of this outline are available as a VAX DOCUMENT .SDML file and an ASCII file from Standards and Methods Control. Use the following file specification to obtain the Marketing Plan outline.

```
JOKUR::PHASE_REVIEW:MARKETING_PLANS.SDML  
JOKUR::PHASE_REVIEW:MARKETING_PLANS.TXT
```

Contact JOKUR::SMC regarding problems copying this file.

3.5.1 Marketing Plan

OVERVIEW

The Marketing Plan documents goals set for the product in the market place and coordinates the worldwide activities required to meet these goals. The plan is a living document developed and updated during a product's life cycle to define significant activities, deliverables, and schedules. Its purpose, characteristics, audience, and relationship to other corporate activities are described below.

Purpose:

The purpose of the Marketing Plan is to:

- Optimize the revenue and profits that the Corporation will gain from the product.
- Document market programs needed to achieve the established goals.
- Identify and quantify market goals that present profitable and/or strategic business opportunities.

Desired Characteristics:

Presentation of market requirements from the customer's perspective.

Information that is continually updated as marketing intelligence improves and as marketing programs are initiated, reviewed, and/or modified.

MARKETING PLAN OVERVIEW (continued)

Audience:

BPM, Sales, PMG, Industries, Services, and Channels Marketing.

Who is Responsible:

The designated PBU product or Marketing Manager with assistance from corporate marketing organizations.

When Required:

A Marketing Plan is required for each Phase exit transition throughout a product's life cycle beginning in Phase 0 (with the exception of Phase 5 closure).

NOTE

A Market Requirements proposal can be prepared at any time throughout a product's life cycle to recommend further development, enhancement, or modification.

Relationship to Other Activities:

- **Business Plan** – The Executive Summary of the Marketing Plan is included in a product's Business Plan.
- **Product Requirements Statement** – The needs documented in the Market Requirements chapter of the Marketing Plan are translated into the product requirements detailed in the Product Requirements Statement.

Where Recorded:

- Engineering Product Planning.

MARKETING PLAN OUTLINE

1.0 EXECUTIVE SUMMARY – Chapter 1

(Written in Phase 0; updated in Phases 1, 2, 3, 4A, 4B, and 5)

Purpose: To communicate a concise, accurate overview of the market requirements, strategy, major dependencies, and risks.

Outline:

- 1.1 Strategy
- 1.2 Goals
- 1.3 Key success factors
- 1.4 Competitive advantage
- 1.5 Market forces
- 1.6 Pricing
- 1.7 Programs
- 1.8 Dependencies and risks

2.0 MARKET REQUIREMENTS – Chapter 2

(Written in Phase 0; updated in Phases 1, 2, 3, 4A, and 4B)

Purpose:

- To identify and quantify market opportunities that present potentially profitable and/or strategic business opportunities worldwide.
- To present the potential for Digital's competitive advantage.

MARKETING PLAN OUTLINE (continued)

Outline:

- 2.1 Opportunity
- 2.2 Needs
- 2.3 Requirements
 - Geographies
 - Industries
 - PMGs
 - Services
 - Channels
- 2.4 Competitive Issues
- 2.5 Market Forces

3.0 MARKET STRATEGY – Chapter 3

(Written in Phase 1; updated in Phases 2, 3, 4A, and 4B)

Purpose: To outline the course of action required to successfully penetrate, increase, or maintain desired market position or profitability.

Outline:

- 3.1 Business Objectives
- 3.2 Positioning
- 3.3 Volumes
- 3.4 Pricing
- 3.5 Life Cycle
- 3.6 Messages
- 3.7 Indicators
- 3.8 Measures of Success

MARKETING PLAN OUTLINE (continued)

4.0 MARKET PROGRAMS – Chapter 4

(Written in Phase 2; updated in Phases 3, 4A, and 4B)

Purpose: Integrate all marketing components into a comprehensive program for coordinated action at all marketing levels.

Outline:

- 4.1 Systems Engineering
- 4.2 Characterization
- 4.3 ACT programs
- 4.4 Industry programs
- 4.5 Services programs
- 4.6 Application Concession and Capture
- 4.7 Packaging
- 4.8 Proprietary Information Disclosure
- 4.9 Announcement and Introduction
- 4.10 Promotion and Merchandising
- 4.11 Competitive

Attack

Protect

MARKETING PLAN OUTLINE (continued)

5.0 LIFE CYCLE PROGRAM – Chapter 5

(Written in Phase 3; updated in Phase 4A, 4B, and 5)

Purpose:

The purpose of the Life Cycle Program is to define the Marketing requirements, activities, deliverables, and an implementation strategy for the remainder of the product's life.

Outline:

- 5.1 Pricing Adjustments
- 5.2 Mid-Life Kickers
- 5.3 Replacement Strategy
- 5.4 Indicators
- 5.5 Services

ENGINEERING

4.1 PURPOSE

Digital's Engineering function uses the Phase Review Process as a tool to:

- Propose product concepts for commercialization.
- Support development efforts funded through the Long Range Planning (LRP) and budget process.
- Manage and review the quality of Engineering plans that cross organizational boundaries.
- Facilitate the development of products on schedule and at budgeted cost, with expected functionality, manufacturability, and serviceability.
- Provide tangible evidence that the product meets its stated specifications and requirements.
- Improve product and system predictability.

4.2 FUNCTIONAL RESPONSIBILITIES

4.2.1 Development Engineering

Engineering is responsible for developing products consistent with the Corporate Product Strategy. These responsibilities include:

- Proposing product concepts for commercialization, including supporting projects and their budgets.
- Selecting appropriate technology to satisfy product requirements.
- Creating and implementing plans to specify, design, develop, test, release, and support worldwide products.
- Identifying the intellectual property content of products for legal protection consideration.

4.2.2 Support Engineering

Support Engineering provides ongoing technical support of released products, including ongoing maintenance of the design, implementation of Engineering Change Orders (ECOs), and Value Engineering (VE). Support Engineering shall deliver or participate in the development of the following information:

Design Reviews	Phase 0 through 4B
Phase Exit Reviews	Phase 0 through 4B
Product Support Transition Plan	Phase 1
Engineering Change Orders	Phase 3 through 4B
Value Engineering Proposals and Plans	Phase 1 through 5
Product Phase Down Plan	Phase 5

NOTE

Value Engineering activity may be planned in Phase 1 and initiated in Phase 2 on certain products.

4.3 ENGINEERING ACTIVITIES AND DELIVERABLES

Figure 4-1 shows Engineering activities and deliverables for the Phase Review Process.

Figure 4-1: Engineering Activities and Deliverables

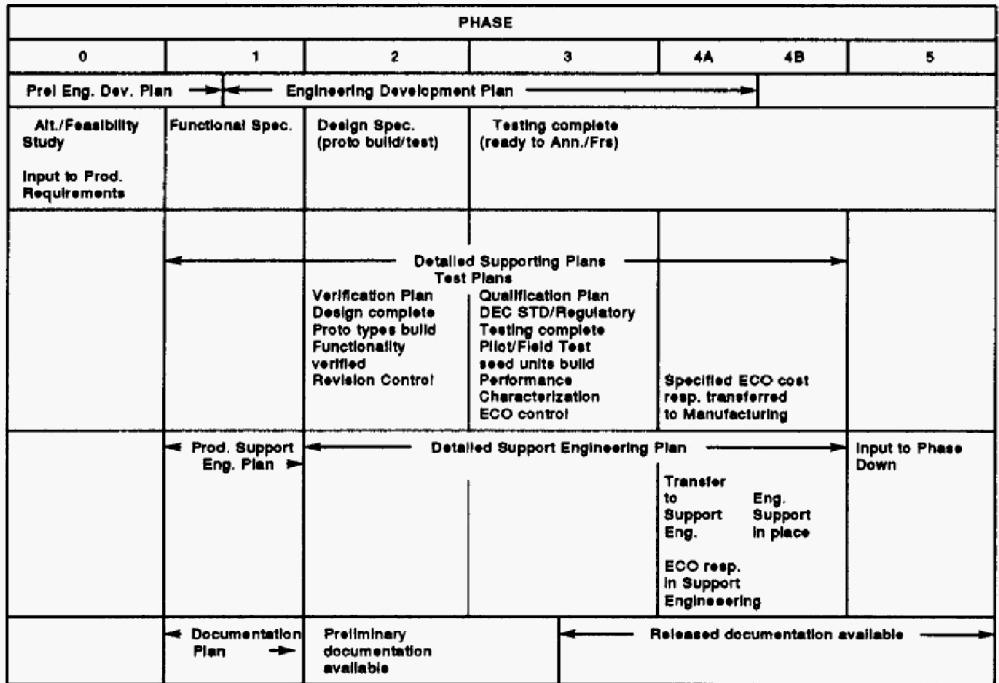


Fig4_1

4.4 EXECUTING AND EXITING EACH PHASE

Each phase in the product's life cycle provides a mechanism for the systematic review of proposals, plans, and results in a manner that allows for controlled funding, resource allocation, and project approval.

For each phase in the process, there is a list of Exit Criteria, supporting activities, and a set of questions that serve as memory joggers for the Engineering Manager of the project. These questions are not all-encompassing; their purpose is to stimulate the thought process and surface issues as early as possible in each phase.

4.4.1 Phase 0 – Strategy and Requirements

Objective: Propose products that take advantage of current or emerging technology; demonstrate technical feasibility of selected technologies through simulation, analysis, or modeling; satisfy market and product requirements; and fit the Corporate Product Strategy.

4.4.1.1 Phase 0 Exit Criteria

Project manager assigned by the Development Group with the authority and responsibility to carry out the project.

Alternatives and Feasibility Study written, reviewed, approved, and published.

Product's technical feasibility demonstrated.

The protection of the product's intellectual property rights coordinated through the Engineering Law Group.

Digital, industry, and country-specific standards and requirements for the Engineering Development Plan identified. Contact Domain Manager(s) as needed. For more information refer to the Internationalization Plan from International Engineering Development and the following standards:

- *DEC STD 066-3 Policy for Designing Products for All Countries Designated as Strategic Markets*
- *DEC STD 060-0 Design of Hardware Products to National and International Standards, Policies, and Responsibilities*

Preliminary Functional Specification (technical product proposal) written reviewed, approved, and published.

Preliminary Engineering Development Plan written, reviewed, approved, and published.

NOTE

The Preliminary Functional Specification and Preliminary Engineering Development Plan take into account identified requirements from:

- All countries designated as strategic markets (DEC STD 066-3)
- International Engineering Development (Internationalization Plan)
- Corporate Export and Trade (CE/T)
- Engineering Law Group
- Digital, industry or country-specific standards and requirements

Engineering Law Group contacted if development activities involve third parties. Appropriate agreements with third parties are in place.

Potential vendors identified and feasibility and costs evaluated for buyout products.

Engineering Executive Summary prepared for the Phase 0 Business Plan.

Copies of approved Phase 0 Engineering exit plans submitted to the Product Manager.

4.4.1.2 Phase 0 Activities

Evaluate and document alternatives and technical feasibility. What are the risks and how will they be managed?

Demonstrate that the critical aspects of the product are technically feasible and ready for development.

Obtain Internationalization requirements from the International Engineering Development (IED) Product Manager. (Contact Jim Mills in IED to locate this resource. See ELF for contact information.

Identify potentially protectable inventions or developments (Legal Protection Strategy).

Evaluate Manufacturing, Sales, and Service impact statements and factor into the Preliminary Functional Specification.

Provide technical input to the Product Requirements Document.

Describe the process methodologies (tools and processes) required to:

- **Design**
- **Test**
- **Manufacture**
- **Diagnose**
- **Transfer data between functions, such as Engineering and Manufacturing**

When valid hardware or system option and part numbers are required in the initial design, Contact the Chief Engineer's Office for assignment and approval of these hardware or system part numbers. Be prepared to discuss product architecture, functional design parameters and product packaging. For example, Engineering may need a hardware part number:

- **When the logic is completed**
- **When a valid list of component products needs Digital unique identity**
- **After prototype release**
- **Before releasing a product to manufacturing**
- **When engineering gets approval to build or sell**
- **When a buyout product has been approved**

4.4.1.3 Phase 0 – Memory Joggers

Are there sufficient clarity and detail in the Product Requirements document to create a complete Functional Specification?

Have the functional impacts and requirements from Marketing, Manufacturing, Sales, and Customer Services been considered?

Is the product consistent with the Engineering Long Range Plan (LRP) and the Corporate Product Strategy?

Do Phase 0 Engineering documents address the Internationalization requirements identified in the Internationalization Plan (I18N Plan)?

Have all aspects of the proposed product been examined for intellectual property content, (including architecture, design, operation, hardware components, software components, and process methodologies)? Have these aspects been reviewed by the PBU Intellectual Property Committee or equivalent and a decision reached to pursue protection?

Has appropriate intellectual property protection been pursued?

Have potential conflicts with patents, trademarks, and copyrights been researched?

Have the applicable Digital and external standards been identified and listed? Have the appropriate Domain Managers and standard owners been contacted to verify applicability of the identified Digital standards? Refer to *DEC STD 066-1 Technical Domains in the Product Development Process*.

Have you contacted the owners of standards that may apply to the product, but whose requirements will not be implemented?

Are there any design factors not currently addressed by Digital standards or external standards? How will you address these factors?

Have certification, regulatory, and performance requirements (based on market and product requirements) been defined?

Is the proposed design compatible with associated test equipment and methodologies? If not, is testing addressed in the Alternatives and Feasibility Study?

What new test tools or methodologies are required?

Have the process aspects of the project (process/method definition and tool selection) been reviewed by an appropriate group of independent process experts, or has the review been waived?

Are the product performance parameters, such as Mean Time Between Failures (MTBF), constrained by the manufacturing process or have they been determined by competitive product positioning? If the production process is a limiting factor, what process improvements are needed to meet product design goals? Who is addressing this issue?

What design tools will be used for each design stage? Who (what group) provides each tool and its support?

Have all process constraints to be incorporated in the product design, including manufacturing and test, been obtained from the process development organizations?

Have Manufacturing constraints been incorporated in the design tools to be used for use in development work? If not, who is addressing these issues and in what time frame are constraint-checking tools expected to be available?

On what libraries, such as component, model, and simulation, is the product dependent? From where will these libraries be supplied? Who supports the use and extension of these libraries?

Does the product involve new manufacturing and test processes that have not been used in past volume production? If so, what are these processes? Have they been tested in advanced development facilities? Who are the process development partners supporting the work?

How will you deal with manufacturing or process constraints if the design tools are not upgraded?

What changes (or inventions) is the product dependent on in current manufacturing physical technologies and test technologies? Who is driving these changes?

Who is extending the design tool and data transfer process to support changes to manufacturing physical technologies and test technologies?

What data will Manufacturing require to build the product?

What revision management, ECO, and manufacturing feedback processes will be used?

What product-specific data and schedule generation activities are required of the Product Team or other resources?

Is the Internationalization Plan available?

Has Product Safety Engineering assigned an engineer? Refer to the Phase 0 section of *DEC STD 119-5 Process for Design, Evaluation, Testing, and Certification of Hardware Products to Product Safety Requirements* for more information.

What is your overall methodology and design process (independent of design tools)?

Have the product's high-risk components been identified?

Have you initiated vendor-Digital contact with Purchasing?

Have vendors for crucial parts of the design been contacted and evaluated?

In what manner does the development of the following occur: design rules, timing analysis, logic entry, physical partitioning, physical layout, physical verification, physical-to-logical reconciliation, and technology characterization?

How are the mechanical and analog design performed? What tools are required?

How are electrical, thermal, and reliability analysis and verification performed? (What tools or groups will be part of this process?)

What is the Product Test Strategy; Engineering Test Strategy; Manufacturing Test Strategy; and Field Service diagnostic, test, and repair strategies?

What are the Problem Free Installation (PFI) goals?

What are the Mean Time To Repair (MTTR) goals?

What are the Mean Time Between Failures (MTBF) goals?

What are the Availability (from a customer viewpoint) goals?

Have the computing and database requirements for developing the product been decided? How has this been validated?

What changes are required in other products for this product to function most efficiently? Have the groups responsible for affected products been contacted?

4.4.2 Phase 1 – Planning and Preliminary Design

Objectives: Create complete functional specifications and a preliminary design for the total product offering.

Provide the Corporation with an Engineering Development Plan plan for Phases 2 through 4A.

Obtain agreement of the Product Team to build the product identified in the Functional Specification. (This specification will not be altered in subsequent phases without agreement by the Product Team and approval of the PBU or sponsoring organization).

Identify cross-product interdependencies and implement plans to manage these situations.

4.4.2.1 Phase 1 Exit Criteria

Assumptions and requirements evaluated since the Phase 0 exit. Significant changes communicated to the Product Team and appropriate approval bodies.

Complete Functional Specification addressing requirements identified in Phase 0 written, reviewed, approved, and published. All committed features and functions documented in the Functional Specification.

A Legal Protection Strategy is in place, including updates to the Phase 0 Strategy.

Engineering Development Plan and schedule reviewed and approved by the sponsoring and development group and all impacted functions.

The proposed product is exportable to Digital's strategic countries under current export license requirements, as determined by Corporate Exit and Trade (CE/T) in Washington D.C. Contact is Don Ames. See ELF.

All internal and external Digital, industry, regulatory, and country-specific requirements addressed and included in the Engineering Development Plan for inclusion in the design and, as required, Verification and Qualification Test Plans. For more information refer to the following standards:

- *DEC STD 060-0 Design and Certification of Hardware Products to National and International Regulations and Standards – Policy and Procedures*
- *DEC STD 062-0 Product Submittal to U.S. and Non-U.S. Agencies*
- *DEC STD 066-0 Digital Design Standards*

The part number family assignment plan for hardware products approved by the Chief Engineer's Office. Refer to *DEC STD 012-2 Unified Numbering Code for Part Identifier Class Codes and Related Document Identifiers*. For software products refer to *DEC STD 012-4 Unified Numbering Code – Software Distribution Center Part Numbering Conventions*.

An Executive Summary of the Engineering Development Plan developed by the Engineering Manager for the Phase 1 Business Plan.

Copies of approved Phase 1 Engineering exit plans submitted to the Product Manager.

4.4.2.2 Phase 1 Activities

Evaluate assumptions and requirements since Phase 1 exit, update affected Engineering plans as required, and communicate significant changes in the plans to the Product Team.

Execute Legal Protection Strategies.

Review the technical content of the Proprietary Information Disclosure (PID).

Create Documentation Plan for the total product offering.

Create a Preliminary Support Engineering Plan.

Prior to preliminary design, obtain part numbers from the Chief Engineer's Office for top level system configurations. (This is key for new technologies, new or significant changes to architecture, and system level family of products.) Refer to *DEC STD 012-0 Part and Document Identification Conventions - Digital Corporate Policy* for more information.

Obtain Product Team agreement on the product's functionality and characteristics.

From a functional perspective, define the extent to which this product complements or overlaps other Digital products.

Complete the Functional Specification and Engineering Development Plan based on:

- Product and Market Requirements
- Alternatives and Feasibility Study
- Impact and requirements from Manufacturing, Sales, and Service
- Impact and requirements of all applicable standards
- Requirements identified by IED in the Internationalization Plan

Ensure that the Engineering Development Plan is integrated with interdependent functional plans (funding, schedule, resources, and supporting projects).

Include Risk management and contingency plans in the Engineering Development Plan and schedule.

Review and approve functional plans for supporting development project.

Adjust proposed design to make product easily exportable under current U.S. Export Law.

Model, simulate, or bread-board high-risk features.

Document preliminary test requirements and plans (Verification plans for Phase 2 and Qualification plans for Phase 3).

Identify test groups and schedule testing. Certain tests may begin in Phase 2, such as Design Verification Testing (DVT). Contact VAX New Products Committee (VNPC), Micro New Products Committee (MNPC), or Networks New Products Committee (NNPC) to assist in the determination of system level test requirements.

Supply Product Manager with the estimated number of units required to support Phase 2 and 3 test and qualification activities.

Create plans addressing who, what, and when required process methodologies described in Phase 0 will be delivered.

4.4.2.3 Phase 1 Memory Joggers

Have all aspects of the proposed product (including architecture, design, operation, hardware components, software components, and manufacturing) been examined for intellectual property content?

Has intellectual property protection been pursued?

Does the functional specification address applicable internal and external standards? Have the Domain Managers and standards' owners been contacted to verify applicability of identified standards?

Are there any design factors not currently addressed by Digital standards or external standards? How will these factors be addressed?

How will verification of the product requirements be demonstrated?

Were any identified requirements omitted from the proposed specifications? Why? How will these changes affect the:

- Product
- Customer
- Market strategies
- Sales strategies
- Services strategies
- Manufacturing strategies

Have appropriate commitments been obtained and are they achievable? (Are supporting projects in line with your plans?)

On what hardware and software is this product dependent? What is required? What is optional?

What hardware and software products are dependent on this product? Are plans in place to sufficiently test these products to ensure they work with new product?

For new CPUs, has a list of software required for First Revenue Ship (FRS) been developed? Have resources and prototypes been allocated for required software testing? Have plans been established to ensure that the required software will be available for FRS of the product? (Note: Software includes layered products and applications.)

Does the planned product growth-cycle include meaningful new features? What are these features? What plans are in place to make them available?

What offshoots of this new product will be reviewed for future development?

Have you addressed the following compatibility issues:

- Ergonomics (Human Engineering)
- Physical
- Electrical
- Interfaces (hardware and software)

What changes need to be made in other products to allow this product to function most efficiently? Have the groups responsible for the affected products been contacted? Have they agreed to the changes?

Have Manufacturing, Sales, and Service requirements been incorporated into the Functional Specification? What requirements were omitted and did the functional submitters agree with these omissions?

Does the Functional Specification address the stated Problem Free Installation (PFI) and Mean Time to Install (MTTI) goals?

Will new manufacturing processes be required as a result of the Functional Specification?

Have the product's installation requirements in the customer environment been addressed and are they understood by the Product Team?

Are contingency funds and plans specified in the Engineering Development Plan?

Is the project dependent on key individuals, parts, processes, or products?

Has the product team designated the members of the product qualification team to plan and implement the test, verification, and qualification program per EN-EN522-00, *Digital Qualification Process Manual*?

What is the resources plan for each area of activity, such as Design and/or CAD/CASE, Test, Geographic Adaptation, and Manufacturing Start-Up Engineering?

Do you have adequate resources (quantity and skills) to address project needs?

What, if any, are the major above normal capital investments required?

Will service life be dependent upon hours or cycles of operation? How does this factor affect your proposed design?

Are all product performance requirements defined in the product specification? What are these requirements, and are they agreed to by the Product Team? List unresolved issues.

Have all organizations affected by the project had the opportunity reviewed the proposed Functional Specification to assess its impact on their organizations? Who are the groups and resources in the review cycle?

Have you defined doneness criteria for product base levels?

Have cross-organizational design responsibilities been defined and committed resources assigned?

Have the design, test, and certification to standards or requirements (Digital, industry, country-specific) been factored into the design schedule?

What are the major project milestones?

If the product design was previously used, have you analyzed its cost, yield, and failure history, along with previous test and service results? Is there a current design performance goal that the product was not designed to meet that may push this product beyond its limits?

Have all operating environments been considered in the Functional Specification? What factors have not been addressed?

Will each item of the Engineering Development Plan that is contracted to other organizations be part of the overall schedule? Will each item be monitored to ensure on-time delivery?

Have you included design reviews, specification approvals, drawing releases, parts qualification, and revision control as part of your scheduled milestones?

Are significant GO/NO GO decision points part of the milestone schedule? What are the decision points?

Are there plans to evaluate prototype and first production models against all specification requirements, including software and system by certification Software Quality Management (SQM)? Are all required tools and resources available? How will you handle exceptions?

Have all functional members of the Product Team agreed to the functional specification and schedule? Have they committed resources and funding?

What tools or process steps are required for the next phase?

What is the status of tools or processes being developed for use beyond the next phase? What support will be available for these tools?

4.4.3 Phase 2 – Design and Implementation

Objective: Execute the plans committed to in Phase 1. Complete the detailed design and document complete specifications which may have been started before Phase 0 exit. Translate specifications into product reality. Establish contracts with test organizations as required. Establish revision control of to allow controlled distribution of design corrections.

4.4.3.1 Phase 2 Exit Criteria

Assumptions and requirements evaluated since the Phase 1 exit. Significant changes communicated to the Product Team and appropriate approval bodies.

A Legal Protection Strategy is in place, including updates to the Phase 1 Strategy.

Design Specification for the complete product written, reviewed, approved, and published.

Contracts signed with selected vendors for buyout products.

Product design implemented to meet the Functional Specification. The total product design (including hardware, software, and microcode) declared complete by the Engineering member of the Product Team.

A detailed Product Qualification Plan written, reviewed, approved, and published.

Every feature of the product is functional in at least one configuration representative of the customer environment. (For example: CPU runs all instructions, at speed, with a given operating system.) Product simulation is complete, and timing and performance verified.

Field Test Plan written, reviewed, approved, and published. Refer to EL-EN571-00, *Software Engineering Manual* for more information.

An Engineering Executive Summary prepared for the Phase 2 Business Plan. All deviations or changes from Engineering Phase 1 plans highlighted and explained.

Parts qualification in progress.

Product under revision control, including hardware, software, microcode, and documentation.

The Chief Engineer's Office has approved valid part numbers for the total product offering for hardware and system products only. Refer to *DEC STD 012-2 Unified Numbering Code for Part Identifier Class Codes and Related Document Identifiers*. For software products, refer to *DEC STD 012-4 Unified Numbering Code - Software Distribution Center Part Numbering Conventions*.

Computer Parts List (KPL) completed and on file.

Copies of approved Phase 2 Engineering exit plans submitted to the Product Manager.

4.4.3.2 Phase 2 Activities

Complete the product design.

Evaluate assumptions and requirements since Phase 1 exit. Update affected Engineering plans as required and communicate significant changes to the Product Team.

Verify the design according to test plans. Design Verification requires:

- Complete design Complete
- Simulation complete, timing verified
- Built prototype/software functional code freeze
- All features tested in at least one configuration representative of the customer environment. For example: CPU runs all instructions, at speed, with a given operating system.

- **Operation with complementary hardware and software products, such as operating systems with layered products, CPUs with operating systems, and languages with databases.**

Hold design reviews and code reviews as appropriate.

Ensure that the product is designed to meet all committed requirements. Clearly state the commitments that have not been met and why this is considered acceptable.

Complete the Bills of Material (BOMs) for all saleable configurations down to component level, and submit the BOMs to Manufacturing.

Document design specifications for the complete product offering (including microcode information).

Supply Product Management with the detailed requirements (actual number of units, schedule, and configurations) supporting Phase 2 and 3 test and qualification activity.

Test and qualify software required for Field Test and FRS.

Write a detailed Qualification Plan that includes:

- **Regulatory testing and approvals**
- **Other Digital standard testing or appropriate external testing**
- **Performance testing**
- **Design Maturity Testing (DMT)**
- **Testing in all supported environments**
- **Reliability Qualification Testing**
- **Software certification and evaluation by applicable software quality test groups (such as SQM/SQG)**
- **Internal Field Testing**
- **External Field Testing**

Create revision matrix document for the complete product offering.

Document configurations and make the information available to the XCON/XSEL group.

Develop simulation and complete coded data.

Complete Support Engineering Plan.

Order prototype material.

Arrange and complete prototype build.

Arrange for test equipment and test beds.

Deliver the product to appropriate test groups as scheduled.

Ensure that documentation drafts are reviewed and available for field test.

Prepare a discrepancy list between "as designed" and "as built" configurations of the product. This should be a joint Manufacturing and Engineering effort to determine accuracy of the product to specification.

4.4.3.3 Phase 2 Memory Joggers

Have any alterations been made to the design that change export license requirements? Document the changes and how they impact product requirements and Functional Specifications.

Have you identified and listed the appropriate Digital standards that apply to this product? Have the appropriate Domain Managers and standard owners been contacted to verify applicability of the identified Digital standards? Refer to *DEC STD 066-1 Technical Domains in the Product Development Process* for a list of the Domain Managers.

Does the change review process include all affected groups?

Is there a specification family tree that shows the interrelationship of all product specifications for the complete product offering?

Does the design take advantage of interchangeable parts from other products?
What are these parts?

Have you defined the resources that will execute the requirements of *DEC STD 066-0* and *DEC STD 100-0 Introduction to Engineering Change Orders* requirements?

Have you created and implemented:

- Configuration rules?
- A revision matrix?
- A Change implementation (PCO, FCO, Patch) process?

Have design reviews been held?

Have all handling, shipping, and warehousing distribution requirements been considered in the design process?

Are engineering drawings for all parts of the design available and under revision control?

Has Purchasing obtained and approved pricing for purchased parts? (To be addressed as appropriate for the specific product; must be complete to exit Phase 3.)

Have mating parts been evaluated to determine interchangeability (in general, and for parts from different vendors)?

Are there any new product ideas developed for which intellectual property rights strategies need to be implemented?

What tools or process steps are required for the next phase? What support will be available for these tools?

What is the status of tools or processes being developed for use beyond the next phase?

Have the overall objectives and verification tasks for the product been defined?

What criteria need to be met for success at this phase?

Are the plans for component, product, and system level test and qualification in place?

What will not be tested and why? How will this affect the product and the customer?

Has the first pilot unit been carefully evaluated against drawings and other released documentation to ensure conformance?

What Field Test procedures will be used? Who will be supporting the product in Field Test?

How will Field Test problems be collected, prioritized, corrected, status and results reported, and archived?

Has the Field Test reporting process been defined?

Have the resources responsible for problem management and reporting been identified?

Will self-test features be incorporated where practical? What are these features?

4.4.4 Phase 3 – Qualification

Objectives: Qualify production level copies of the product and demonstrate through internal and external testing and feedback that the product has met its requirements and specifications.

At the completion of the Qualification Test cycle (Phase 3), all product attributes will be accurately characterized and documented. Contracts with test organizations are executed as the product becomes available.

4.4.4.1 Phase 3 Exit Criteria

A Legal Protection Strategy in place, including updates to the Phase 2 Strategy.

Engineering Law Group contacted to review all new aspects of the proposed product for intellectual property content. Additional disclosures filed with the appropriate government agencies (such as the U.S. Patent Office).

Phase 3 Qualification Testing completed and published according to plan, results met the specifications and published. All product attributes, such as performance and functionality, characterized and documented.

Complete product design package assembled and archived.

Product, including microcode and documentation, under ECO control.

Parts qualification completed.

All Announcement and First Revenue Ship criteria have been met. Refer to *Pricing and Announcement Committee Manual*.

Engineering Executive Summary updated for the Phase 3 Business Plan.

Assumptions and requirements evaluated since the Phase 2 exit. Significant changes communicated to the Product Team and appropriate approval bodies.

Copies of approved Phase 3 Engineering exit plans submitted to the Product Manager.

4.4.4.2 Phase 3 Activities

Review the completed product for potentially protectable designs or inventions and take appropriate action.

Deliver the product to appropriate test groups as scheduled.

Demonstrate through Qualification Testing that the product has met its specifications and the requirements of Digital and external standards. Qualification Testing includes:

- Regulatory testing and approvals
- Other Digital standard testing or appropriate external testing
- Performance testing
- Design Maturity Testing (DMT)
- Testing in all supported environments
- Reliability Qualification Testing (RQT)
- Software certification and evaluation by applicable software quality test groups (such as SQM/SQG)
- Internal Field Testing
- External field Testing

Obtain approval from the Chief Engineer's Office for any changes to the part numbers approved in Phase 2 (for hardware and systems products only).

Evaluate Qualification Test results for impact on product design.

Begin implementation of the Support Engineering Plan.

Complete external, and country-specific testing of modems and software.

Complete system, cluster, network, and software environment testing (operating system, layered products, applications, customer solutions product). Document results.

Write, review, approve, and publish final test reports.

Support Field Test Sites and poll results according to plan.

Implement appropriate Field Test feedback into the design.

Provide required support to manufacturing process efforts.

Complete, sign off, and archive all internal documentation (such as prints and specifications).

Ensure completion of user and service documentation.

4.4.4.3 Phase 3 Memory Joggers

Have all regulatory approvals been obtained worldwide as planned?

Did you prepare the discrepancy list between "as designed" and "as built" configurations of the product? Have list discrepancies been corrected?

Has Purchasing obtained and approved pricing for purchased parts and signed appropriate purchasing contracts? (To be addressed as appropriate for the specific product; must be complete prior to product announcement.)

Have product documentation and microcode been placed under ECO control?

Can the exact and correct configurations of the total product offering, including software, be determined from currently available documentation?

Have all changes to the product been documented so that the production units can be brought up to the current revision.?

NOTE

Design Verification Test (DVT) and Reliability Qualification Test (RQT) units must be the same as the production units.

Has each built item been properly labelled? Refer to *DEC STD 178-0 Digital Marking Requirements* for more information.

Have trademarks been used properly?

Have the results of the Phase 2 and Phase 3 testing demonstrated that the product is ready to start Field Test?

Have all parts in the design been qualified? List exceptions.

If used, have serialization, lot coding, and date coding been specified on the drawings?

Will any waivers be requested to allow this product to ship? Are plans in place to promptly close these waivers? Refer to *DEC STD 066-2 Waivers to Digital Design Standards* for more information.

Has a plan been developed to ensure that the tools and processes used to develop the product can be maintained? Have the plans, tools, and processes been archived for future product changes?

Have internal and external Field Testing been completed? Has all appropriate feedback been implemented?

Are there any new ideas developed for which intellectual property rights strategies need to be implemented before product announcement?

4.4.5 Phase 4A – Ramp-Up

Objectives: Transfer engineering responsibility from Development to Support Engineering; support Manufacturing, Sales, and Customer Services in achieving steady-state operations.

4.4.5.1 Phase 4A Exit Criteria

Support Engineering Plan implemented.

Resources and funding in place for ongoing engineering support.

Specified hardware ECO cost responsibility transferred from Development Engineering to Manufacturing. Refer to *DEC STD 100-1C Engineering Change Orders – Financing ECOs to Hardware*.

Assumptions and requirements evaluated since Phase 3 exit. Significant changes communicated to the Product Team and appropriate approval bodies.

Copies of approved Phase 4A Engineering exit plans submitted to the Product Manager.

4.4.5.2 Phase 4A Activities

Evaluate product performance feedback from Quality, Manufacturing, Services, Marketing, and Sales, and take appropriate action.

Provide Engineering support to Manufacturing and Services.

Assemble and transfer a complete design package to Support Engineering.

Transfer product responsibility from Development Engineering to Support Engineering.

Transfer ECO control responsibility from Development Engineering to Support Engineering.

Supply a complete list of risks and open action items to Support Engineering.

Implement Support Engineering Plan and update when appropriate.

Ensure that design tools, database, and processes are operable within Support Engineering.

Participate in the Post-FRS Review to evaluate the introduction process, the Product Team's performance, and the methods and tools used to develop the product.

Obtain approval from the Chief Engineer's Office for any changes to the part numbering scheme for a hardware or system product as a result of:

- ECOs.
- Value Engineering Activity.
- Product enhancements or mid-life kickers.
- Other activities that may cause the need to change or add part numbers to the current product offering.

4.4.5.3 Phase 4A Memory Joggers

Has a complete design package been assembled for transfer to Support Engineering? How did you verify the accuracy of the package?

Has the discrepancy list between the product "as designed" and "as built" been resolved?

Have all manufacturing requirements been met for the transfer of product ECO cost responsibility to Manufacturing?

Have the details of all product data and design tools been documented for Support Engineering? Is Development Engineering in agreement with Support Engineering on this issue?

4.4.6 Phase 4B – Steady–State Operation

Objective (of Support Engineering): Provide the ongoing product support required to maintain steady–state manufacturing and service.

4.4.6.1 Phase 4B Exit Criteria

All product–related material such as design tools, prints, process documents, and ongoing maintenance plans prepared for archiving.

All pending ECOs and remaining open problems dispositioned and documented.

Plans are in place to support the product for the remainder of its useful service life.

Copies of approved Phase 4B Engineering exit plans submitted to the Product Manager.

4.4.6.2 Phase 4B Activities

Evaluate product performance feedback from Quality, Manufacturing, Services, Marketing, and Sales, and take appropriate action.

Ensure all product-related materials been archived according to the corporate vital records retention and archiving requirements. This includes design tools, prints, process documents, and ongoing maintenance plans.

Provide ongoing Engineering support.

Evaluate whether a Valued Engineered product is a good investment for Digital.

Obtain approval from the Chief Engineer's Office for any changes to the part numbering scheme for a hardware product as a result of:

- ECOs
- Value Engineering Activity
- Product enhancements or mid-life kickers
- Other activities that may cause the need to change or add part numbers to the current product offering

Look for ways to maximize results (to do better than planned).

Provide input to the Product Phase Down Plan.

Review all functional Product Phase Down (PPD) Plans including Product Management, Engineering, Manufacturing, Marketing, Sales, and Services.

4.4.6.3 Phase 4B Memory Joggers

Have all pending ECOs or design problems been closed or plans established for their management?

Has a plan been developed for ongoing support of the product after it has been phased down?

4.4.7 Phase 5 – Product Retirement (Service Continues)

Objective: Provide ongoing Engineering support and execute the product retirement plans agreed to in Phase 4B.

4.4.7.1 Phase 5 Activities

Phase 4B Phase Down Plan implemented.

All Support Engineering activities identified in the Product Phase Down Plan completed. Ongoing Engineering Support capability in place for the service life of the product.

All pending ECOs dispositioned and documented.

A final open problems package documented and archived.

Support Engineering executes its elements of the Product Phase Down Plan.

Determine whether or not the product, if software, is a candidate for the DECUS Public Domain Library.

4.5 REQUIRED ENGINEERING DOCUMENTS

The overviews and outlines contained in this section serve as guidelines for the creation of the plans and documents used by the Engineering Manager in support of the Phase Review Process. The content, style, and scope of the plans may vary for hardware and software products and across Engineering groups. The outlines present the minimum requirements for Engineering plans and documents submitted for Phase Exit approval.

This section contains outlines for the following Engineering documents:

- Alternatives and Feasibility Study
- Engineering Development Plan

NOTE

Online versions of these outlines are available as a VAX DOCUMENT .SDML file and as an ASCII file from Standards and Methods Control. Use the following specifications to obtain the outlines for the Engineering Plans.

JOKUR::PHASE_REVIEW:ENGINEERING_PLANS.SDML
JOKUR::PHASE_REVIEW:ENGINEERING_PLANS.TXT

Contact JOKUR::SMC with problems copying these files.

4.5.1 Alternatives and Feasibility Study

OVERVIEW

Purpose:

The Alternatives and Feasibility Study quantifies the alternatives for providing target market products, analyzes the tradeoffs for their development, addresses the total life cycle cost to Digital.

Desired Characteristics:

- Identification of alternatives that satisfy product goals and requirements using existing Digital products (available concurrently or in development) or externally developed components and products.
- Analysis of tradeoffs for product development with quantified alternatives for providing target–market–specific product(s) that address the total life cycle cost to Digital.
- Presentation of evidence that clearly demonstrates the technical feasibility of the selected alternative.
- Identification of methodology required to develop the product within the constraints of cost and schedule.
- Identification of product development interdependencies.

Audience:

- PBU or sponsoring organization
- Product Team

ALTERNATIVES AND FEASIBILITY STUDY OVERVIEW (continued)

Who is Responsible:

- The Engineering Development Manager with inputs from the Product Team.

When Required:

- The study is conducted during Phase 0, the Strategy and Requirements stage of the product. The results are distributed prior to the Phase 0 Exit review.

Relationship to Other Plans:

- Phase 0 Business Plan
- Product Requirements Document
- Market Requirements section in the Marketing Plan
- Preliminary Functional Specification
- Preliminary Engineering Development Plan

Where Recorded:

Product Archives in the PBU or sponsoring organization.

ALTERNATIVES AND FEASIBILITY STUDY OUTLINE

1.0 EXECUTIVE SUMMARY

- 1.1 GOALS AND REQUIREMENTS
- 1.2 RECOMMENDED ALTERNATIVE(S)
- 1.3 IMPACT TO TECHNICAL FEASIBILITY
- 1.4 IMPACT TO LIFE CYCLE COST AND Schedule

2.0 ANALYSIS OF SELECTED ALTERNATIVES AND TECHNICAL FEASIBILITY

- 2.1 ALTERNATIVE DEVELOPMENT STRATEGIES WITH LIFE CYCLE COST AND SCHEDULE IMPACT STATEMENTS FOR EACH STRATEGY
- 2.2 IMPACT OF OTHER DEVELOPMENT EFFORTS (CURRENT/FUTURE)
 - 2.2.1 Advanced Development
 - a. Current
 - b. Future
 - 2.2.2 Hardware Development
 - a. Current
 - b. Future
 - 2.2.3 Software Development
 - a. Current
 - b. Future
 - 2.2.4 Tools and Process Development
 - a. Current
 - b. Future
- 2.3 IMPACT ON TARGET DESIGN FREEZE SCHEDULE
- 2.4 IMPACT ON SYSTEM INTEGRATION TESTING (Refer to CPT in Glossary.)
- 2.5 IMPACT ON MANUFACTURING
- 2.6 IMPACT ON SERVICE REQUIREMENTS
- 2.7 IMPACT ON TARGET PRODUCT AVAILABILITY SCHEDULE
- 2.8 IMPACT ON TOTAL LIFE CYCLE PRODUCT COST TO DIGITAL

ALTERNATIVES AND FEASIBILITY STUDY OUTLINE (continued)

3.0 OVERVIEW OF PROJECTED LIFE CYCLE COSTS

3.1 PRODUCT DEVELOPMENT/SUPPORT THROUGH PHASE 5

- 3.1.1 Hardware/Firmware
- 3.1.2 Software
- 3.1.3 Systems Integration
- 3.1.4 Engineering Services
- 3.1.5 Tools, Documentation, Testing, and Qualification
- 3.1.6 Process Technology (Refer to CPT in Glossary)
- 3.1.7 Manufacturing
- 3.1.8 Customer Services
- 3.1.9 Marketing
- 3.1.10 Sales
- 3.1.11 Other

4.0 PROJECT INTERDEPENDENCIES

Elements affecting implementation of selected alternative(s):

4.1 OTHER PRODUCTS OR PROGRAMS

- 4.1.1 Internal to Digital
- 4.1.2 External to Digital – Competitors
- 4.1.3 External to Digital – Vendors

4.2 RESOURCES

- 4.2.1 Machines
- 4.2.2 Tools
- 4.2.3 Processes
- 4.2.4 Software
- 4.2.5 Hardware

4.3 ARCHITECTURE

- 4.3.1 Hardware
- 4.3.2 Software

4.4 TECHNOLOGY

- 4.4.1 Design
- 4.4.2 Tools
- 4.4.3 Process

4.5.2 Engineering Development Plan

OVERVIEW

Purpose:

The Engineering Development Plan is an operational plan that manages the product development effort. The plan is used to coordinate work from each of the functional groups, to demonstrate where overall project reviews will occur relative to functional group efforts, and to evaluate progress of the ongoing effort.

Desired Characteristics:

- A list of the sources of data and assumptions used to create the plan.
- A list of major issues and risks identified in Phase 0 that are critical to the product's development.
- The major tasks of each functional organization involved in the product's development.
- The detailed commitments, schedules, and costs of all functional groups responsible for achieving the project objectives.

Audience:

- PBU or Sponsoring Organization, Product Manager, Marketing, Sales, Manufacturing, CSSE, Development Engineering, and Support Engineering.
- Other required support organizations, such as Test and Quality Groups.

Who is Responsible:

- Engineering Manager with inputs from Product Manager, Marketing, Sales, Manufacturing, CSSE, Support Engineering and designated representatives from groups needed to achieve project objectives.

ENGINEERING DEVELOPMENT PLAN OVERVIEW (continued)

Who Approves the Plan:

- Product Business Unit (PBU) or sponsoring organization Management

When Required:

- The Engineering Development Plan is prepared during Phase 1, Planning and Preliminary Design of the product. The completed document is distributed prior to the Phase 1 Exit. A preliminary version of this plan is created in Phase 0. The format and content of the preliminary plan are governed by the PBU or sponsoring organization.

Relationship to Other Activities:

- Phase 0 and 1 Business Plans and subsequent updates
- Product Requirements
- Marketing Requirements
- Alternatives/Feasibility Study
- Phase 0 Preliminary Engineering Development Plan
- Impact and requirements from Manufacturing, Sales, and Service
- Phase 0 Preliminary Functional Specification

Where Recorded:

- Product Business Unit (PBU) or sponsoring organization

ENGINEERING DEVELOPMENT PLAN OUTLINE

1.0 EXECUTIVE SUMMARY

This section provides a broad and concise description of the proposed product. This section shall not duplicate the executive summary sections of the other functional plans, but shall provide the reader with a more concise explanation of the essential information required to judge the business and market potential of the product. The executive summary shall include:

- Product Goals
- Product Description
- Design Strategy and Tactics
- Product Configurations
- Schedule of Product Deliverables
- Technical Risks and Dependencies
- Critical International Concerns
- Human Resource Requirements
- Issues Without a Clear Resolution Process
- Budget Requests/Project Descriptions

2.0 PRODUCT GOALS

Describe the major goals for the product considering each of the major areas: Engineering, Manufacturing, Marketing, Sales, International requirements, Quality and Customer Satisfaction, Financial, and Customer Services. Include descriptions of the primary goals for the product, the opportunity being addressed or problem that is being solved, benefits to prospective customers, product replacement goals, target First Revenue Ship (FRS) date, projected product life cycle costs, schedule, and international requirements. Address the following:

- What is the primary goal for the product? Does it conform to the Corporate and Business Unit Product Strategy?
- Discuss plans to match user needs, requirements, and expectations. What problem does the product solve?
- How is the product positioned, internally and against the competition? Does it replace an existing product? Is it part of a larger program?
- How will the development results be measured against product requirements? What metrics will be used to determine the overall success of the product?

ENGINEERING DEVELOPMENT PLAN OUTLINE (continued)

- What are the quality goals for the product? (For example, product quality, problem-free installation, customer satisfaction, user availability, reliability.)

3.0 PRODUCT DESCRIPTION

Provide the product name (spell out acronyms), a description of its functionality, its place in a family of products (if appropriate), and other details that describe to the reader the product, its functions, target customers, and position relative to other Digital products and the competition.

- What is the product? (Discuss physical and functional characteristics.)
- What are its primary functions? How do these functions satisfy the critical market success factors and customer requirements?
- What type of customer/application environment is the product targeted for (multiuser, banking, educational, desktop, high user availability, secure system)? What physical characteristics (footprint and configurations) are planned to satisfy the needs of these environments?
- With which operating systems or hardware configurations will this product be used?
- Is this product part of a larger program? If so, identify the program.
- What are the additional requirements and plans needed for this project (such as Test/Verification Plans, Qualification Plans, and/or Documentation Plans)?

4.0 DESIGN STRATEGY AND TACTICS

Describe how you are going to achieve the product's goals and what you will do to implement this strategy. Describe the design alternatives that were chosen; the technology, tools, and methodologies that will be used; and the functionality that will be provided. Map tactics into projects in the development cycle.

- Is this a make or buy product? For buyout, or partial buyout products, indicate the nature and state of the vendor(s) relationship with Digital. Provide a description of the terms and conditions of expected or negotiated contracts.
- Summarize the alternatives that were addressed when selecting this design approach. Why is the proposed design the best approach?
- Highlight unusual or problematic areas with the design.

ENGINEERING DEVELOPMENT PLAN OUTLINE (continued)

- Discuss exceptions to current policies and procedures (list reasons). For example: "The product will not satisfy international requirements because" ... (and list the specific requirements).
- What functionality or features will make this product a clear price/performance leader? What functionality is required? What functionality are you going to deliver?
- Discuss critical high-risk packaging requirements. Such as, hi-density chips, compact footprint cabs, unusual module/system configurations. How do these design requirements impact other functions on the Product Team (manufacturing process, service skills, engineering design tools)?
- Summarize plans for Phase 2 and Phase 3 testing. Describe the tests, responsible organizations, schedules, and quantities of product required.

For each of the major types of testing (internal, external and qualification), answer the following questions:

- What is the overall objective of this portion of testing?
- Which verification tasks are to be carried out in these tests?
- What is the sequence of testing activity?
- What is the expected length (elapsed time) for each test activity?
- What will not be tested and why?
- What are the criteria that must be met for success of each test activity?
- Where/how will the results of each test activity be reported?

ENGINEERING DEVELOPMENT PLAN OUTLINE (continued)

5.0 PRODUCT CONFIGURATIONS

Describe how the product will be packaged. How many variations will be presented? Address customer quality, product performance, reliability, availability, usability, and other important features that are satisfied by these configurations. For early product versions, which may not fully satisfy required market functionality, describe the strategy that will be used to ultimately satisfy these requirements. Define the number of alternate product forms to be provided and their purposes.

6.0 SCHEDULE OF PRODUCT DELIVERABLES

List major milestones for the development of this product by Phase. Milestones are the major events through which a product must pass to ensure its success. These are distinct from, but will likely overlap with, schedules and major phase exits. Include activities required of other groups to develop and deliver this product. For each plan update, indicate progress against the Phase 1 plan and document any significant deviations from planned milestones.

- List the key milestones for this project.
- Discuss what is being done, when, and by whom for each Phase.
- Define additional milestones that have been added to the approved plans.
- Justify major milestones that have been deleted or omitted from the approved plans.
- Identify deliverables and schedules by Phase for each functional organization participating in this effort, including subassembly development in power and packaging, software development, system component development.
- Confirm that commitments are valid and achievable.
- Define metrics for product success. For example, how will results be measured against Phase 0 requirements and Phase 1 Plans?
- Define the problem escalation process that will be used to resolve major team/product related issues.

ENGINEERING DEVELOPMENT PLAN OUTLINE (continued)

7.0 TECHNICAL RISKS AND DEPENDENCIES

Identify the technical risks to success and the consequences if Digital does not develop this product. Also, identify what primary factors must be addressed to ensure the market success of this product. Explain all other important factors that pose a risk, or factors that determine the product's success (basic assumptions customers, economic factors, new materials, process requirements, internal support, and technology). Provide a description of the identified risks and dependencies.

- Address all dependencies within and outside of the immediate scope of this project.

NOTE

Dependencies include functions of projects that are required for completion of this project.

- Identify other projects that are dependent on this project for completion.
- State any significant risks of the project, such as previously unused parallel development of product and process technology.
- Describe contingency plans to manage the risks.
- List outstanding issues in this plan by reference number, individual, organization, and expected/required completion date.

8.0 CRITICAL INTERNATIONAL CONCERNS

Discuss areas that need to be addressed to make this product successful in Digital's strategic country markets.

- Will the product be exportable under current Export and Trade Laws?
- Are there specific requirements that must be satisfied in order for the product to be sold in certain countries (such as language, translation, symbols, and test certifications)?

NOTE

The International Engineering Development Group (IED) will provide an Internationalization Plan, and ensure that commitments, resources, and funding are in place to define and implement internationalization requirements. See Glossary for Internationalization Plan definition.

ENGINEERING DEVELOPMENT PLAN OUTLINE (continued)

9.0 HUMAN RESOURCE REQUIREMENTS

- Identify the skill type, level, and quantity required to achieve the requirements of this plan.
- What are the alternatives if these resources are not available?

10.0 ISSUES WITHOUT A CLEAR RESOLUTION PROCESS

- What areas of this plan have been identified as required to the success of the project, but have not been able to obtain commitment or support?
- Are there major disagreements among Product Team members relative to the proposed product characteristics and schedule?
- Are there areas of this plan that you feel require Senior Management decisions, such as major deviation from strategy and cross-organizational disputes?

11.0 BUDGET REQUESTS/PROJECT TASKS AND ESTIMATES

Develop a comprehensive set of project information and cost estimates. The intent is to provide reviewers with the information required to objectively determine whether the project is a good investment.

- List all project related costs by Phase, including direct/indirect labor, capital, facilities, travel, training, and technology. See *DEC STD 130*.

NOTE

The Engineering Manager should work closely with the Finance representative from the PBU or sponsoring organization to develop this information.

- Describe development and verification tasks and time to be completed in order to achieve goals and characteristics listed in the product specification (minimum of one task for each goal or characteristic identified in the product functional specification).
- List of individual(s) or group expected to complete each task.
- Provide a matrix of tasks associated with the appropriate goals and characteristics (each development task should have an accompanying verification or qualification task).

ENGINEERING DEVELOPMENT PLAN OUTLINE (continued)

11.1 ESTIMATES (Development Requirements)

- Identification of method(s) used for estimation. For example: How did you arrive at these estimates, assumptions and actual responses?
- Estimate of man-hours and cost by task.
- Development schedule based on estimates from each task and available resources. This forms the basis for the overall Development schedule.

11.2 RESPONSIBILITIES

List all project team members and their responsibilities. Include a description of the team organization and why it is likely to be successful.

- Define roles and responsibility of all project resources
 - Product Team
 - Development Team (Engineering resources assigned to this project)
 - Qualification Team
 - Resources external to the Engineering Development Team
- List resources with prime responsibility for each task or function in the Development Plan.

11.3 DEVELOPMENT RESOURCES

- Describe resources required for each development and verification task (tools, machines, and processes).
- Identify required machine resources.
- Identify software required to support machine resources.
- Identify type of machine access needed (timeshare, standalone).
- Identify amount of machine time and capacity required (such as the number of computes required for a simulation program).
- Develop planning chart to plot availability of required resources by quarter.
- Identify new and prototype software or hardware required.
- Identify required but uncommitted resources.

ENGINEERING DEVELOPMENT PLAN OUTLINE (continued)

11.4 STAFFING

- Personnel required (skills, experience)
- How many? Full time? Part time? Contract?
- Staffing by quarter chart (when they are needed)
- Training required (when, how, address learning curve)

11.5 TOOLS AND METHODOLOGIES (Refer to CPT in Glossary and Engineering Memory Joggers)

- What design tools or process steps must be available in the current and next phase?
- What support will be in place while you are using these tools?
- Are there any tools or processes in development for use beyond the next phase? What is their status?
- Travel required to support this project, such as interplant or vendor.

11.7 DEPENDENCY MANAGEMENT

- Define the methods used to maintain control and measure status of each project dependency.

11.8 DESIGN REVIEWS

- Responsible individual(s).
- Schedules.
- The method to obtain and implement feedback from the design review.
- Final reviewers.

NOTE

The design review group should include system and product experts (both hardware and software), the support engineering function, and the organizations that are involved in the development effort.

ENGINEERING DEVELOPMENT PLAN OUTLINE (continued)

11.9 DOCUMENTATION PLAN OUTLINE

Overview

- Documentation Requirements
- Hardware Documentation Strategy
- Software Documentation Strategy
- Users Manuals
- Users Guides
- Educational Services Documentation
- Other Documentation Activity (SPD updates, product brochures)

Plan Milestones

Production and Printing Requirements

- Production
- Printing and Distribution

11.10 PROJECT SECURITY

Define data security and recovery measures.

Define archive plans for all project and design information.

11.11 POST-FRS PROJECT REVIEW

Define the schedule, resources, and method that will be used to capture and communicate project information back into the development system after the project is complete.

Provide an assessment of the feedback mechanism used.

ENGINEERING DEVELOPMENT PLAN OUTLINE (continued)

11.12 DOCUMENT RETENTION/CHANGE CONTROL

- Define the mechanism to update project documents and to centrally locate documentation during and after the project.
- Identify the organization committed to archive, reproduce, and update documentation on an ongoing basis.

12.0 RELATED DOCUMENTS

- **Marketing Requirements Document**
- **Product Requirements Document**
- **Alternatives/Feasibility Study**
- **System Specification**
- **Product Functional Specification**
- **Support Engineering Plan**
- **Phase 0**
 - **Business Plan**
 - **Market and Product Requirements**
 - **Impact and Requirements from Sales, Manufacturing, and CSSE**
 - **Preliminary Engineering Development Plan**
 - **Preliminary Functional Specification**

4.6 REFERENCE MATERIAL FOR PRODUCT DESIGN

EL-00012-02	<i>DEC STD 012-2 Unified Numbering Code for Part Identifier Class Codes and Related Document Identifiers</i>
EL-00012-04	<i>Unified Numbering Code - Software Distribution Center Part Numbering Conventions</i>
EL-00038-00	<i>DEC STD 038-0 System Evaluation of New Products - General</i>
EL-00038-01	<i>DEC STD 038-1 System Evaluation of New Products - Software</i>
EL-00038-02	<i>DEC STD 038-2 System Evaluation of New Products - Hardware</i>
EL-00060-00	<i>DEC STD 060-0 Design of Hardware Products to National and International Regulations and Standards, Policies, and Responsibilities</i>
EL-00060-01	<i>DEC STD 060-1 Design and Certification of Hardware Products to National and International Regulations and Standards - Specific Requirements</i>
EL-00066-00	<i>DEC STD 066-0 Digital Design Standards Required for the Design of Digital Products</i>
EL-00066-01	<i>DEC STD 066-1 The Roles and Responsibilities of Technical Domains in the Design and Development Process in Digital</i>
EL-00130-00	<i>DEC STD 130-0 Product Business Plans: Content Requirements and Format Guidelines</i>
EL-SM498-00	<i>Producing International Products</i>
EL-EN522-00	<i>Digital Qualification Process Manual</i>
EL-CPPAC-00	<i>Pricing and Announcement Committee - Corporate Policies for Product Pricing, Announcement, and First Customer Ship</i>
EL-CP596-00	<i>Top 100 Process Overview Manual</i>
EL-ENGRS-0M	<i>Internal Guide to Digital Organizations</i>

MANUFACTURING

5.1 PURPOSE

From Manufacturing's perspective, the Phase Review Process is a mechanism that, over the life cycle of a product, provides a media for worldwide cross-functional communication, process development, synchronization, project implementation, tracking, and readiness assessment. This process ensures that:

- Manufacturing builds products using verifiable processes that consistently satisfy the perceived demands of the customer.
- The product is manufacturable, reproducible, reliable, and cost effective.
- Manufacturing has the worldwide capability to meet customer demand as defined by marketing forecasts.
- Manufacturing has the ability, during and beyond the initial phase of product introduction, to rapidly achieve:
 - Timeliness of scheduled commitments
 - Competitive cost opportunities, independent of volume
 - Competitive quality opportunities, independent of volume
- Manufacturing can manage Product Phase Down, and optimize customer satisfaction, return on assets, and field service requirements.

5.2 FUNCTIONAL RESPONSIBILITIES

This section describes the following areas of responsibility in the Manufacturing function of the Phase Review Process:

- Product Business Unit Manufacturing (PBUM)
- Responsibilities to the Phase Review Process
- Required Documents
- Manufacturing Systems Program Manager (MSPM)
- Key Manufacturing Project Functions
- Manufacturing Phase Review Manuals

5.2.1 Product Business Unit Manufacturing (PBUM)

In support of Digital's product base, Manufacturing has established PBUMs. These units are responsible for defining overall manufacturing business objectives and strategy based on the competitive environment and the goals and objectives of the PBUs. Responsibilities include:

- Communicating strategy to Manufacturing Systems Program Managers (MSPMs), so that they can ensure inclusion of and synchronization to product life cycle goals and objectives.
- Interfacing with manufacturing plants worldwide to ensure that business strategies are understood and implemented, and that future business or technology trends are comprehended and incorporated into long-range plant planning.
- Acting as a collaborative partner with PBUs, Product Management, Marketing, Sales, Services, customers, vendors, areas, volume plants, and PBUM groups.

5.2.2 Manufacturing Responsibilities to the Phase Review Process

The major Manufacturing responsibilities to the Phase Review Process are as follows:

- Develop a worldwide, competitive, manufacturing capability for the product and all of its components (hardware, software, and documentation), from product inception to product phase down.
- Develop a worldwide organizational commitment over the product life cycle that is proactive and based on business excellence and performance concepts.
- Interface with the Product Team to define manufacturing project goals and objectives: resolve issues relating to manufacturing; and manage the product through its life cycle, consistent with agreed product milestones. The Product Team usually consists of Product Management, Marketing, Manufacturing, Engineering, Product Support Engineering, Customer Services, and Sales.
- Publish a Product Impact Statement (from a Manufacturing perspective) in Phase 0 and ensure that the impact on existing or proposed worldwide manufacturing technologies, processes, resources, space, and costs is understood and dealt with by the Product Team and other responsible parties.
- Develop manufacturing concepts, strategies and plans (both strategic and operational) that define scope, direction, magnitude, and required commitments to ensure the product's success over its life cycle. These plans must be consistent with PBU/PBUM goals and objectives.
- Provide a formal implementation and verification process of checks and balances against Phase 0 through Phase 5 criteria that ensure manufacturing readiness and competitiveness.
- Review and influence design-related decisions (hardware and software), and ensure that the final product can be consistently produced over extended periods of time at a competitive cost.
- Convert manufacturing-defined concepts and strategies into highly-efficient, practical process solutions consistent with New Product Start-Up (NPSU) milestones, First Revenue Ship (FRS) milestones, and company goals for customer satisfaction.

- Develop worldwide component, module, subassembly, peripheral, software, documentation, and cabinet-level sourcing and distribution processes consistent with manufacturing process technologies and competitive business excellence requirements.
- Define, plan, and manage life cycle budgets, cost of goods sold, and manufacturing assets over the product life cycle.
- Ship product to meet customer demand and Sales forecast.
- Manage product evolution through ramp-up, steady-state, and phase-down to ensure that customer satisfaction goals are:
 - Efficiently achieved.
 - Maintained over extended periods of time.
 - Continuously improved relative to cost reduction and performance enhancement through constant and systematic processes.

- Develop and manage product phase down, according to commitments.

5.2.3 Generation of Required Manufacturing Documents

The generation of Manufacturing documents requires the full integration and synchronization of various plans produced at all levels in the Corporation.

Figure 5-1 describes a typical information flow of information and the various inputs require consideration when the MSPM develops required Manufacturing documents.

Figure 5-1: Generation of Required Manufacturing Documents

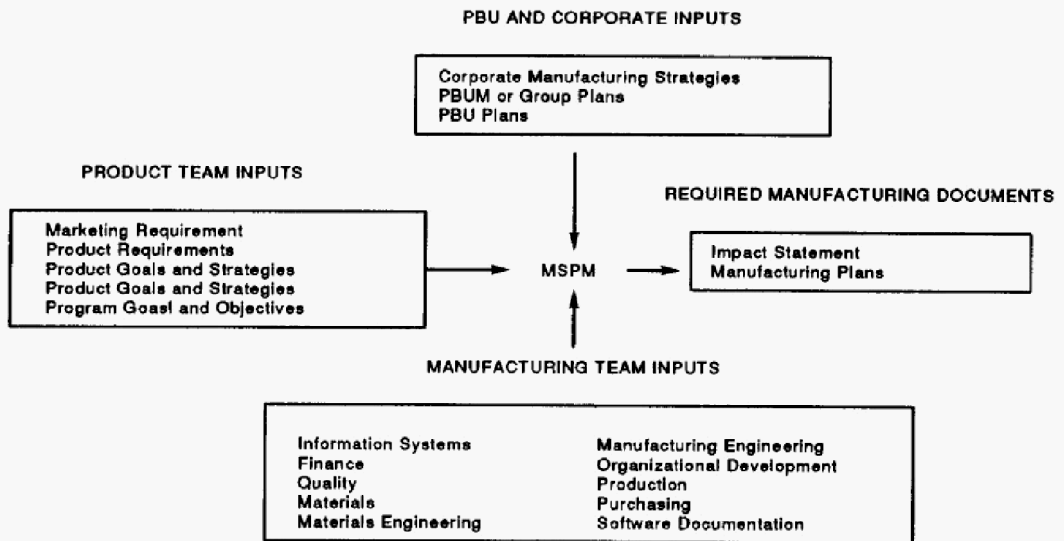


Fig5_1

5.2.4 Manufacturing Systems Program Manager (MSPM)

The MSPM represents and manages Manufacturing's interests on the Product Team, setting manufacturing goals and objectives based on product and Corporate strategies and guidelines. The MSPM also ensures that manufacturing plans, issues, and inputs are published and worked to resolution.

NOTE

The term MSPM may be replaced with Program Manager, especially in groups that manage saleable peripherals, communication devices, and software.

Further responsibilities of the MSPM include management and orchestration of key manufacturing business and technical groups and functions, and coordination, synchronization, and completeness of deliverables as defined for the project.

5.2.5 Key Manufacturing Project Functions

Figure 5-1 shows the organizations responsible for life cycle management. Each function provides representatives who, with the MSPM, form the Manufacturing Team. This team delivers what is required from Manufacturing to the Product Team.

Each representative is responsible for developing plans; coordinating activities and deliverables for their specific function; and ensuring that product business goals and objectives are understood, implemented, and achieved.

5.2.6 Manufacturing Phase Review Manuals

The Manufacturing Phase Review Manuals listed below describe the responsibilities of the individual manufacturing functions as they relate to product life cycle management. Each function's operations, deliverables, tasks, and actions are described in relationship to Phase Exit requirements.

<i>DEC STD 084 Process and Technology Phase Review Procedure Standard and Workbook</i>	EL-00084-00
<i>Administration Policies and Procedures – Product Phase Down Policy</i>	EL-MF028-00
<i>Manufacturing Systems Program Manager (MSPM) Guide</i>	EL-MF356-00
<i>Manufacturing Finance Phase Review Guidelines</i>	EL-MF356-01
<i>Information Systems Phase Review Guidelines</i>	EL-MF356-02
<i>Corporate Materials Architecture New Products Module Material Phase Review Process</i>	EL-MF356-04
<i>Manufacturing Order Administration Phase Review Guidelines</i>	EL-MF356-05
<i>Customer Satisfaction/Quality Phase Review Guidelines</i>	EL-MF356-06
<i>Phase Review Production Guidelines</i>	EL-MF356-07
<i>Materials Engineering Domain Phase Review Guidelines</i>	EL-MF356-08
<i>Manufacturing Product Phase Down/End-of-Life Guidelines</i>	EL-MF540-00

The above manuals serve as guidelines for Phase Review execution and focus, and may change depending on the type or form of product being introduced.

The manuals are organized to define:

- What tasks and deliverables the specific function actually performs.
- What the function needs from other groups to execute deliverables.
- When the function requires information about their role, relative to life cycle management.
- When the function requires a guideline from which to execute deliverables.
- How the deliverables are timed to synchronize with Phase Exits.

5.3 MANUFACTURING ACTIVITIES AND DELIVERABLES

Figure 5-2 shows the major activities and deliverables of the Manufacturing function over the product's life cycle.

Figure 5-2: Manufacturing Activities and Deliverables

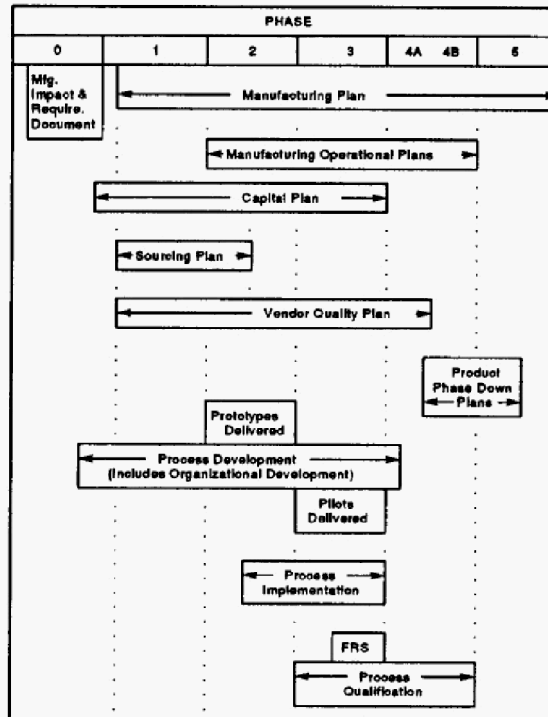


Fig5_2

5.4 EXECUTING AND EXITING EACH PHASE

Each phase in the product's life cycle provides a mechanism for the systematic review of proposals, plans, and results in a manner that allows for controlled funding, resource allocation, and project approval.

For each phase in this chapter, there is a list of Exit Criteria and supporting Activities for the MSPM. Their purpose is to stimulate the thought process and surface issues as early as possible in each phase.

As each phase is exited, the focus of Manufacturing changes, as is reflected in the definitions and deliverables of the Activities and Exiting deliverables required of the Manufacturing Team. It is the responsibility of the MSPM to ensure that deliverables are achieved and acceptable to both Manufacturing and the Product Team. When deliverables are deemed unacceptable, the MSPM is expected to work problems to resolution.

5.4.1 Phase 0 – Strategy and Requirements

Objective: A Manufacturing Product Team evaluates the product as conceived, provides guidance to Engineering regarding manufacturability issues, and studies the possible impact on manufacturing technology and worldwide manufacturing plants.

The major deliverable of this phase is a Manufacturing Impact and Requirements Document. Each team member is responsible for delivering their functional plan or input to the MSPM at each Phase.

5.4.1.1 Phase 0 Exit Criteria

Manufacturing Impact and Requirements Document written, reviewed, approved, and published.

Impact and Requirements Document Executive Summary included in the Phase 0 Business Plan.

Potentially protectable manufacturing inventions and developments identified. A Legal Protection Strategy developed and clearance for the product or process name obtained.

Copies of approved Phase 0 Manufacturing exit plans submitted to the Product Manager.

5.4.1.2 Phase 0 Activities

The Product Business Unit Manufacturing (PBUM) group identifies the Manufacturing Systems Program Manager (MSPM).

Create the Manufacturing Team from all Manufacturing functions, including Finance, Production, Quality, Organizational Development, Point of Manufacturing (POM) focus, software, and header contact.

Evaluate product fit in the Corporate Manufacturing business strategy and define the impact to existing products and manufacturing processes.

Develop concepts for practical manufacturing solutions based on the Corporate Manufacturing business strategy.

Provide a competitive analysis of similar computer manufacturing businesses and identify and evaluate alternatives for manufacturability.

Identify potentially protectable manufacturing inventions and developments (Legal Protection Strategy).

Ensure that the Manufacturing Team is available to work with Design Engineering, if needed.

Provide Purchasing services to Engineering for component and buyout products.

Estimate Manufacturing Program costs.

Each Manufacturing Team member writes their portion of the Impact Requirements Document.

Complete the Manufacturing Impact and Requirements Document.

Set major Point of Manufacturing (POM) milestones.

5.4.2 Phase 1 – Planning and Preliminary Design

Objective: Create a comprehensive Manufacturing Plan.

The Manufacturing Plan defines: Strategies, goals and objectives; budgets, capital spending and resource needs; and where, how, and when the product will be available for qualification and customers through First Revenue Ship (FRS) and volume ramp.

5.4.2.1 Phase 1 Exit Criteria

Product assumptions and functional requirements evaluated since the Phase 0 Exit. Functional plans updated and significant changes communicated to the Product Team.

Manufacturing is committed to supporting the product.

Manufacturing Plan written, reviewed, approved, and published.

Executive Summary of the Manufacturing Plan (developed by the MSPM) available for the Phase 1 Business Plan.

Copies of approved Phase 1 Manufacturing exit plans submitted to the Product Manager.

5.4.2.2 Phase 1 Activities

Participate in defining product goals and objectives.

Identify major tasks, deliverables, and interdependencies through First Revenue Ship (FRS) and volume ramp.

Complete the Manufacturing Team from all manufacturing functions, including Finance, Information Systems, Manufacturing Engineering, Materials, Production, Quality, Organizational Development, POM focus, software manufacturing, and header contact.

Define manufacturing capability based on the available preliminary design.

Contact the Law Department to review all *new* aspects of the proposed product for intellectual property content. File applications for legal protection for potentially protectable manufacturing inventions and developments, and the product or process name.

Define methods for managing project deliverables over the product's life cycle.

For Software products, the Software Distribution Center (SDC) new products planner creates a preliminary New Products Form (NPF).

Define worldwide manufacturing process strategies and develop effective process technologies consistent with product introduction schedules.

Develop a sourcing strategy, including plant, work force, ramp-up, and assessment of New Product Start-Up (NPSU) team phase-out impact.

Provide a financial budget.

Finalize manufacturing goals and objectives for customer satisfaction and provide predicted specifications/measurements for manufacturing processes.

Publish preliminary Vendor Qualification Plan.

Develop preliminary Capital Plan.

Support Engineering on the preliminary Verification Qualification Plan.

Establish requirements for approval of the Support Engineering Plan.

Annotate the Manufacturing Impact and Requirements Document with Engineering commitments.

Obtain appropriate Manufacturing approvals.

Provide the Product Manager with the estimated number of units required to support Phase 2 and Phase 3 Manufacturing activities.

Provide detailed input to the Product Team on Phase 2 and Phase 3 Build Plans, which are included in the Phase 1 Manufacturing Plan.

Assess Manufacturing's ability to meet the requirements of the Phase 1 Manufacturing Plan through a major review.

5.4.3 Phase 2 – Implementation and Design

Objective: Convert Manufacturing Plan requirements into physical deliverables, including product hardware and software. These deliverables form the foundation of worldwide manufacturing processes.

5.4.3.1 Phase 2 Exit Criteria

Product assumptions and functional requirements evaluated since the Phase 1 Exit. Functional plans updated and significant changes communicated to the Product Team.

Manufacturing Plan Executive Summary available for the Phase 2 Business Plan.

Updated Manufacturing Plan with full operational details and changes.

FRS readiness assessment completed according to plan.

Bill of Materials (BOMs) completed for hardware products.

Functional production prototypes delivered to Engineering.

Copies of approved Phase 2 Manufacturing exit plans submitted to the Product Manager.

5.4.3.2 Phase 2 Activities

Manage manufacturing tasks and deliverables and ensure synchronization to business and project goals.

Finalize manufacturing process technologies and clearly define capability (statistically and operationally).

Execute Legal Protection Strategy.

Verify manufacturing technology performance according to design specification; have well defined upper and lower tolerances that can be statistically measured.

Evaluate Engineering Qualification Plans and ensure linkage to Manufacturing goals for process, reliability, and customer satisfaction.

Finalize the Manufacturing Process Qualification Test (PQT) Plan, including the Process Verification Test (PVT) Plan.

Deliver Engineering prototypes.

NOTE

From a qualification standpoint, prototypes should incorporate a full set of components that meet specification; components that do not meet specification should be identified. Prior to major component purchases, the specification should be changed or the appropriate component upgraded or replaced.

Train key personnel to support process start-up and NPSU technical core team phase-out.

Publish a Manufacturing Sourcing Plan early in this phase.

Evaluate source plants for compliance with quality expectations.

Publish a Manufacturing Operations Plan update. Provide operational details at start-up in volume plants.

Begin vendor, component, and process qualification.

Finalize fit-up for prototype build, based on process technologies to be incorporated in the manufacturing process.

Deliver production built prototypes.

Build and deliver pilots for Engineering qualification.

Publish product transfer cost, by year, sensitized to volume requirements.

Create the Manufacturing BOM for hardware products and update the NPF for software products.

Verify that Manufacturing builds the product to the current revision.

Complete and obtain approval for the Capital Plan.

Complete Point of Manufacturing (POM) plans.

Support Engineering on the final Verification Plan.

Review the design to ensure that committed manufacturing requirements have been implemented.

Each Manufacturing Team member writes their portion of the Manufacturing Plan.

Conduct a Manufacturing FRS Readiness Review.

Identify those components that do not meet specification, and apply for a waiver, if necessary.

5.4.4 Phase 3 – Qualification

Objectives: Commence building product for First Revenue Ship (FRS). Complete worldwide process fit-up. Verify worldwide process capabilities against volume ramp requirements.

5.4.4.1 Phase 3 Exit Criteria

Assumptions and functional requirements evaluated since the Phase 2 Exit. Functional plans updated and significant changes communicated to the Product Team.

Phase 3 Manufacturing Plan written, reviewed, approved, and published.

Manufacturing Plan Executive Summary submitted for the Phase 3 Business Plan.

Copies of approved Phase 3 Manufacturing exit plans submitted to the Product Manager.

First revenue units shipped.

Software Distribution Center (SDC) new product planner ensures that the NPF has been approved.

5.4.4.2 Phase 3 Activities

Quantify process verification against defined specifications and quality predictions.

Qualify source plants and guarantee product availability.

Complete Manufacturing worldwide process fit-up and verify manufacturing process capability against predictions and specifications.

Maintain synchronization of build plans.

NOTE

Plants should not use different processes unless the impact of the process difference and control of this difference has been statistically determined.

Commence worldwide Manufacturing Process Qualification using required processes for ramp and volume production.

Evaluate the Manufacturing impact of ongoing results from the design engineering qualification process.

Debug worldwide manufacturing processes and ensure that complete measurement systems and process controls are in place and operational.

Place all vendors and component parts on a Qualified Vendor List (QVL).

Complete training of personnel to support manufacturing ramp.

Ensure that the Manufacturing data collection process is in place and operational.

Ensure that the documentation to support the manufacturing process is released and available.

Participate in the implementation of the Support Engineering Plan.

Verify that Manufacturing is building product to the current revision.

Check the first pilot product for accuracy against the current revision.

Serialize all units according to product design documentation.

Verify completeness of distribution and order processing.

Conduct an independent readiness review and supply feedback.

Close all action items identified in the Phase 2 FRS readiness review.

Provide ongoing support for the Engineering qualification process.

Ensure that Point of Manufacturing (POM) menus are ready.

Ensure that POM requirements have been implemented.

Complete the customer audit plan.

Plan to participate in a Post-FRS Review, which usually occurs one month after FRS. For this review, document:

- **Actual accomplishments versus Phase 1 goals and objectives**
- **What the team did well, and what areas need improvement**
- **Recommendations**

Each Manufacturing Team member updates their portion of the Phase 3 Manufacturing Plan.

5.4.5 Phase 4A – Ramp-Up

Objectives: Replicate product based on design specification; ramp-up to steady-state volume with focus on customer demand and timely delivery.

Specify the criteria for transition of ECO control responsibility from Development Engineering to Manufacturing; and achieve process certification.

5.4.5.1 Phase 4A Exit Criteria

Product assumptions evaluated since Phase 3 Exit. Manufacturing plans updated and significant changes communicated to the Product Team.

Quality of the product in the worldwide manufacturing process certified by the Group Quality Manager.

Manufacturing achieved steady-state volume ramp.

Manufacturing Plan Executive Summary available for the Phase 4A Business Plan.

Copies of approved Phase 4A Manufacturing exit plans submitted to the Product Manager.

5.4.5.2 Phase 4A Activities

Demonstrate worldwide capability to achieve operational goals and objectives during ramp-up.

Complete Process Qualification Testing (PQT) and resolve all open issues.

Commence On-going Reliability Testing (ORT), ensure that manufacturing induced reliability problems are quantified, and establish corrective action.

Ensure that a customer feedback loop providing product performance information is in place (according to the Customer Audit Plan), and that manufacturing-induced problems are identified and resolved.

Update Manufacturing control systems based on process feedback.

Publish Process Enhancement and Cost Reduction Plan.

Ensure that all quality contracts are signed, as applicable.

Audit and certify product and volume processes.

Reassign New Product Start-Up Team.

Supply Field Service Logistics (FSL) with spares according to plan.

5.4.6 Phase 4B – Steady–State Operation

Objectives: Maintain steady–state volume production to meet customer demand, improve quality, and reduce manufacturing cost.

5.4.6.1 Phase 4B Exit Criteria

Product assumptions evaluated since the Phase 4A Exit. Manufacturing Plans updated and significant changes communicated to the Product Team.

Manufacturing Product Phase Down (PPD) Plan written, reviewed, approved, and published.

Establish Product Phase Down (PPD) Build quantity.

Copies of approved Phase 4B Manufacturing exit plans submitted to the Product Manager.

5.4.6.2 Phase 4B Activities

Manage processes using statistical process control methods.

Meet worldwide customer demand.

Ensure continuous, ongoing process enhancement including internal and external cost reductions, quality, and productivity improvements.

Manage manufacturing process to implement ECOs and mid–life product enhancements, if applicable.

Continue to manage customer feedback (hardware/software processes).

Continue to evaluate data from Ongoing Reliability Testing (ORT).

Determine method of phase down:

- Shut down all processes and manage inventory exposure.
- Build to inventory and stock to support market forecast.
- Implement controlled process reduction until customer demand ceases and inventory is exhausted.

Define inventory expense and impact per business analysis:

- Define inventory expense and investment exposure.
- Coordinate Order Administration activity.
- Finalize Order Administration Plan.
- Develop critical demand process.

Redefine material acquisition requirements and schedule.

Define vendor management strategy.

Product Phase Down Plan written, reviewed, approved, and published.

Report trademark misuses and infringements by customers and competitors to Trademark Services Law Group.

Review all functional PPD Plans including Product Management, Engineering, Manufacturing, Marketing, Customer Services, and Sales.

5.4.7 Phase 5 – Product Retirement (Service Continues)

Objective: Phase down the product.

Phase down can be accomplished using various techniques, including:

- Stopping production and managing inventory.
- Building to inventory and storing finished goods.
- Reducing manufacturing to low levels until customer demand is exhausted.

Selection of the appropriate technique is based on many factors, including product positioning, customer needs, inventory, volume plant load, and vendor stability.

Manufacturing is relieved of responsibilities when worldwide production ceases and Manufacturing transfers process and build responsibility to Customer Services. There may be instances when Manufacturing continues to build product to support Customer Services throughout the service life of the product; such a strategy must be determined in concert with Customer Services.

5.4.7.1 Phase 5 Closure Activities

Pending final decision of the Product Phase Down Team, reassign, dispose of, or hold inventory and capital equipment (according to agreed upon schedule of disposition).

Execute Phase 4B Product Phase Down plans and revisions.

Integrate Manufacturing plants (worldwide) to phase down product per plans.

Cease worldwide production of the product.

Transfer product control to Customer Services, if planned.

Archive all manufacturing documentation, both product and process.

Provide final impact statement (personnel, materials, equipment, environment, financials, and inventory).

Manage customer satisfaction perspectives. Minimize risks and trade-off exposure.

Arrange vendor phase down.

Manage final build process and PPD distribution.

Disposition excess inventory and capital equipment.

Reassign Manufacturing Phase Down Team.

Close out all product-specific financial control accounts/numbers.

5.5 REQUIRED MANUFACTURING DOCUMENTS

The overviews and outlines contained in this section serves as guidelines for creation of the plans and documents used by the Manufacturing Manager. The outlines present the minimum requirements for manufacturing plans and documents submitted for Phase Exit approval. The content, style, and scope of the plans and documents described herein may vary for hardware and software products, and across Manufacturing groups.

This section describes the following Manufacturing documents:

- Manufacturing Impact and Requirements Document
- Manufacturing Plan

NOTE

Online versions of the outline are available as a VAX DOCUMENT .SDML file and an ASCII file from Standards and Methods Control. Use the following file specification to obtain templates for the Manufacturing Plan.

JOKUR::PHASE_REVIEW:MFG_PLANS.SDML
JOKUR::PHASE_REVIEW:MFG_PLANS.TXT

Contact JOKUR::SMC regarding problems copying these files.

5.5.1 Manufacturing Impact and Requirements Document

OVERVIEW

Purpose:

Define and record the product's impact on: manufacturing technology, other products, and processes, manpower, space, cost, and required support.

Desired Characteristics:

Manufacturing long-range planning dependency assessment, key program milestones, build concepts, and manufacturability issues relating to design.

Audience:

All functional groups supporting the product.

Who is Responsible:

Manufacturing System Program Manager (MSPM) or Manufacturing member of the Product Team.

When Required:

Phase 0.

Relationship to Other Plans:

Summary included in the Product Business Plan.

MANUFACTURING IMPACTS AND REQUIREMENTS DOCUMENT OUTLINE

NOTE

The same outline is used for the Manufacturing Impact and Requirements Document and the Manufacturing Plan.

1.0 EXECUTIVE OVERVIEW

Volume source, program cost, schedule, major impacts, risks, opportunities, and major goals and objectives.

Purpose: Why are we doing this? What do we hope to accomplish?

- Major priorities (Time to Manufacture (TTM), cost, others)
- Major assumptions
- Major deviations from norm
- Major dependencies
- Make/buy alternatives considered (reason for acceptance or rejection)
- Brief product description
- Used on what products, if applicable
- Impact on other Digital products
- Marketing need and strategy—brief overview

2.0 MANUFACTURING BUSINESS STRATEGY

Where, how, and why product fits. Major worldwide manufacturing impact. Major goals and objectives.

3.0 PROCESS CAPABILITY STRATEGY

Major process changes. Process strategy. Assembly, test, and diagnostic coverage. Major goals and objectives. State-of-the-art process level. Impact on in-plant systems. Space impact. Capital impact. Competitive analysis of process.

MANUFACTURING IMPACTS AND REQUIREMENTS DOCUMENT OUTLINE (continued)

4.0 MAJOR MILESTONES AND SCHEDULE

5.0 MAJOR RISKS AND OPPORTUNITIES

Prioritize and indicate risk management.

6.0 MAJOR DEPENDENCIES

7.0 ORGANIZATIONAL IMPACTS

Strategy, teams, training, organizational design, and skills assessment.

8.0 FINANCIALS

New Product Start-Up (NPSU), capital expenditures, Return on Investment (ROI), Return on Assets (ROA), and transfer cost.

9.0 QUALITY STRATEGY AND PLANS

Qualification strategy and plans. Quality and reliability goals and objectives. Plans to get there. Data requirements and impacts. Data collection systems. In-process controls. POM strategy and plans. Revision control method.

10.0 MATERIALS STRATEGY AND PLANS

Sourcing strategy, plans, and flow. Inventory strategy, goals, and plans. Input/Output (I/O). Distribution strategy and plans. Header and order administration contacts.

11.0 PURCHASING STRATEGY AND PLANS

Key components and vendors identified. Sourcing strategies. Plans for getting vendors on QVL. Plans for obtaining materials for build plans. Documentation control method.

**MANUFACTURING IMPACTS AND REQUIREMENTS DOCUMENT
OUTLINE (continued)**

12.0 SOFTWARE STRATEGY AND PLANS

13.0 DOCUMENTATION STRATEGY AND PLANS

14.0 PHASE 2 AND 3 BUILD PLAN

Quantity required. Where built? Process plans. Human resources and training plans. Who will pay? Repair and scrap responsibilities.

15.0 SHIP AND BUILD PLANS

16.0 ATTACHMENTS

Business Plan and other applicable documents.

5.5.2 Manufacturing Plan

OVERVIEW

Purpose:

The Manufacturing Impacts and Requirements Document provides details of how, where, and when the product will be supplied. Considerations of the plan include:

- Customer Satisfaction through timely delivery of reliable products.
- Volume replication of qualified hardware and software.
- Cost reduction through product and process improvement.

Desired Characteristics:

- Manufacturing milestones schedule commitments
- Product volume supply commitments
- Detailed product plans from:
 - Materials
 - Quality
 - Manufacturing Engineering
 - Finance (Manufacturing Budgets)
 - Production
 - Information Systems
 - Organizational Development

MANUFACTURING PLAN OVERVIEW (continued)

Audience:

All functional groups supporting the product.

Who is Responsible:

Manufacturing Systems Program Manager (MSPM) or Manufacturing member of the Product Team.

When Required:

Prepared during Phase 1 and updated in each Phase.

Relationship to Other Plans:

A summary of the Manufacturing Plan is included in the Product Business Plan.

MANUFACTURING PLAN OUTLINE

NOTE

Use the format of the Impact and Requirements Statement for the Manufacturing Plan. Certain sections may be left blank due to unavailability of information during Phase 0. List major changes since last the plan and indicate section and page references for more detail.

CORPORATE PRODUCT OPERATIONS – SALES

6.1 PURPOSE

As each high revenue impact product moves through its life cycle, Corporate Product Operations uses the Phase Review Process to solicit worldwide inputs for the product and to establish criteria for a successful, well-integrated product introduction; mid-life enhancements; and product phase down.

NOTE

During the Phase Review Process, Corporate Product Operations represents Sales for all Geographies. Digital organizes its business according to the following Geographies: U.S., Europe, and the General International Area (GIA).

6.2 FUNCTIONAL RESPONSIBILITIES

6.2.1 Corporate Product Operations

Corporate Product Operations' responsibilities include:

- **Managing major product introductions worldwide, as well as coordinating post-announcement programs through the Announcement Strategy Committee (ASC) and related functional groups, such as the Field Launch Committee (FLC); the Press, Consultants, and Analysts (PCA); and the Marketing Advisory Board (MAB).**
- **Supporting the Marketing and Sales Strategy Committee (MSSC) on strategic pricing, and coordinating the development of short-term merchandising programs.**
- **Managing the worldwide Product Captain's process; coordinating product plans between Engineering, Manufacturing, Marketing, Sales and Services; and driving both the Corporate 3-Year and 8-Quarter Volume planning processes on behalf of Sales.**

6.2.2 Product Captain

Sales' perspectives of the product are represented to the PBU or other sponsoring organizations by the Product Captain, who approves phase exits as the Sales representative to the Product Team. It is crucial that the Product Manager involve the Product Captain as early as possible in the Phase Review Process, because their understanding and support of the product greatly enhances the role of the ASC and FLC at product introduction.

6.2.3 Geographies

Geographies' responsibilities through the Product Captain process include:

- Working with the Product Team to validate business assumptions of the product in terms of volume, price and market size, and to position the product with respect to internal products and external competition.
- Providing requirements and feedback that increase the productivity of the sales force, such as training, Sales and Customer tools, and Introduction and Program plans.
- Providing required information to the Product Captain for the Sales Impact and Requirements Document to communicate sales requirements that the Geographies see as necessary for the Phase 0 plan.
- Developing a Sales Plan that includes a sales strategy showing how and where the product will be sold, documenting programs (initial and continuing training, introduction activities), channels of distribution, initial volumes, and suggested positioning and impact on current products.
- Supporting development of product introduction strategies and coordinating execution of these strategies.
- Providing continuous feedback regarding sales of the product and its performance in the field to other organizational functions.

6.2.4 Corporate Introduction Process

One of the key phases in the product life cycle is Product Introduction. During the introduction process, the Product Manager may interface with ASC, MAB, FLC, PCA, and the Pricing and Announcement Committee (PAC).

The introduction phase in the life cycle of a strategic product is complex and crucial to the overall success of the product. For this reason, emphasis is placed on the implementation of the product introduction and the resources required to facilitate this implementation.

EL-CP595-00, The Corporate Product Introduction Guide describes in detail the entire announcement process, the available resources, and the steps required to successfully implement a corporate announcement. It is crucial that the Product Manager thoroughly understand the Corporate Introduction Process.

6.3 SALES ACTIVITIES AND DELIVERABLES

The Product Captain prepares Sales input documents for products deemed to have a significant revenue, "style of doing business," or leverage characteristics. These products are generally High Impact Hardware (H1) and High Impact Software (S1) category products. For some component products, such as large disks or terminals, an entire planned family of products is documented.

As the product moves through its various phase exits (shown in Figure 6-1), the respective Product Captain provides written inputs to the Product Manager through the Sales Impact and Requirements Document and the Sales Plan.

Figure 6-1: Product Captain Deliverables

		PHASE							
		0	1	2	3	4A	4B	5	
DELIVERABLES	Impact and Requirements Document		← Sales Plan →						
							Sales Phase Down Plan Written	Executed	
FORMAT		Pre-Product Announcement Format			Post-Product Announcement Format				

Fig6_1

The objectives of the Sales documents used for input to the Business Plan are "issues" oriented. The key objective is to address important issues through a management summary, directed at Sales Management and the Product Team.

Typical areas of consideration are covered in the Sales Memory Joggers, which are listed under heading 6.4, Executing and Exiting Each Phase.

For Top 100 Products, the Product Manager in the respective PBU or other sponsoring organization provides product status to the Product Captain throughout the product's life cycle. The Product Captain, representing Sales, determines the revenue and/or market impact of the product and then determines if a Sales Impact and Requirements Document or Sales Plan is required.

Note that the Product Manager may not receive an Impact Statement or Plan for each Top 100 product: At a minimum, the Product Manager shall receive from the Product Captain an acknowledgment of involvement or recommended alternative direction on how to acquire Sales input during each Phase of the product's life cycle.

If Sales determines that the product's sales impact is high, and that the product warrants an Impact and Requirements Document or a Sales Plan, the Product Captain shall initiate the document.

The Product Captain's input to the sponsoring organization is an integration of the following worldwide functional Sales groups' inputs:

- **Sales and Area Programs**
- **Sales Training**
- **Corporate Accounts**
- **Sales Support**
- **Corporate Product Introduction/Promotion**
- **Sales Operations**

Each phase in the product's life cycle provides a mechanism for systematic review of proposals, plans, and results in a manner that allows for controlled funding, resource allocation, and project approval. Sales is responsible for the Phase Review activities shown in Figure 6-2.

Figure 6-2: Sales Activities

PHASE					
0	1	2	3	4A 4B	5
Impact and Requirement Document	Sales Plan	Sales Plan	Sales Plan	Sales Plan	Sales Plan
		Introduction Strategy	Product Introduction		Phase Down
		Introduction Plan (2)	Post Introduction Review (2)	Phase Down Decision Made in Phase 4B	
		Develop Sales Material(2)			
		ASC Reviews			
	Proprietary Information Disclosure (1)	Proprietary Information Disclosure (1)	Proprietary Information Disclosure (1)		

(1) Corporate Product Operations will look to the Product Manager for the Proprietary Information Disclosure (PID), and will assist in its implementation. See DEC STD 197-0.

(2) Refer to "Corporate Product Introduction Guide" for definitions and further information on these activities.

Fig6_5

6.4 EXECUTING AND EXITING EACH PHASE

For each phase in the product's life cycle, there is a list of Exit Criteria, supporting Activities, and a set of questions that serve as Memory Joggers for the Product Captain. These questions are not all-encompassing; their purpose is to stimulate the thought process and surface issues as early as possible in the phase.

6.4.1 Phase 0 – Strategy and Requirement

Objectives: Communicate to the sponsoring organization the product requirements that Sales sees as necessary to take advantage of market and/or revenue opportunities, enhance product positioning, or lower the cost of doing business.

Obtain support for the product from appropriate Sales-related functional groups.

6.4.1.1 Phase 0 Exit Criteria

Sales supports the Business Plan.

Sales Impact and Requirements Document completed, if applicable.

Copies of approved Phase 0 Sales exit plans submitted to the Product Manager.

6.4.1.2 Phase 0 Activities

Review of the business assumptions by the three Geographies (U.S., Europe, and GIA).

Memory joggers reviewed and issues appropriately addressed.

Sales Impact Requirements Document issues mutually and satisfactorily resolved by Sales and other members of the Product Team.

6.4.1.3 Phase 0 Memory Joggers

Revenue Impact

What price band does the product fill?

Into what market(s) will the product be sold?

What is the business problem we are solving with the product?

How will the product impact other Digital products?

Will the product help make other products more useful?

Are related hardware or software products required, such as graphics printers, larger disks, and applications?

Are product feeds and speeds sufficient or are there architectural issues? For example: Is the I/O capability matched to the CPU power for the applications expected to be sold?

Are overlap products planned for Digital products or possible competition?

Sales Readiness

Are other Sales related cross-functional groups aware of this product and are they incorporating it into their plans?

Sales Strategies

Can the product be used with existing applications?

Should early technology announcements be made?

How does the product fit into Digital's Sales strategy?

What industry and applications marketing plans will be required?

Who are the major competitors in each price band and what is their market share?

From whom do we expect to take market share and why?

6.4.2 Phase 1 – Planning and Preliminary Design

Objectives: Ensure implementation of Sales Phase 0 product inputs to the Product Team. Communicate assumption changes to the Geographies.

6.4.2.1 Phase 1 Exit Criteria

Sales' Phase and Exit requirements incorporated into the product, and differences resolved by the Product Team.

Product assumptions and requirements evaluated since the Phase 0 exit. Sales plans updated and significant changes communicated to the Product Team.

Marketing Plan received and reviewed by Sales.

Sales strategy formulated and implemented.

Sales nominates or is in agreement with the nominated selection of Field Test Sites.

Executive Summary of the Sales Plan submitted by the Product Captain for inclusion in the Phase 1 Business Plan.

Copies of approved Phase 1 Sales exit plans submitted to the Product Manager.

6.4.2.2 Phase 1 Activities

Consult with the Law Department to ensure that pre-announcement activities, through the the Product Information Disclosures (PIDs), allow for timely implementation of the protection strategy.

Ensure that the PID has been written and approved, if appropriate.

Annotate the Sales Impact and Requirements Document with the latest Product Team commitments.

Write the Sales Plan.

6.4.2.3 Phase 1 Memory Joggers

Revenue Impact

What are the projected technical, operational, sales, and service related risks for the project?

Is there an impact on other Digital products targeted for introduction in the same time frame? If so, to what extent?

What price band does the product fill?

Into what market(s) will the product be sold?

What business problem does the product solve?

How will the product impact other products sold by Digital?

Will the product help make other products more useful?

Are related hardware or software products needed, such as graphics printers, larger disks, and applications?

Are product feeds and speeds sufficient or are there architectural issues? For example: Is the I/O capability matched to the CPU power for the applications expected to be sold?

Are overlap products planned for Digital Products or possible competition?

Sales Readiness

Are other worldwide Sales and related cross-functional groups incorporating this product into their plans, including Marketing, Sales Support Training, and Field Service.

Sales Strategies

Does the product require new applications, wiring, or environmental changes?

How will the Sales force be motivated to sell the product?

Will there be long sales cycles?

Is the product priced properly for the intended channel?

Is the packaging scheme overly complex?

Can the product be used with existing applications?

Are related hardware, software, and service products required?

When should we start integrating the product into Digital's customer plans?

Should early technology announcements be made?

Has the PID presentation and implementation plan been developed and approved by the responsible management and Corporate Product Operations?

What will be the product's distribution channels?

Are there any issues relative to competitors' strengths or sales methods?

How does the product fit into Digital's Sales strategy?

How can we test our sales strategy for the product?

What industry and applications marketing plans will be required?

Who are the major competitors in each price band and what is their market share?

From whom do we expect to take market share and why?

6.4.3 Phase 2 – Design and Implementation

Objective: Establish criteria for a successful, well-integrated product introduction.

6.4.3.1 Phase 2 Exit Criteria

Sale's Phase 1 Exit requirements incorporated into the product, and differences resolved by the Product Team.

Product assumptions and requirements evaluated since the Phase 1 exit. Sales plans updated and significant changes communicated to the Product Team.

Sales agrees on product quality, manufacturing volumes, market readiness, product positioning, and the overall plan.

Sales Plan updated and distributed to Product Management and other related sales functional groups.

6.4.3.2 Phase 2 Activities

Review the product to ensure that committed Sales requirements have been implemented.

Product Captain updates the Sales Plan.

Approve the list of nominated Field Test Sites.

Consult with the Law Department to ensure that new pre-announcement activities through Product Information Disclosures (PIDs), allow for timely implementation of the protection strategy.

Develop an implementation plan for the Proprietary Information Disclosure (PID).

Product Captain develops the Introduction Strategy and presents it to the appropriate committee.

Corporate Product Operations integrates the Corporate Introduction Plan.

Receive product introduction information package from Product Management and distribute package to the Geographies to determine Sales equipment requirements for Introduction activities.

6.4.3.3 Phase 2 Memory Joggers

Revenue Impact

What are the projected technical, operational, sales, and service related risks for the project?

Is there an impact on other Digital products targeted for introduction in the same time frame? If so, to what extent?

Is there a PBU, Sales, and Marketing agreement on the 8-Quarter Volume Plan?

What are the key risks regarding the product's availability, including legal, engineering, manufacturing, software, and service risks?

Has PAC approved the product's pricing?

What price band does the product fill?

What is the business problem we are solving with the product?

How will the product impact other products sold by Digital?

If this is a replacement product, are there backlog issues?

Will the product help make other products more useful?

Are overlap products planned for Digital products or possible competitor's products?

Sales Readiness

Has the Product Introduction Information Package been distributed to the Geographies, and have they responded with their introduction equipment forecasts and plans to Corporate Product Operations?

At announcement, will all introduced products be available for FRS? If not, will announcement waivers be required?

Can Field Test Sites also be used for public testimonials of the product?

What testing has the product received or will it receive to ensure high availability (uptime)?

What benchmarks and application characterizations will Sales receive to compare the product to other Digital and non-Digital products?

What application demos will be available to Sales so that they can properly demonstrate the overall solution?

Can Manufacturing support the Field Ship Plan for the first 90 days after FRS?

What out-of-the norm resources are required to sell this product?

Does a 1-year or 5-year cost-of-ownership competitive comparison exist?
Has Corporate Product Operations reviewed the comparison?

Into what market(s) will the product be sold? Is the Sales Force equipped to sell the product into this market?

Is the Product Manager aware of the process for successfully positioning and introducing Corporate products in the marketplace?

Has the Product Manager read the *EL-CP595-00, Corporate Product Introduction Guide* from Corporate Product Operations?

Is the product complete in terms of customer requirements?

Is product interconnectability an issue?

Are product feeds and speeds sufficient or are there architectural issues?
For example: Is the I/O capability matched to the CPU power for the applications expected to be sold?

What sales and sales support training will be required?

What are the customer training requirements?

Sales Strategies

What are the customer migration issues?

Is there a plan to handle customer migration issues?

Are related hardware or software products required, such as graphics printers, larger disks, and applications?

Does the product require new applications, wiring, or environmental changes?

How will the sales force be motivated to sell the product?

Will there be long sales cycles?

Is the product priced properly for the intended channel?

Will special terms and conditions be required?

Is the packaging scheme overly complex?

Can the product be used with existing applications?

Are related hardware, software, and service products required?

When should we start integrating the product into Digital's customer plans?

Has the PID Presentation and Implementation Plan been developed and approved by the responsible management and Corporate Product Operations?

Should early technology announcements be made?

What will be the product's distribution channels?

Will we need special product merchandising?

Are there any issues relative to competitors' strengths or sales methods?

How can we test our sales strategy for the product?

How does the product fit into the Digital Sales strategy?

What industry and applications marketing plans will be required?

What are the major themes and messages associated with the product?

What is the announcement strategy?

Who are the major competitors in each price band and what is their market share?

From whom do we expect to take market share and what is the plan to accomplish this?

6.4.4 Phase 3 – Qualification

Objectives: Implement the Corporate Introduction Plan to ensure that Sales can successfully market, sell, and support the product.

Successfully announce the product so that it meets the introduction goals and objectives established by Announcement Strategy Committee (ASC).

6.4.4.1 Phase 3 Exit Criteria

Product assumptions and requirements evaluated since the Phase 2 exit. Sales plans updated and significant changes communicated to the Product Team.

Sales is satisfied that the overall system solution meets customer requirements as defined in the Phase 2 Sales Plan. These requirements include hardware, system software, Digital layered products, 3rd party hardware and software, system integration, services, and overall quality.

First Revenue Ship (FRS) accomplished.

All Announcement and FRS criteria met and adequate product volumes available to meet sales' demand.

Sales Plan updated.

Copies of approved Phase 3 Sales exit plans submitted to the Product Manager.

6.4.4.2 Phase 3 Activities

Ensure that all introduction checklists for product readiness and introduction readiness are completed and have been reviewed by the appropriate committees.

Ensure that the overall system solution is evaluated and meets customer requirement.

Update and implement the Introduction Plan.

Drive the development of quality sales materials, sales tools, sales training, and introduction programs.

Develop and implement the First Day Order Process.

6.4.4.3 Phase 3 Memory Joggers

Revenue Impact

What are the projected technical, operational, sales, and service related risks for the project?

Is there an impact on other Digital products targeted for introduction in the same time frame? If so, to what extent?

Does a 1-year or 5-year cost-of-ownership competitive comparison exist?
Has Corporate Product Operations reviewed the comparison?

Is there a PBU, Sales, and Marketing agreement on the 8-Quarter Volume Plan?

What are the key risks regarding the product's availability including legal, engineering, manufacturing, software, and service risk?

Has PAC approved the product's pricing?

Will the product impact other products sold by Digital?

If this is a replacement product, are there any backlog issues?

Sales Readiness

Has the Product Introduction Information Package been distributed to the Geographies, and have they responded with their introduction equipment forecasts and plans to Corporate Product Operations?

At announcement will all introduced products be available for FRS? If not, will announcement waivers be required?

Can Field Test Sites also be used for public testimonials of the product?

What testing has the product received or will it receive to ensure high availability (uptime)?

What benchmarks and application characterizations will Sales receive to compare the product to other Digital and non-Digital products?

What application demos will be available to Sales so that they can properly demonstrate the overall solution?

Can Manufacturing support the Field Ship Plan for the first 90 days after FRS?

What (out-of-the-norm) resources are required to sell this product?

Is the Product Manager aware of the process for successfully positioning and introducing Corporate products in the marketplace?

Has the Product Manager read the *EL-CP595-00, Corporate Product Introduction Guide* from Corporate Product Operations?

Is the product complete in terms of customer requirements?

Is product interconnectability an issue?

What skills and tools will the sales force need to sell the product as a customer solution?

What sales and sales support training will be required?

What are customer training requirements?

Sales Strategies

What are the customer migration issues?

Is there a plan to handle customer migration issues?

Does the product require new applications, wiring, or environmental changes?

How will the sales force be motivated to sell the product?

Will there be long sales cycles?

Will special terms and conditions be required?

Is the product packaging scheme overly complex?

Are related hardware, software, and service products required?

When should we start integrating the product into Digital's customer plans?

Has the PID presentation and implementation plan been developed and approved by the responsible management and Corporate Product Operations?

Will we need any special product merchandising programs?

Are there any issues relative to competitors' strengths or sales methods?

How can we test our sales strategy for the product?

What industry and applications marketing plans will be required?

What are the major themes and messages associated with the product?

What is the announcement strategy?

Who are the major competitors in each price band and what is their market share?

From whom do we expect to take market share and what is the plan to accomplish this?

6.4.5 Phase 4A – Ramp-Up

Objective: Ensure that revenue and volume Sales Plans are meeting expectations.

6.4.5.1 Phase 4A Exit Criteria

Product assumptions evaluated since the Phase 3 exit. Sales plans updated and significant changes communicated to the Product Team.

Sales agrees that the volume ramp and product quality are adequate to meet demand.

Copies of approved Phase 4A Sales exit plans submitted to the Product Manager.

6.4.5.2 Phase 4A Activities

Conduct a Post-Introduction Review to ensure that adequate sales and marketing programs are in place to support manufacturing volume.

When product demand/supply imbalance exists, implement special sales programs.

Prepare to implement post-introduction sales strategies, such as mid-life kickers.

Work with the Product Team to convey Digital's messages to customers.

Update the Sales Plan.

6.4.5.3 Phase 4A Memory Joggers

Revenue Impact

How is the product being received by Digital's customer?

Are there technical, operational, sales, and service related issues?

Can manufacturing continue to support the Field Ship Plan?

Is there a PBU, Sales, and Marketing agreement on the 8-Quarter Volume Plan?

When is it appropriate to phase down the product?

Sales Strategies

Have product introduction goals been met?

What additional programs are needed to ensure that business goals are met?
Who will drive these programs?

6.4.6 Phase 4B – Steady–State Operation

Objectives: Review Sales objectives, strategies, tactics, and programs for the product, and propose replacement and enhancement strategies. Prepare Sales for product phase down plan.

6.4.6.1 Phase 4B Exit Criteria

Provide the Product Manager with Sales input to the Product Phase Down (PPD) Plan.

6.4.6.2 Phase 4B Activities

Review all functional Product Phase Down (PPD) Plans including Product Management, Engineering, Manufacturing, Marketing, Services, and Sales.

Work with cross–functional sales groups to maximize product revenue.

Participate with the other members of the Product Team to develop replacement and Product Phase Down messages for customers.

Write the Sales PPD Plan.

6.4.6.3 Phase 4B Memory Joggers

Has the Product Captain notified the three Geographies of the Product Phase Down strategy?

Revenue Impact

When is it appropriate to phase down the product?

Sales Strategies

What is the plan to communicate the Phase Down Strategy to customers and sales?

6.4.7 Phase 5 – Product Retirement (Service Continues)

Objectives: Maintain customer satisfaction, refrain from selling the product, and ensure that a proper alternate product replacement strategy is in place.

6.4.7.1 Phase 5 Activities

Ensure that there are **NO** customer satisfaction issues relative to the phase down strategy, such as contractual obligations and migration plans.

Product Captain ensures that the Product Manager has completed the necessary paperwork to remove the product from the "Active" section of the price book.

Participate with other members of the Product Team to deliver the replacement and Product Phase Down messages for customers.

6.5 REQUIRED SALES DOCUMENTS

The overviews and outlines contained in this section serve as guidelines for the creation of the plans and documents used by the Product Captain (or Product Manager, as warranted by the product) in support of the Phase Review Process. The outlines present the minimum requirements for Sales plans and documents submitted for Phase Exit approval. The content, style, and scope of the plans may vary for hardware and software products.

The following pages show samples of the formats for the following documents:

Sales Impact and Requirements Document for Phase 0 Exit (Pre-Product Announcement Outline)

Sales Plan for Phase 1, 2, and 3 Exits (Pre-Product Announcement Outline)

Sales Plan for Phase 4A and 4B Exits (Post-Product Announcement Format)

NOTE

Online versions of these outlines are available as a VAX DOCUMENT .SDML file and an ASCII file from Standards and Methods Control. Use the following file specifications to obtain outlines for the required Sales Plans.

JOKUR::PHASE_REVIEW:SALES_PLANS.SDML
JOKUR::PHASE_REVIEW:SALES_PLANS.TXT

Contact JOKUR::SMC regarding problems copying these files.

OVERVIEW OF SALES DOCUMENTS

NOTE

The overview presented here is used for all three sales documents.

Purpose:

The Product Captain's deliverables, through the Impact and Requirements Document and the Sales Plan are to:

- Provide evaluation of the product from the Sales' perspective.
- Provide a method to approve each Phase Exit for Sales.
- Escalate unresolved Phase Exit issues to senior management.
- Provide updated information as Sales programs are initiated and modified.

Who is Responsible:

The Product Captain, as defined under subheading 6.2 Functional Responsibilities. When Sales has determined that it need not be directly involved as a member of the Product Team, the Product Manager coordinates with the Marketing Member of the Product Team to complete all announcement and Sales related activities and exit criteria.

OVERVIEW OF SALES DOCUMENTS (continued)

When Required:

When Sales deems it appropriate, each phase exit requires a Sales Impact and Requirements Document or a Sales Plan.

Audience:

The Sales Impact and Requirements Document and Sales Plan are written for Sales and the Product Team.

Relationship of Documents to Other Activities:

- **Business Plan**

A summary of the Sales Impact and Requirements Document or the Sales Plan is included in the Product Business Plan.

- **Marketing Plan**

The Sales Plan is developed and reviewed in conjunction with the Marketing Plan.

Introduction Strategy and Corporate Introduction Plan

The Sales Plan serves as a resource document for the Introduction Strategy and the Field portions of the Corporate Introduction Plan.

6.5.1 Sales Impact and Requirements Document for Phase 0 Exit (Pre-Product Announcement Outline)

The purpose of the Sales Impact and Requirements Document is to communicate to the sponsoring organization the product requirements that Sales sees as necessary to take advantage of market and/or revenue opportunities, enhance product positioning, or lower the cost of doing business. This document is also used to obtain the support of the appropriate Sales-related functional groups.

SALES IMPACT AND REQUIREMENTS DOCUMENT OUTLINE

1.0 INTRODUCTION

Statement of Purpose

Participating groups that provide inputs to the Impact and Requirements Document.

2.0 MANAGEMENT SUMMARY

A detailed Sales summary of key issues relative to the product. For example:
What functions and features are required in the product in order for it to be successful?

What sales strategy must be adopted?

What are some of the risks?

For additional questions, refer to the detailed memory joggers listed in this chapter.

3.0 PRODUCT ASSUMPTIONS

This section provides an understanding of the product, from a Sales perspective, and can be used to communicate information to other Sales-related Digital functional groups. It provides:

- Product Description
- Product Configurations
- ASVs (Average System Values)
- Announcement Date
- Manufacturing Ramp
- Performance Positioning
- Availability of Related Peripherals and Software
- Other pertinent information

6.5.2 Sales Plan for Phases 1, 2, and 3 Exits (Pre-Product Announcement Outline)

The purpose of the Sales Plan is to alert Sales functions; solicit support for products yet to be announced; and to establish criteria for a successful, well-integrated product introduction. In addition to Sales inputs from the Geographies, the Product Captain shall obtain Marketing inputs from the MAB Team's Marketing Plan.

The Sales Plan describes how and where a product will be sold, documenting programs (initial and continuing training, announcement day activities), channels of distribution, selling costs, initial volumes, and suggested positioning.

SALES PLAN OUTLINE FOR PHASES 1, 2, AND 3

* Refer to the Sales Impact and Requirements Document Outline for detail. (Subheading 6.5.1)

*** 1.0 INTRODUCTION**

*** 2.0 MANAGEMENT SUMMARY**

*** 3.0 PRODUCT ASSUMPTIONS**

4.0 ANNOUNCEMENT CHECKLIST

The checklist focuses and monitors issues that center on announcement readiness. The following committees consider them important for announcement:

- MSSC – Marketing Sales and Strategy Committee
- PAC – Pricing and Announcement Committee
- ASC – Announcement Strategy Committee
- FLC – Field Launch Committee
- PCA – Press, Consultants, and Analysts
- MAB – Marketing Advisory Board

SALES PLAN OUTLINE FOR PHASES 1, 2, AND 3 (continued)

There are four sections to the checklist. The content of each checklist is the responsibility of the following:

Checklist	Title	Responsibility
Checklist 1	Product Completion	Product Captain
Checklist 2	Customer Readiness	Business Management of Corporate Product Operations
Checklist 3	Press Day Readiness	PCA Committee
Checklist 4	Field Readiness	FLC

The Product Captain and the Product Manager begin the ASC checklist activities six months in advance of the scheduled product announcement date. See the *Corporate Product Introduction Guide* for samples of these checklists.

5.0 DETAILED SALES ACTION PLAN

This is a call-to-action driven by the Product Captain to ensure that the product achieves its introduction objectives. Develop this plan according to the following format:

Goal	Action Item	Performed By	Test For Completion	Date of Completion	Priority Low/Med/High
------	-------------	--------------	---------------------	--------------------	-----------------------

6.5.3 Sales Plan Outline for Phase 4A and 4B Exits (Post-Product Announcement Format)

The purpose of the Phase 4A and 4B Sales Plan is to integrate Corporate and Sales Field functions into a comprehensive set of action items to ensure that revenue and unit plans are met through product phase down. This format is used for products in the mature state of their life cycle.

SALES PLAN OUTLINE FOR PHASES 4A AND 4B

* Refer to the Sales Impact and Requirements Document Outline for detail (subheading 6.5.1).

** Refer to the outline of Sales Plan for Phases 1, 2, and 3 for detail (subheading 6.5.2).

- **1.0 INTRODUCTION**

- * **2.0 MANAGEMENT SUMMARY**

- **3.0 PRODUCT ASSUMPTIONS**

- 4.0 PRODUCT ANALYSIS/PERFORMANCE**

- Business Sizing
 - Historical Sales Analysis
 - Status Against Plan
 - Deviation From Plan
 - Supply Issues
 - Forecast Issues

- ** **5.0 DETAILED SALES ACTION PLAN**

CUSTOMER SERVICES

7.1 PURPOSE

Customer Services includes Field Service, Software Services, and Educational Services.

Customer Services provides an evaluation of the product impact on training needs for Educational Services, professional services for Software Services, and remedial and installation services for Field Service. They develop product service strategies and influence product goals through reliability and maintainability requirements, and availability features. These service strategies feed the service development process. Customer Services attempts to integrate service strategies with the Product Business Unit (PBU) or sponsoring organization strategy, in order to optimize Digital's ability to competitively meet customer needs.

Customer Services Systems Engineering (CSSE) is usually the Customer Services representative to the Corporate Phase Review Process. To meet the service delivery needs of Digital's customers, CSSE represents the needs of Field Service Educational Services and Field Service in the planning, development, and phase down of Digital's products. CSSE works closely with Educational Services and Software Services as their activities influence Field Service.

The Software Services (SWS) business now involves Professional Services, including custom applications, consulting, and residencies. SWS also have their own engineering function and, as such, develop corporate products. In addition, SWS performs a pre-sales function for the sales organization, develops service package for selected products, and maintains an Applications Software Solutions and Expertise Transfer Service (ASSETS) library to serve as foundations for customer solutions.

7.2 FUNCTIONAL RESPONSIBILITIES

Customer Services' responsibilities are to:

- Develop system, product, local- and wide-area networks, serviceability requirements, and plans that address service impact, requirements, and implementation.
- Develop service and support plans to ensure that products can be serviced by field support organizations.
- Ensure integration of service strategies with PBU or sponsoring organization strategies to optimize Digital's ability to meet customer needs.
- Ensure field preparedness to support the product throughout its life cycle by providing appropriate service tools such as diagnostics, documentation, training, and spare parts.
- Provide Corporate-level back-up and support to the Services' organizations.
- Manage service performance in the field throughout the product's life cycle.
- Monitor service metrics against goals and make, if necessary, appropriate recommendations to alter the product or product services.

7.3 CUSTOMER SERVICES ACTIVITIES AND DELIVERABLES

Figure 7-1 shows the deliverables and activities of Customer Services within the Phase Review Process.

Figure 7-1: Customer Services Activities and Deliverables

PHASE						
0	1	2	3	4A	4B	5
← Services Impact and Requirements Doc →						
Written	Annotated	Updated if assumpt. and/or req. change				
Services New Prod. Notifier	← Customer Services Plan →				← Product Phase Down Plan →	
	Created	Implemen- tation Tested	Service Delivery		Written	Implemented
	Serviceability/Maintainability Test Plan			On-Going Services		Services Retirement Proposal (FSPPC)
	Draft	Part 1- Field Test	Part 2- FRS	Monitor and Evaluate		
	← Services Training Activities →					
	Requirements	Develop		On-going Training		
	← Services Pricing Activities →					
	Estimate	Develop	Approval (FSPPC)	Monitor and Evaluate		
	← Services Logistics Activities →					
	Material Planning	Technical Strategies	Build/Repair/Est	Repair Transfer		

Fig7_1

7.4 EXECUTING AND EXITING EACH PHASE

Each phase in the product's life cycle provides a mechanism for the systematic review of proposals, plans, and results in a manner that allows for controlled funding, resource allocation, and project approval.

For each phase in this chapter, there is a list of Exit Criteria, supporting Activities and a set of questions that serve as memory joggers for the Customer Services Project Manager. These questions are not all-encompassing; their purpose is to stimulate the thought process and surface issues as early as possible in each phase.

7.4.1 Phase 0 – Strategy and Requirements

Objective: Develop a Services Impact and Requirements Document. This document includes the following:

- Product impact on services
- Business goals and impact
- Anticipated service strategy
- Serviceability requirements
- Reliability, Availability, and Maintainability Program (RAMP) and metrics

7.4.1.1 Phase 0 Exit Criteria

Services Impact and Requirements Document written, reviewed, approved, and published. Copies provided to the Product Manager for inclusion in the Product Requirements Document.

Services Impact and Requirements Document Executive Summary provided to the Product Manager for inclusion in the Phase 0 Business Plan.

Copies of approved Phase 0 Customer Services exit plans submitted to the Product Manager.

7.4.1.2 Phase 0 Activities

Write the Services Impact and Requirements Document.

Evaluate the Product and Market Requirements Documents to determine:

- How this product fits within the current service strategy
- What, if any, new pieces of the Service Strategy need to be created or modified

Become knowledgeable of future service strategies so as to understand the impact of this product on long-range service goals.

Create serviceability and RAMP goals for the product.

Work with the Product Team to understand the constraints and requirements of the proposed product.

Generate and distribute Services New Product Notifier to Customer Services.

7.4.1.3 Phase 0 Memory Joggers

What is the product's anticipated market life?

What is the product's anticipated service life?

Can the product be supported through existing service strategies?

Is the design compatible with existing test strategies used by Services?

If this design has been used in the past, what was its service cost breakdown?

What are the expected yearly build rates for the life of the product?

What effect will geographical markets have on support of the product?

Has the Customer Services Team been formed?

What are the Customer Services requirements for the total product? Include packaging, pricing, diagnostics, documentation, and testing.

7.4.2 Phase 1 – Planning and Preliminary Design

Objectives: Develop Customer Services Plan reflecting business goals and service strategies, serviceability goals for both product and service delivery, training intent, and estimated service pricing.

7.4.2.1 Phase 1 Exit Criteria

Services committed to supporting the product.

Assumptions and requirements evaluated since the Phase 0 exit. Functional plans updated and significant changes communicated to the Product Team.

Phase 1 Customer Services Plan written, reviewed, approved, and published.

Executive Summary of the Customer Services Plan included in the Phase 1 Business Plan.

Copies of approved Phase 1 Customer Services exit plans submitted to the Product Manager.

7.4.2.2 Phase 1 Activities

Analyze functional specifications, focusing on meeting hardware and/or software goals.

Analyze the product's quality goals to determine how well they support service goals, including Problem Free Installation (PFI), measured Mean Time Between Failures (MTBF), and revision management.

Annotate the Services Impact and Requirements Document with Engineering's commitments.

Work with Engineering to include agreed upon service requirements in the product.

Work with Engineering to include plans for testing the product with configurations representative of the intended user environment, complementary hardware and software products.

Prepare a draft of the Serviceability/Maintainability Test Plan.

Work with Educational Services to determine training requirements.

Supply the Product Manager with the estimated number of units required to support Phase 2 and 3 service activities.

Work with Software Product Services (SPS) and Hardware Product Services (HPS) to estimate service pricing, as required.

Assist Field Service Logistics (FSL) with their material planning needs.

Work with Field Service Geography Planning groups on their service delivery plans.

With Customer Services Team, agree on Services' Phase 1 Exit Criteria.

7.4.2.3 Phase 1 Memory Joggers

Have you evaluated design specifications and proposed specification changes to support the Services strategy?

How will product improvements or enhancements affect your support strategy?

Has the product been introduced on the New Product Planning Data Base (PASS)?

Has a replacement product been identified for this product?

Is there a strategy for product evolution or migration?

Is a corrective action system planned that directly links to the appropriate design support organization?

Has a time-phased schedule been prepared that outlines the key elements required for successful implementation of a product support plan?

Are self-test features incorporated into the product design?

What is your estimated Mean Time Between Failures (MTBF) and Mean Time to Install (MTTI) for product hardware?

For product software, what is your estimated Mean Time Between Call (MTBC), MTTI, and Software Problem Report (SPR)/QTR?

What is the update frequency and cost of media? (Software)

What is the anticipated contract penetration and mix?

What level of service is planned for OEMs, distributors, and end users?

Is a license agreement involved with the servicing of buyout products?

What percent of the product will require buyout spares? (Hardware)

Have you received and evaluated the Educational Service Strategies and Requirements Documents?

7.4.3 Phase 2 – Implementation and Design

Objectives: Deliver an updated Customer Services Plan.

Prior to Phase 2 exit, Customer Services delivers an updated Customer Services Plan including:

- Service Delivery Plan
- Service Operations Plan
- Training Plan
- Logistics Plan

7.4.3.1 Phase 2 Exit Criteria

Assumptions and requirements evaluated since the Phase 1 exit. Functional plans updated and significant changes communicated to the Product Team.

Customer Services Plan updated, including Service Delivery, Service Operations, Training, and Logistics (hardware) Plans.

Serviceability/Maintainability Test Plan written, reviewed, approved, and published.

Field Test support commitments completed. (Software)

Customer Services Plan Executive Summary included in the Phase 2 Business Plan.

Copies of approved Phase 2 Customer Services exit plans submitted to the Product Manager.

7.4.3.2 Phase 2 Activities

Review the design to ensure that committed Services requirements have been implemented.

Evaluate prototype against service requirements.

Evaluate qualification plans for service concerns.

Evaluate documentation drafts.

Execute Part 1 of the Serviceability/Maintainability Test Plan to ensure that the product is ready for Field Test.

Participate in Field Test Planning.

With Customer Services Team, agree on Services' Phase 2 Exit Criteria.

7.4.3.3 Phase 2 Memory Joggers

Has the Field Test strategy been provided for the product? Has a Field Test Plan been written?

Is a system in place to obtain feedback reports for field test sites?

Have you reviewed the final specifications?

Do special service tools need to be purchased or designed?

Is special product installation required?

Will storage and packing strategies meet your needs for site installation?

Has the Training Plan been updated?

Is a system in place to verify and certify the adequacy of training (both content and quantity of resources trained).

Is a process in place to update service manuals and associated documents?

Is any special site specification required?

Is any support subcontracted? Does the contract specify revision management control requirements?

Are you negotiating support contracts for all Geographies where the product will be sold?

For hardware products:

Have prototypes and first production models been evaluated against service requirements?

Does the self-test coverage provide useful diagnostic feedback for product repair?

Has the Logistics Plan been updated?

Have spares forecasts been placed on Manufacturing?

How will the stock of spare parts be maintained in the plants? At the distributors? At repair centers?

How many parts or components will be interchangeable?

Is *DEC STD 009-0 Project Specification* information available from Engineering?

Have contracts been signed for spares acquisition?

Is Revision Management Documentation available from Engineering?

7.4.4 Phase 3 – Qualification

Objective: Prepare Customer Services for product service.

Prior to Phase 3 exit, Customer Services will deliver the final Customer Services Plan including:

- Service delivery commitment
- Training intent and/or Plan
- Logistics Plan
- Field readiness assessment
- Service pricing approval

7.4.4.1 Phase 3 Exit Criteria

Assumptions and requirements evaluated since the Phase 2 exit. Functional plans updated and significant changes communicated to the Product Team.

Service organizations prepared to service the product in all Geographies where the product will be sold.

Service pricing approved.

Customer Services Plan completed.

Problem reporting procedures operational and communicated to the field.

Maynard List Price (MLP), Software Product Description (SPD), and New Products Form (NPF) approved.

Serviceability/Maintainability Test Plan implemented.

Serviceability/Maintainability Test Evaluation written.

Customer Services Plan Executive Summary included in the Phase 3 Business Plan.

Copies of approved Phase 3 Customer Services exit plans submitted to the Product Manager.

7.4.4.2 Phase 3 Activities

With Customer Services Team, agree on Services' Field Readiness.

Participate in Field Test activity, as required.

Evaluate Field Test results for product readiness.

Report Serviceability/Maintainability Test results.

Monitor all Engineering Change Orders (ECOs) for Services impact, including assessing need for Field Change Orders (FCOs).

Evaluate Pricing and Announcement Committee (PAC) proposal for announcement and FRS readiness.

Ensure that release copies of diagnostics, documentation, and identified software are made available to appropriate Service personnel (such as support centers and districts) in time to support initial product shipments.

With Customer Service Team, generate Post-FRS reliability monitoring requirements.

7.4.4.3 Phase 3 Memory Joggers

Has the Customer Services Plan been updated?

Is documentation available to Service organizations that accurately depicts the product being shipped?

Have you reviewed the serviceability and maintainability of the product?

Has a Field Test Evaluation Report been written?

Are training and trained resources in place to support the product?

For hardware products:

Has site management information for the product been communicated to the field?

Has environmental information been provided to the field?

Is interchangeability in the field assured?

Are spare parts in place to support the product?

Is a system in place to ensure that spare parts will be compatible with the hardware configuration for which they are to be used?

Is a repair plan agreed upon?

Have Automatic Distribution System (ADS) kits been approved? (Software)

Have support starter kits been distributed to the field?

7.4.5 Phase 4A – Ramp-Up

Objective: Ramp up Service activities to meet steady-state service plans.

7.4.5.1 Phase 4A Exit Criteria

Assumptions and requirements evaluated since the Phase 3 exit. Functional plans updated and significant changes communicated to the Product Team.

Execute Customer Services Plan.

Achieved steady-state service capability worldwide.

Copies of approved Phase 4A Customer Services exit plans submitted to the Product Manager.

7.4.5.2 Phase 4A Activities

Ramp up training and material availability to meet the steady-state service plan.

Monitor all ECOs for services impact and assess need for FCOs.

Monitor service metrics against goals.

Monitor service penetration against plan

Monitor service delivery implementation against plan.

7.4.5.3 Phase 4A Memory Joggers

Has Support Engineering committed to support Services' problem reporting systems (such as Common Log Desk (CLD), Problem Resolution and Information Systems Management (PRISM), or Technical Information Management Exchange (TIME))?

7.4.6 Phase 4B – Steady–State Operation

Objective: Provide steady–state service levels, monitor Service activities against plans, and orchestrate change as necessary within Services.

7.4.6.1 Phase 4B Exit Criteria

Customer Services Product Phase Down Plan written, reviewed, approved, and published.

Customer Services Plan Executive Summary included in the Phase 4B Business Plan.

Copies of approved Phase 4B Customer Services exit plans submitted to the Product Manager.

7.4.6.2 Phase 4B Activities

Review all functional Product Phase Down (PPD) plans including those from Product Management, Engineering, Manufacturing, Marketing, and Sales.

Monitor all ECOs for services impact, and assess need for FCOs.

Review service pricing to maximize service revenue.

Review service offerings for new opportunities.

Look for ways to maximize results (to do better than planned).

Assess the Field Service Business impact, if any, of implementing excess inventory disposition programs. (Hardware)

Develop the long-range Installed Base Forecast.

Negotiate with Manufacturing on excess inventory disposal. (Hardware)

Monitor service metrics against goals.

Monitor service penetration against plan.

Monitor service delivery implementation against plan.

7.4.6.3 Phase 4B Memory Joggers

If applicable, has the PBU or sponsoring organization manager negotiated the transition of product management responsibilities?

Have you met with Training to review training strategy and implementation?

Have you notified Training and Documentation of changes in service strategy?

**Has the most cost effective and long term logistics strategy been determined?
(Hardware)**

Are long term product material requirements sufficient?

Do contingency plans exist for ongoing manufacturing? (Hardware)

**Have you investigated self-maintenance demands for modules, documentation,
and diagnostics? (Hardware)**

Have you determined a deinstallation strategy?

Have you evaluated the feasibility of CSSE providing engineering-level support?

**If the product is software, have you considered transferring it to an alternative
development group such as Mature Software Services?**

**If the product is software, have you deleted "H" kits and moved service items to
maintenance only?**

**Has the Services Phase Down Template been entered into the Planning Automated
Support System (PASS)?**

7.4.7 Phase 5 – Product Retirement (Service Continues)

End of Sales Life and Ongoing Field Service Support

Objective: During Phase 5, Customer Services supports the Field Service Product Phase Down (PPD) Philosophy, which states:

"As business partners with our customers, and for as long as there is a customer need, we will continue to support Digital hardware and software products, or develop customer-specific solutions, when the Digital standard service offerings are no longer available."

7.4.7.1 Phase 5 Closure Criteria

All services cease.

7.4.7.2 Phase 5 Activities

Identify focused Product Team representatives responsible for developing account-specific End-of-Life (EOL) programs.

Look for ways to maximize results (to improve on past performance).

Provide ongoing customer support.

Ensure material availability for expected service life of the product.

Review results of the Customer Services Product Phase Down Plan to determine customer satisfaction.

If service is to be discontinued, sponsor a proposal to:

- Field Services Pricing and Procedures Committee (FSPPC)
- Field Services Policies and Procedures Review Committee (FSPPRC) (if reviewed by Field Service Management Committee (FSMC) for high impact or precedent setting proposals)

If the Corporate Product Phase Down Plan states that product responsibility transfers to Field Service, obtain approval from the other Field Service groups that Field Service is ready to accept designated responsibility.

7.4.7.3 Phase 5 Memory Joggers

Have you worked with Geographies to sponsor the FSPPC retirement proposal?

Have the geographical areas executed account-specific End-of-Life programs through the Product Team?

Have you investigated the centralization of field support resources?

Has a Sales Migration Plan been implemented?

Should standard service terms and commitments be revised?

Has self-maintenance support ended?

Has the software product been considered for transfer to the DECUS Public Domain Library? (binaries or sources)

7.5 REQUIRED CUSTOMER SERVICES DOCUMENTS

The overviews and outlines contained in this section serve as guidelines for creation of the plans and documents used by the Customer Services Manager in support of the Phase Review Process. The outlines present the minimum requirements for Customer Services plans and documents for Phase Exit approval.

The content, style, and scope of the plans and documents described herein may vary for hardware and software products, and across Customer Services Groups.

This section describes the following plans:

- **Services Impact and Requirements Document**
- **Customer Services Plan**
 - **Software Customer Services Plan**
 - **Hardware Customer Services Product Plan**
- **Customer Services Phase Down Plan**
 - **Customer Services Hardware Product Phase Down Plan – High Impact Products**
 - **Customer Services Hardware Product Phase Down Plan – Low Impact Products**
 - **Customer Services Software Product Phase Down Plan – All Products**

NOTE

Online versions of these outlines are available as a VAX DOCUMENT .SDML file and an ASCII file from Standards and Methods Control. Use the following file specification to obtain outlines of the required Customer Services Plans.

```
JOKUR::PHASE_REVIEW:SERVICES.SDML  
JOKUR::PHASE_REVIEW:SERVICES.TXT
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Contact JOKUR::SMC regarding problems copying these files.

7.5.1 Services Impact and Requirements Document (Phase 0)

OVERVIEW

Purpose:

- Assess the product impact on Customer Services' business goals.
- Provide timely, reliable technical information on product service needs to help make decisions on product development and set product goals.
- Increase customer satisfaction with Digital products and services.
- Improve the serviceability of Digital products.

Audience:

- Product Team Members
- Customer Services Team

Who is Responsible:

The designated Customer Services Manager.

SERVICES IMPACT AND REQUIREMENTS DOCUMENT OVERVIEW (continued)

When Required:

- The approved Services Impact and Requirements Document is required to exit Phase 0, and is annotated at the end of Phase 1 to reflect actual Engineering commitments.

Relationship To Other Plans:

- Service Plan

The product requirements agreed to and incorporated in the Services Impact and Requirements Document are part of the Service Plan.

- Functional Specification

Product requirements are input to the Functional Specification.

Where Recorded:

- Customer Services Systems Engineering (CSSE) New Product Planning

SERVICES IMPACT AND REQUIREMENTS DOCUMENT OUTLINE

1.0 EXECUTIVE SUMMARY

1.1 SUMMARY OF SERVICE IMPACT AND REQUIREMENTS

1.2 SUMMARY OF PRODUCT METRICS

1.3 SUMMARY OF RISKS AND CONCERNS

2.0 PRODUCT SUMMARY

3.0 IMPACT ON SERVICES

4.0 SERVICE STRATEGY

5.0 SERVICE BUSINESS GOALS

6.0 SERVICEABILITY REQUIREMENTS

6.1 INSTALLATION

6.2 REMEDIAL SUPPORT AND/OR REPAIR

6.3 TRAINING

6.4 MATERIAL REPAIR

SERVICES IMPACT AND REQUIREMENTS DOCUMENT OUTLINE (continued)

7.0 SERVICEABILITY GOALS

7.1 DOCUMENTATION

- 7.1.1 Product
- 7.1.2 Sources
- 7.1.3 Customer Communication
- 7.1.4 Service Communications

7.2 FUNCTION TESTS

- 7.2.1 Demonstration Programs
- 7.2.2 Installation Certification Procedure
- 7.2.3 Benchmarks

7.3 OTHER SPECIFICATIONS

8.0 RAMP AND METRIC REQUIREMENTS

8.1 INSTALLATION

8.2 CALLS

- 8.2.1 On-Site
- 8.2.2 Remote

Simple
Complex

8.3 WARRANTY

8.4 TRAINING

9.0 RISKS AND CONCERNS

7.5.2 CUSTOMER SERVICES PLAN (PHASES 1 THROUGH 3) HARDWARE or SOFTWARE

NOTE

Use the overview below with the hardware or software outline shown on succeeding pages, depending on the product.

OVERVIEW

Purpose:

The purpose of the Customer Services Plan (hardware or software) is to document the Customer Services delivery commitments. The plan is the outcome of the Customer Services Product Planning Process. This process is the communications vehicle used by the various Customer Services groups responsible for ensuring congruency between Customer Services delivery strategies and PBU product strategies.

Audience:

- Customer Services Geography Planning and support groups
- Manufacturing Planning
- Product Management
- Marketing
- Sales

CUSTOMER SERVICES PLAN (PHASES 1 THROUGH 3) HARDWARE OR SOFTWARE (continued)

Who is Responsible:

The Customer Services representative on the Product Team, with inputs from representatives from the organizations listed below, depending on product type:

- CSSE
- Educational Services
- Field Service Logistics
- Software Services
- Geography Planning Groups (U.S., Europe, GIA)

When Required:

The Service Plan is prepared at the beginning of Phase 1 and completed at close of Phase 3.

Relationship To Other Activities:

The Customer Services Plan is the Customer Services input to the Corporate Phase Review Process.

Where Recorded:

Customer Services Systems Engineering (CSSE) New Product Planning

SOFTWARE CUSTOMER SERVICES PLAN OUTLINE

1.0 EXECUTIVE SUMMARY

PLAN SUMMARY – Brief description of product, marketing, and service strategy .

BUSINESS IMPACT STATEMENT – Relationship to, and position in, the family business strategy.

KEY AND CRITICAL ITEMS – Key risks, concerns, option issues.

2.0 PRODUCT RECORD

Record of information containing key fields, such as:

- Product phase
- PAC category
- Service impact category
- Corporate backup group
- Field Test, Announcement, FRS dates

2.1 SERVICE DELIVERY PLANNING INFORMATION

Record containing information necessary to deliver services, such as:

- Product relationships to other products
- Hardware and/or software prerequisites
- Volume numbers
- Support tools available or planned
- Skill set required to provide support

2.2 BUSINESS CHECKLIST

Record containing information on service business planning, such as:

- Service revenue anticipated over two years
- Services planned
- Standard vs. non-standard services

SOFTWARE CUSTOMER SERVICES PLAN OUTLINE (continued)

2.3 PRODUCT SERVICE BUSINESS INFORMATION

Record containing information on intended services, such as:

- Impact on Software Product Services (SPS)
- Service offerings
- Customer base
- Problems per registered customers

2.4 GEOGRAPHY (U.S., EUROPE, GIA) SERVICE DELIVERY CALL FLOW MATRIX

Records containing information on how the three Geographies intend to support the product, including primary and secondary support for remedial and installation activity.

HARDWARE CUSTOMER SERVICES PRODUCT PLAN OUTLINE

1.0 DIAGRAM

Sections 1.0 through 2.0 are the responsibility of Field Service Product Management.

Picture of actual product.

1.1 EXECUTIVE SUMMARY

1.1.1 Plan Summary

Brief description of product, marketing, and service strategy.

1.1.2 Business Impact Statement

1.1.3 Key and critical Items

1.2 SERVICE BUSINESS PLAN AND ANALYSIS

Consists of business goals and objectives, strategies to meet goals, Field Service pricing form, 5-year profit/loss statement, with break-even quarter, and the process used to measure goals.

1.3 FINANCIAL ANALYSIS

Consists of Life Cycle Business Management (LCBM) market Basic Monthly Charge (BMC) runs, LCBM sensitivity runs, CSSE cost-driven LCBM runs, and technical risks.

2.0 MARKETING PLAN AND ANALYSIS

Consists of 5-year projected product sales; service products offered; any special requirements, terms or conditions; identified hardware delivery channels; and identified markets in which Digital is competing.

Also lists promotional schemes and defines major accounts, if available.

HARDWARE CUSTOMER SERVICES PRODUCT PLAN OUTLINE (continued)

3.0 SERVICE OPERATIONS PLAN

Responsibility of CSSE.

Include a product description and block diagram, and describe architecture, as applicable. Describe physical characteristics, service features, and configuration diagram.

3.1 PRIMARY SERVICE PLAN

Initial service delivery, product repair strategy, remote diagnosis features available, maintenance goals, such as MTBF and MTTR, preventive maintenance, environmental and power requirements, physical layout, installation and acceptance procedures, service engineer profile and skill set, tools and test equipment requirements, documentation, diagnostics, software, and data collection methodology.

3.2 SUPPORT SERVICE PLAN

Support strategy, revision control/compatibility, tools and skills required, test equipment and service aids, support level documentation.

3.3 LOGISTICS PLAN

Strategy, RSL/ARL repair source identification, kit information, field ordering information, kit/option ratio, kit availability, FRU repair sources and cost, loose piece ordering information, option swap, capital equipment, test equipment, tools, look-alike strategy, material feedback plan, warranty plan, and logistics flow.

3.4 SERVICE TRAINING PLAN

Responsibility of the Training Project Manager.

Focuses on service delivery methods, strategy, population, prerequisites, student volumes, first level and support level training, documentation, and implementation.

HARDWARE CUSTOMER SERVICES PRODUCT PLAN OUTLINE (continued)

3.5 CUSTOMER TRAINING

Responsibility of the Training Project Manager.

3.6 CONTINUATION ENGINEERING

Responsibility of CSSE.

Includes FCO strategy.

4.0 SERVICE DELIVERY

Responsibility of Field Service Product Management.

Include service delivery method, problem management system, pre-contract inspection, option level swap strategy, escalation procedures, and revision management.

5.0 OPERATIONS AND ADMINISTRATION

Responsibility of Field Service Product Management

Include business reporting and measurements, call administration and labor reporting, warranty administration, warranty terms and conditions, contract administration, revenue tracking, and billing requirements.

6.0 MISCELLANEOUS ATTACHMENTS

Responsibility of Field Service Product Management

Include pre-contract inspection form, key contacts for field, references, and environmental specifications.

7.5.3 Customer Services Product Phase Down Plans (Phase 4B)

OVERVIEW

NOTE

The following overview applies to the three plans outlined in this section:

- Customer Services Hardware Product Phase Down Plan – High-Impact Products
- Customer Services Hardware Product Phase Down Plan – Low-Impact Products
- Customer Services Software Product Phase Down Plan – All Products

Purpose:

The purpose of a Product Phase Down Plan is to document the Customer Services Phase Down commitment for the product to be retired from sales, and to plan for ongoing support. The Customer Services Product Planning Process is the communications vehicle used by the various Customer Services groups responsible for ensuring congruency between Customer Services delivery strategies and PBU product strategies.

All Customer Service Product Phase Down Plans include:

- Executive Summary
- Service Offerings
- Geographical Impact
- Business Strategy
- Product Support Planning

CUSTOMER SERVICES PRODUCT PHASE DOWN PLANS OVERVIEW (continued)

Audience:

- Customer Services Geography Planning and support groups
- Manufacturing Planning
- Product Management
- Marketing
- Sales

Who is Responsible:

The Customer Services representative on the Product Team, with inputs from representatives from the organizations listed below, depending on product type:

- CSSE
- Educational Services
- Field Service Logistics
- Software Services
- Geography Planning Groups (U.S., Europe, GIA)

When Required:

The Product Phase Down Plan must be completed by Phase 4B Exit.

**CUSTOMER SERVICES PRODUCT PHASE DOWN PLANS OVERVIEW
(continued)**

Relationship To Other Activities:

This plan is the Customer Services' input to the Corporate Phase Review Process.

Where Recorded:

Customer Services Systems Engineering (CSSE) New Product Planning

CUSTOMER SERVICES HARDWARE PRODUCT PHASE DOWN PLAN – HIGH IMPACT PRODUCTS OUTLINE

COVERSHEET

Include name, date, organization, and revision. Label **Digital Internal Use Only** at the bottom as shown in the following example:

CUSTOMER SERVICES

Product Phase Down Cover Sheet

Name:

Date:

Organization:

Revision:

FOR DIGITAL INTERNAL USE ONLY

CUSTOMER SERVICES HARDWARE PRODUCT PHASE DOWN PLAN – HIGH IMPACT PRODUCTS OUTLINE

FOREWORD

Purpose of document.

1.0 EXECUTIVE SUMMARY

Limited to one page. Includes: problem statement, highlights, background information, conclusion, and recommendations.

2.0 OVERVIEW

- Brief description of product, including models.
- Responsibilities of Team members (Customer Services Team)
- Phase down schedule
- Migration strategy

CUSTOMER SERVICES HARDWARE PRODUCT PHASE DOWN PLAN – HIGH IMPACT PRODUCTS OUTLINE (continued)

3.0 FIELD SERVICE PRODUCT PHASE OUT OBJECTIVES

Field Service standard service offerings with emphasis on changes required to support the PBU business strategy.

- Material (spares) objective
- Customer satisfaction
- Financial 5–year forecast
 - Contract volume
 - Service NOR
 - MSE
 - Contribution margin %
 - Geographical distribution

4.0 BUSINESS STRATEGY (Hardware or Software Product Strategy)

Product migration strategy (from PBU Product Manager). If SPS/SSC or FSPPC proposals will be made to obtain approval for the product's phase down strategy, show key highlights.

- FSPPC proposal highlights
- Key accounts (from PBU and FS Product Manager)
- Service offering (by area business support groups)
- Current
- Proposed
- Geographical impact
- Contingency plans

CUSTOMER SERVICES HARDWARE PRODUCT PHASE DOWN PLAN – HIGH IMPACT PRODUCTS OUTLINE (continued)

5.0 PRODUCT SUPPORT PLANNING (HARDWARE AND SOFTWARE)

5.1 LOGISTICS PLAN

5.2 TRAINING PLAN

- Customer
- Internal

5.3 DOCUMENTATION PLAN

5.4 PRODUCT MGMT PLAN (PBU AND FS)

5.5 REMEDIAL PLAN FOR FUTURE

- Software Problem Report (SPR)
- Software telephone support
- Software technical back up
- Hardware design problems
- Problem Resolution and Information Systems Management (PRISM)
- Common Log Desk (CLDs)
- Diagnostics
- Field Change Order/Engineering Change Order (FCO/ECO)

CUSTOMER SERVICES HARDWARE PRODUCT PHASE DOWN PLAN – HIGH IMPACT PRODUCTS OUTLINE (continued)

6.0 CONCLUSION/RECOMMENDATIONS

6.1 CONCLUSION

- **Business opportunities/directions (customer impact)**
- **Risk and dependencies**
- **Commitment to review service offerings**

6.2 RECOMMENDATION

- **Service offerings**
- **Alternative solution(s)**
- **Schedules for phase down of standard service offerings**

7.0 COMMUNICATIONS STRATEGY

- **Field Implementation Plan (FIP)**
- **Planning Automated Support System (PASS)**
- **SALES UPDATE**
- **DEC STUFF**
- **Other**

8.0 REFERENCES

Other plans for further information:

**Manufacturing Phase Down Plan
Marketing Migration Plan
Sales Phase Down Plan
Corporate Phase Down Plan**

CUSTOMER SERVICES HARDWARE PRODUCT PHASE DOWN PLAN – LOW IMPACT PRODUCTS OUTLINE

1.0 PRODUCT-SPECIFIC INFORMATION

- 1.1 PRODUCT DESCRIPTION
- 1.2 PBU PRODUCT MANAGEMENT (Long-Term Plan)
- 1.3 MIGRATION STRATEGY
- 1.4 PRODUCT PHASE DOWN SCHEDULE

2.0 SERVICE-SPECIFIC INFORMATION

- 2.1 FIELD SERVICE PRODUCT PHASE DOWN PHILOSOPHY
- 2.2 CUSTOMER SERVICE TEAM MEMBERS
- 2.3 LOGISTICS PLAN
 - Service Life Cycle Forecast
 - Self-Maintenance Support
- 2.4 TRAINING PLAN
- 2.5 DOCUMENTATION PLAN
- 2.6 PRICING PLAN
 - Common Log Desk/Problem Resolution and Information Systems Management (CLD/PRISM)
 - ECO/FCO
 - Design Problems (Long-Term Engineering Support Plan)
 - Diagnostics
 - Contingency Plans/Risks
- 2.7 COMMUNICATIONS PLAN

3.0 CONCLUSIONS/RECOMMENDATIONS

CUSTOMER SERVICES SOFTWARE PRODUCT PHASE DOWN PLAN – ALL SOFTWARE PRODUCTS OUTLINE

FOREWORD—PURPOSE OF DOCUMENT

Statements about Field Service retirement philosophy, the audience of the document, and why Customer Services input is important to the decision making process. (1–2 paragraphs)

1.0 OVERVIEW

- 1.1 PRODUCT DESCRIPTION
- 1.2 RETIREMENT DECISION BASIS
- 1.3 OTHER PRODUCT DEPENDENCIES
- 1.4 MIGRATION STRATEGY
- 1.5 PHASE DOWN SCHEDULE

Note: The above information is found in documents produced by the PBU Product Manager. Topics are listed here to put the plan in context.

2.0 FIELD SERVICE PRODUCT PHASE DOWN INPUTS

- 2.1 CURRENT SERVICE OFFERINGS BY GEOGRAPHY
- 2.2 CURRENT CONTRACT VOLUMES BY GEOGRAPHY
- 2.3 SERVICE NET OPERATING REVENUE (NOR) OR OTHER AVAILABLE APPROPRIATE FINANCIALS
- 2.4 SSC OR FSPPC APPROVALS REQUIRED, SCHEDULED DATES, PROPOSAL HIGHLIGHTS (if applicable)
- 2.5 KEY SPS ACCOUNTS, GOVERNMENT OBLIGATIONS
- 2.6 IMPACT OF OTHER PRODUCT DEPENDENCIES ON SERVICES
- 2.7 SUMMARY OF IMPACT STATEMENTS FROM THE GEOGRAPHIES (if available)

This information is the Service Product Manager's portion of the Phase Down Plan and is the Field Service input to the decision-making process.

CUSTOMER SERVICES SOFTWARE PRODUCT PHASE DOWN PLAN - ALL PRODUCTS OUTLINE (continued)

3.0 PRODUCT SUPPORT PLANNING

3.1 REMEDIAL SUPPORT OBLIGATIONS

- Outstanding SPRs
- Outstanding CLDs/PRISMs
- Estimated End of Service Date

3.2 ANY CHANGES RECOMMENDED IN CURRENT SUPPORT STRATEGY

3.3 SERVICE CONTRACT MIGRATION STRATEGY IF APPLICABLE

3.4 TRAINING INFORMATION TO BE ARCHIVED

3.5 PASS RETIREMENT DOCUMENT NUMBER

3.6 CUSTOMER SERVICES TEAM MEMBERS

This is the Maintainability Engineer/Planner side of the information. It is a reminder to the PBU of the obligations that they are required to fulfill before support can end, as well as a summary of the information that CSSE is sending to the Field.

4.0 CONCLUSIONS/RECOMMENDATIONS

4.1 ISSUES/RISKS/DEPENDENCIES/OPPORTUNITIES/OTHER

4.2 CSSE IMPACT ASSESSMENT AND RECOMMENDATION FOR OR AGAINST RETIREMENT

Appendix A

DIGITAL STANDARDS REQUIREMENTS BY PHASE

DIGITAL STANDARDS REQUIREMENTS BY PHASE

This table indicates at which phase of the Phase Review Process compliance with individual Digital Standards is required. Digital Standards are mandatory because of legal requirements, Corporate responsibilities, and liabilities. Some standards are unique to the design of subassemblies, backplanes, modules and compliance is expected. The following keys identify basic information which must be documented for any Digital Standard as Phase Exit requirements.

KEY	DESCRIPTION OF DEC STANDARD EXIT REQUIREMENTS
1	Confirm that the Digital Standard is applicable as a requirement for the product, or Provide evidence to justify that it is not applicable.
2	Confirm that all the requirements of the Digital Standard are to be incorporated in the product, or Provide evidence to justify designing the product to a lesser capability.
3	Confirm (show schedule or plan) that completion of the requirements of the Digital Standard are scheduled.
4	Confirm (provide evidence, such as test reports and agency approvals) that all requirements of the Digital Standard have been met, or Provide evidence (formal waiver per DEC STD 066-2) that formal waivers are complete for any non-compliance which are not to be resolved.

Table A-1: TECHNICAL DOMAINS AND COUNTRY REQUIREMENTS

DEC STD	PHASE 0	PHASE 1	PHASE 2	PHASE 3	PHASE 4
002-0	1,2	3	4		
002-1	1,2	3	4		
012-0		1			
012-1		1			
012-2		1			
025-0			1		
047-0		2			
047-1		2			
052-0	1	2		4	
052-1	1	2		4	
052-2	1	2		4	
052-3	1	2		4	
052-4	1	2		4	
053-0	1	2		4	
053-1	1	2		4	
060-0	1,2				
062-0	1,2				
064-0	1,2	3	4		
066-0	1,2	3	4		
066-3	1,2	3	4		
068-0			1		
071-0		1			
080-0	1,2	3			
080-1	1,2	3	4		
080-2			4		
100-0				1	
102-0	1	2	3	4	
102-1	1	2	3	4	
102-2	1	2	3	4	

Table A-1 (Cont.): TECHNICAL DOMAINS AND COUNTRY REQUIREMENTS

DEC STD	PHASE 0	PHASE 1	PHASE 2	PHASE 3	PHASE 4
102-3	1	2	3	4	
102-4	1,2	3		4	
103-0	1,2	3		4	
104-0	1,2	3		4	
105-0	1,2	3	4		
119-0	1,2	3			
119-1	2	3		4	
119-2			4		
119-5	1				
122-0	1,2	3		4	
123-0	1,2	3		4	
136-0	1	2	3	4	
136-3	1	2	3	4	
178-1		1,2	3	4	
178-2		1,2	3	4	
178-3		1,2	3	4	
178-4		1,2	3	4	
178-5		1,2	3	4	
178-6		1,2	3	4	
178-7		1,2	3	4	
178-8		1,2	3	4	
178-9		1,2	3	4	

Table A-2: TERMINALS REQUIREMENTS

DEC STD	PHASE 0	PHASE 1	PHASE 2	PHASE 3	PHASE 4
070-0	1,2	3	4		
107-0	1				
107-1	1,2	3	4		
107-2	1,2	3	4		
180-0	1,2	3	4		

Table A-3: HARDWARE ARCHITECTURE REQUIREMENTS

DEC STD	PHASE 0	PHASE 1	PHASE 2	PHASE 3	PHASE 4
032-0		1	2,3	4	4
057-0	1,2		3	4	

Table A-4: CROSS-ARCHITECTURAL REQUIREMENTS

DEC STD	PHASE 0	PHASE 1	PHASE 2	PHASE 3	PHASE 4
049-0	1,2	3	4		
138-0	1,2	3	4		
164-0	1,2	3	4		
169-0	1,2	3	4		
169-1	1,2	3	4		

Table A-5: DIGITAL NETWORK ARCHITECTURE

DEC STD	PHASE 0	PHASE 1	PHASE 2	PHASE 3	PHASE 4
134-0	1	2,3			4
161-0	1	2,3		4	
200-0	1	2,3		4	
200-1	1	2,3		4	
200-2	1	2,3		4	
200-3	1	2,3		4	
200-4	1	2,3		4	
200-5	1	2,3		4	
200-7	1	2,3		4	
200-10	1	2,3		4	
200-11	1	2,3		4	

Table A-6: PROCESS AND DESIGN TECHNOLOGY

DEC STD	PHASE 0	PHASE 1	PHASE 2	PHASE 3	PHASE 4
020-0		1,2			
022-0		1,2			
022-1		1,2			
030-0		1,2	4		2
030-1		1,2	4		2
030-2		1,2	4		2
030-3		1,2	4		2
030-4		1,2	4		2
030-5		1,2	4		2
030-6		1,2	4		2
030-7		1,2	4		2
030-8		1,2	4		2
030-9		1,2	4		2
030-10		1,2	4		2
043-0		2,3	4		

Table A-6 (Cont.): PROCESS AND DESIGN TECHNOLOGY

DEC STD	PHASE 0	PHASE 1	PHASE 2	PHASE 3	PHASE 4
043-1		2,3	4		
044-0		1	2	3,4	4
045-0		2	3		
045-1		2	3		
048-0		1,2	3	4	
055-0		1	2	3,4	4
056-0	1	2	3	4	
056-3	1	2	3	4	
056-5	1	2	3	4	
072-0			1		
076-0		1,2	3	4	
092-0		1,2			
092-1		1,2			
092-2		1,2			
092-3		1,2			
092-4		1,2			
092-5		1,2			
092-6		1,2			
092-7		1,2			
120-0		1,2	3	4	
131-0		1,2			3,4
136-1		1	2	3	
156-0	1	2	3	4	
179-0		1,2			
186-0		1,2	3	4	
187-0					4

Table A-7: PRODUCT PERFORMANCE TESTING

DEC STD	PHASE 0	PHASE 1	PHASE 2	PHASE 3	PHASE 4
038-0	1	2,3	4	4	
038-1	1	2,3	4	4	
038-2	1	2,3	4	4	
139-0		1,2	3,4		

Table A-8: MAINTENANCE AND INSTALLATION REQUIREMENTS

DEC STD	PHASE 0	PHASE 1	PHASE 2	PHASE 3	PHASE 4
009-1		1	3	4	
009-2	2,3	4			
117-0	1,2				

REFERENCED AND RELATED DOCUMENTS

EL-CLASS DIGITAL DOCUMENTS

EL-Class Number	Document Title
EL-00002-00	<i>DEC STD 002-0 AC Power Wiring, Safety Earth Grounding, Plugs and Receptacle Information and Requirements</i>
EL-00002-01	<i>DEC STD 002-1 Power Controller Units - General Requirements</i>
EL-00009-01	<i>DEC STD 009-1 Product Engineering Specifications: Electrical, Physical, and Environmental Parameters</i>
EL-00009-02	<i>DEC STD 009-2 Product Engineering Specifications: Requirements for Specifying Reliability Parameters</i>
EL-00012-00	<i>DEC STD 012-0 Part Identification Standard</i>
EL-00012-01	<i>DEC STD 012-1 Unified Numbering Code: Document Identification Conventions</i>
EL-00012-02	<i>DEC STD 012-2 Unified Numbering Code for Part Identifier class codes</i>
EL-00012-04	<i>DEC STD 012-4 Unified Numbering Code - Software Distribution Center Part Numbering Conventions</i>
EL-00020-00	<i>DEC STD 020-0 Cast Metal Parts</i>

EL-Class Number	Document Title
EL-00022-00	<i>DEC STD 022-0 Cable and Harness Documentation: Part Identification Requirements</i>
EL-00022-01	<i>DEC STD 022-1 Cable and Harness Documentation: Drawing Requirements</i>
EL-00025-00	<i>DEC STD 025-0 Parts Lists</i>
EL-00028-00	<i>DEC STD 028-0 Phase Review Policy</i>
EL-00030-00	<i>DEC STD 030-0 Module Manufacturing Standard - Introduction And General Information</i>
EL-00030-01	<i>DEC STD 030-1 Module Manufacturing Standard - General Producibility Requirements</i>
EL-00030-02	<i>DEC STD 030-2 Module Manufacturing Standard - Product Safety Requirements</i>
EL-00030-03	<i>DEC STD 030-3 Module Manufacturing Standard - Component Selection Rules</i>
EL-00030-04	<i>DEC STD 030-4 Module Manufacturing Standard - Printed-Wiring Board Design Requirements</i>
EL-00030-05	<i>DEC STD 030-5 Module Manufacturing Standard - Module Assembly And Component Insertion Rules</i>
EL-00030-06	<i>DEC STD 030-6 Module Manufacturing Standard - Bare Board and Module Testability Rules</i>
EL-00030-07	<i>DEC STD 030-7 Module Manufacturing Standard - Backplane Rules and Related Factors</i>
EL-00030-08	<i>DEC STD 030-8 Module Manufacturing Standard - Rules for Power Supplies and Nonplug-In Modules</i>
EL-00030-09	<i>DEC STD 030-9 Module Manufacturing Standard - Surface Mount Technology Design Rules</i>
EL-00030-10	<i>DEC STD 030-10 Module Manufacturing Standard - Footprint Patterns for Surface Mount Technology</i>
EL-00032-00	<i>DEC STD 032-0 VAX Architecture Standard</i>
EL-00038-00	<i>DEC STD 038-0 System Evaluation of New Products - General</i>
EL-00038-01	<i>DEC STD 038-1 Systems Evaluation of New Products - Software</i>
EL-00038-02	<i>DEC STD 038-2 Systems Evaluation of New Products - Hardware</i>

EL-Class Number	Document Title
EL-00043-00	<i>DEC STD 043-0 Packaging Requirements for Digital Products, Parts, Assemblies, and Materials</i>
EL-00043-01	<i>DEC STD 043-1 Packaging Requirements - Sheets, Blanks, or Coils of Steel or Aluminum</i>
EL-00044-00	<i>DEC STD 044-0 Packing Documentation Requirements</i>
EL-00045-00	<i>DEC STD 045-0 Packaging Products for International Shipment - Introduction</i>
EL-00045-01	<i>DEC STD 045-1 Standard for Packaging Products for International Shipment - Design Requirements and Procedures</i>
EL-00047-00	<i>DEC STD 047-0 Bar Code Symbology Criteria</i>
EL-00047-01	<i>DEC STD 047-1 Physical Requirements for Bar Coding</i>
EL-00048-00	<i>DEC STD 048-0 Metallic Raw Material Selection and Identification</i>
EL-00049-00	<i>DEC STD 049-0 Document Transmission (DX) Protocol</i>
EL-00052-00	<i>DEC STD 052-0 Operational Requirements for Serial Terminals And Computer Interfaces Operating as DTEs Connected to EIA RS-232-C Or CCITT V.28 Modems</i>
EL-00052-01	<i>DEC STD 052-1 Operational Requirements for Serial Terminals And Serial System Interfaces Operating as DTEs Connected to EIA RS-232-C Or CCITT V.</i>
EL-00052-02	<i>DEC STD 052-2 Electrical Requirements for Binary Interfaces That Conform to EIA RS-232-C Or CCITT V.28 Modems</i>
EL-00052-03	<i>DEC STD 052-3 Automatic Calling and/or Answering Equipment On The GSTN Using The 100 Series Interchange Circuits</i>
EL-00052-04	<i>DEC STD 052-4 Local Direct Connection (No Modem) for Serial Asynchronous Terminals and System Interfaces</i>
EL-00053-00	<i>DEC STD 053-0 Interface Between Data Circuit-Termination Equipment and Public Switched Telephone Network (PSTN) In The U.S. and Canada</i>
EL-00055-00	<i>DEC STD 055-0 Requirements for Purchase Specifications</i>
EL-00056-00	<i>DEC STD 056-0 Symbology - Circuit Schematic Requirements</i>

EL-Class Number	Document Title
EL-00056-03	<i>DEC STD 056-3 Symbology – Discrete Electronic And Electromechanical Component Symbols</i>
EL-00056-05	<i>DEC STD 056-5 Industry Standard Logic Symbols and Diagrams</i>
EL-00057-00	<i>DEC STD 057-0 VAXBI Standard</i>
EL-00060-00	<i>DEC STD 060-0 Design of Hardware Products to National And International Regulations and Standards, Policies and Responsibilities</i>
EL-00062-00	<i>DEC STD 062-0 Product Submittal to Regulatory Agencies</i>
EL-00064-00	<i>DEC STD 064-0 Compliance With International Language Requirements</i>
EL-00066-00	<i>DEC STD 066-0 Digital Design Standards</i>
EL-00066-01	<i>DEC STD 066-1 Technical Domains In The Product Development Process</i>
EL-00066-02	<i>DEC STD 066-2 Waivers to Digital Design Standards</i>
EL-00066-03	<i>DEC STD 066-3 Policy for Designing Products for All Countries Designated as Strategic Markets</i>
EL-00068-00	<i>DEC STD 068-0 Policy for Documentation of Revision Levels Of Units and Combinations of Units</i>
EL-00070-00	<i>DEC STD 070-0 Video Systems Reference Manual</i>
EL-00071-00	<i>DEC STD 071-0 Field Change Order Policy – Introduction</i>
EL-00072-00	<i>DEC STD 072-0 POM (Point of Manufacture) Review Criteria</i>
EL-00073-00	<i>DEC STD 073-0 Manufacturing and Packaging for Publications</i>
EL-00076-00	<i>DEC STD 076-0 Plastics Selection and Identification</i>
EL-00080-00	<i>DEC STD 080-0 Digital Product Safety Industrial Control Equipment-Introduction and General Requirements</i>
EL-00080-01	<i>DEC STD 080-1 Digital Product Safety Industrial Control Equipment – Design Criteria</i>
EL-00080-02	<i>DEC STD 080-2 Digital Product Safety Industrial Control Equipment – Test Methods</i>
EL-00092-00	<i>DEC STD 092-0 Finish and Color Standard – Introduction and General Requirements</i>

EL-Class Number	Document Title
EL-00092-01	<i>DEC STD 092-1 Finish and Color Standard – Finish Standard for Applications</i>
EL-00092-02	<i>DEC STD 092-2 Finish and Color Standard – Finish Material Standard for Suppliers</i>
EL-00092-03	<i>DEC STD 092-3 Finish and Color Standard – Finish Material Test Requirements</i>
EL-00092-04	<i>DEC STD 092-4 Finish and Color Standard – Approved Finish Specifications</i>
EL-00092-05	<i>DEC STD 092-5 Finish and Color Standard – Digital Color List</i>
EL-00092-06	<i>DEC STD 092-6 Finish and Color Standard – Digital-Approved Paint Suppliers and Material Identification</i>
EL-00092-07	<i>DEC STD 092-7 Finish and Color Standard– Plastic Color Control and Material Identification</i>
EL-00100-00	<i>DEC STD 100-0 Introduction to Engineering Change Orders</i>
EL-00100-1C	<i>DEC STD 100-1C Engineering Change Orders – Financing ECOs to Hardware</i>
EL-00102-00	<i>DEC STD 102-0 Environmental Standard for Computers and Peripherals – General Test Requirements</i>
EL-00102-01	<i>DEC STD 102-1 Environmental Standard for Computers and Peripherals – Temperature, Humidity, and Altitude Test Requirements</i>
EL-00102-02	<i>DEC STD 102-2 Environmental Standard for Computers and Peripherals – Mechanical Shock and Vibration Test Requirements</i>
EL-00102-03	<i>DEC STD 102-3 Physical Stability Requirements During Shipping and Handling</i>
EL-00102-04	<i>DEC STD 102-4 Environmental Standard for Computers and Peripherals – Product Acoustic Noise Measurement</i>
EL-00103-00	<i>DEC STD 103-0 Electromagnetic Compatibility (EMC) Hardware Design Requirements</i>
EL-00104-00	<i>DEC STD 104-0 Product Acoustic Noise Acceptability</i>
EL-00105-00	<i>DEC STD 105-0 Display Work Station Ergonomics (Human Factors): Design Criteria</i>
EL-00107-00	<i>DEC STD 107-0 Digital Standard for Terminal Keyboards Standard Keyboard Layouts</i>

EL-Class Number	Document Title
EL-00107-01	<i>DEC STD 107-1 Digital Standard for Terminal Keyboards – Registry of Graphic Character Sets</i>
EL-00107-02	<i>DEC STD 107-2 Digital Standard for Terminal Keyboards – LK201 Character Sets</i>
EL-00117-00	<i>DEC STD 117 Print Sets</i>
EL-00119-00	<i>DEC STD 119-0 Digital Product Safety – Introduction and General Requirements</i>
EL-00119-01	<i>DEC STD 119-1 Digital Product Safety – Design Criteria</i>
EL-00119-02	<i>DEC STD 119-2 Digital Product Safety – Test Procedures</i>
EL-00119-05	<i>DEC STD 119-5 Process for Design, Evaluation, Testing, and Certification of Hardware Products to Product Safety Requirements</i>
EL-00120-00	<i>DEC STD 120-0 Cooling Standard</i>
EL-00122-00	<i>DEC STD 122-0 AC Power Line Standard: Design Requirements and Guidelines</i>
EL-00123-00	<i>DEC STD 123-0 Power Control Bus Standard</i>
EL-00130-00	<i>DEC STD 130-0 Product/System Business Plans: Content Requirements And Format Guidelines</i>
EL-00131-00	<i>DEC STD 131-0 Traceability Policy</i>
EL-00134-00	<i>DEC STD 134-0 Digital CSMA/CD (Ethernet) Local Area Network Specification</i>
EL-00136-00	<i>DEC STD 136-0 Digital Policy On Government-Regulated Materials in Digital Products</i>
EL-00136-01	<i>DEC STD 136-1 Digital Policy on Government-Regulated Materials In Digital's Manufacturing Processes</i>
EL-00136-03	<i>DEC STD 136-3 The Introduction and Review Process For Digital Chemical Products</i>
EL-00138-00	<i>DEC STD 138-0 Registry of Control Functions for Character Imaging Devices</i>
EL-00139-00	<i>DEC STD 139-0 Reliability Prediction</i>
EL-00156-00	<i>DEC STD 156-0 Introduction of New Purchased Parts and Maintenance of Purchased Parts Information: Standard Procedures</i>
EL-00161-00	<i>DEC STD 161-0 Computer Interconnect Specification</i>

EL-Class Number	Document Title
EL-00164-00	<i>DEC STD 164-0 Software Use of the Graphic Character Set of ASCII</i>
EL-00169-00	<i>DEC STD 169-0 DEC Standard Coded Graphic Character Sets for Hardware and Software</i>
EL-00169-01	<i>DEC STD 169-1 DEC Standard Coded Graphic Character Sets for Hardware and Software: Introduction</i>
EL-00178-00	<i>DEC STD 178-0 Digital Identification Marking Requirements - Introduction</i>
EL-00178-01	<i>DEC STD 178-1 Digital Marking Requirements For Piece Parts</i>
EL-00178-02	<i>DEC STD 178-2 Digital Marking Requirements For Subassemblies: Field Replaceable Units (FRU) and Non-Field Replaceable Units</i>
EL-00178-03	<i>DEC STD 178-3 Digital Marking Requirements for Completed Products Intended to be Sold</i>
EL-00178-04	<i>DEC STD 178-4 Container Marking Equirements for Finished Goods</i>
EL-00178-05	<i>DEC STD 178-5 Marking Symbology</i>
EL-00178-06	<i>DEC STD 178-6 Marking and Labeling Requirements for Diagnostic Tools and Diagnostic Software</i>
EL-00178-07	<i>DEC STD 178-7 Translations</i>
EL-00178-08	<i>DEC STD 178-8 General Shipping Documentation and Container Labeling Requirements for Finished Goods Intended to Be Shipped To Customers</i>
EL-00178-09	<i>DEC STD 178-9 Shipping Container Marking Requirements For Goods In Process</i>
EL-00179-00	<i>DEC STD 179-0 Requirements for Specifying Raw Materials for Powder-Metal Parts</i>
EL-00180-00	<i>DEC STD 180-0 Standard for Font File Identification</i>
EL-00186-00	<i>DEC STD 186-0 Signal Integrity</i>
EL-00187-00	<i>DEC STD 187-0 Mechanical Fabrication Workmanship Standards</i>
EL-00197-00	<i>DEC STD 197-0 Legal Requirements and Guidelines for Digital Publications and Software</i>
EL-00200-00	<i>DEC STD 200-0 Digital Network Architecture Process Specification</i>

EL-Class Number	Document Title
EL-00200-01	<i>DEC STD 200-1 Digital Network Architecture – Maintenance Operations Functional Specification</i>
EL-00200-02	<i>DEC STD 200-2 Digital Network Architecture – Network Management Functional Specification</i>
EL-00200-03	<i>DEC STD 200-3 Digital Network Architecture – Ethernet Node Product Architecture Specification</i>
EL-00200-04	<i>DEC STD 200-4 Digital Network Architecture – NSP Functional Specification</i>
EL-00200-05	<i>DEC STD 200-5 Digital Network Architecture – Routing Layer Functional Specification</i>
EL-00200-07	<i>DEC STD 200-7 Digital Network Architecture – Session Control Functional Specification</i>
EL-00200-10	<i>DEC STD 200-10 Digital Data Communications Message Protocol (DDCMP)</i>
EL-00200-11	<i>DEC STD 200-11 Digital Network Architecture – Ethernet Data Link Functional Specification</i>
EL-CPPAC-00	<i>Corporate Policies for Product Pricing, Announcement, and First Customer Ship</i>
EL-CP595-00	<i>Corporate Product Introduction Guide</i>
EL-CP596-00	<i>Phase Exit Guidebook – Top 100 Products</i>
EL-MF028-00	<i>Administration Policies and Procedures – Product Phase Down Policy</i>
EL-CP060-01	<i>Design and Certification of Hardware Products to National and International Regulations and Standards – Specific Requirements</i>
EL-MF356-00	<i>Manufacturing Systems Program Manager (MSPM) – Guide</i>
EL-MF356-01	<i>Finance Phase Review Guidelines</i>
EL-MF356-02	<i>Information Systems Phase Review Guidelines</i>
EL-MF356-03	<i>Manufacturing Engineering Phase Review Guidelines</i>
EL-MF356-04	<i>Corporate Materials Architecture New Products Module Material Phase Review Process</i>
EL-MF356-05	<i>Manufacturing Order Administration Phase Review Guidelines</i>
EL-MF356-06	<i>Materials Engineering Domain Phase Review Guidelines</i>
EL-MF356-07	<i>Phase Review Production Guidelines</i>

EL-Class Number	Document Title
EL-SM498-00	<i>Producing International Products</i>
EL-EN522-00	<i>Digital Qualification Process Manual (Currently in Review)</i>
EL-MF540-00	<i>Product Phase Down/End of Life Guidelines</i>

Copies of Digital EL-Class documents may be obtained from Standards and Methods Control, CTS1-2/D4, DTN: 287-3724, JOKUR::SMC.

Please provide your name, mail stop, cost center, badge number, and node address when ordering.

GLOSSARY

8-Quarter Volume Planning Process (8QVP)

A process and document that establishes one source for Corporate volume requirements.

Alternatives and Feasibility Study

A study to determine the benefits and costs, in terms of time, money and manpower, of the development of a proposed product, resulting with a recommendation or proposed alternatives.

Announcement Strategy Committee (ASC)

A subcommittee of the Marketing, Sales, and Strategy Committee (MSSC) that develops and manages integrated introduction plans for strategic products and sponsors them to MSSC for approval. Creates Corporate Announcement Calendar for MSSC approval. Recommends product names to MSSC.

Applications Review Board (ARB)

Committee that evaluates software developers who sell their software applications separately from, but for execution on, Digital systems. The software developers must meet standard criteria on both service and technical issues before they can be approved by the ARB Committee.

Application Software Solutions and Expertise Transfer Service (ASSETS)

A library of software packages used as a foundation to create customer solutions.

Approval

The term "approval" is used primarily in association with documents (plans, requirements statements, and specifications) and indicates that the document has been written, reviewed, and approved by the delegated responsible individual(s).

Assumptions Package

The Assumptions Package includes:

- Market requirements
- First pass product requirements including product description (final product requirements will include functional requirements input)
- Alternatives and Feasibility Study
- Assumptions:
 - Volume projections
 - Announcement and First Revenue Ship (FRS) dates
 - Major goals (such as, time-to-market, cost, availability)

Automatic Distribution System (ADS)

System containing names of individuals, both customer and internal, and the software products or diagnostics for which they wish to receive updates.

Availability

Availability is a fraction showing the time that a unit or system is available for use during the intended usage period divided by the intended usage period. It is sometimes expressed as a percentage. How long a gap in functionality is counted as non-availability and how much of a system needs to be down before non-availability is counted needs to be defined in every circumstance.

Baselevel

A baselevel is the set of all documents and files that comprise a specific version of a product created at a specific time. All files in the baselevel are in their latest "built" and tested states from which it is usually possible to generate a working system.

Baselevel build

A baselevel build is the entire process of creating a new baselevel and performing a baselevel release. This includes building the total product from its source files, performing regression tests, collecting new baselevel test procedures, and releasing the new baselevel.

Baselevel release

The baselevel release is the process of replacing the current baselevel with the new and regression-tested baselevel. The baselevel release will also include submitting the new baselevel to the library for archival storage.

BOM

Acronym for Bill of Materials. The Bill of Materials for a product defines the component parts of the product. It is a complete list of component parts and materials making up one unit of an end item. The standard cost of each component multiplied by the quantity is totaled in order to calculate the cost.

Business Plan

The Business plan is a comprehensive set of business metrics designed to evaluate the potential of a new product, in a format that permits comparison to other products. The Business plan is used to review the product strategy, business viability, and required investments. The business plan is updated during each phase and summarizes phase activities. (See *DEC STD 130 Product/System Business Plans: Content Requirements and Format Guidelines.*)

Change Control

The process by which a change is proposed, evaluated, approved or rejected, scheduled, and tracked.

Common Log Desk (CLD)

Field Service procedure to handle the highest level of customer support problems. Individual is assigned responsibility to remedy the situation.

Complete

Term used in *DEC STD 028 Corporate Phase Review Policy* to indicate that Phase Exit documents have been written, reviewed, distributed and approved by the delegated responsible individuals.

Corporate Export and Trade (CE/T)

Corporate Export and Trade (CE/T), Washington D.C. – CE/T is responsible for determining how U.S. Government regulations impact Digital products and services. CE/T will review the product, determine appropriate government classification under the current export regulations, and advise the Product Manager of the conditions under which the product may be exported. The Product Manager is requested to provide CE/T with a summary product description an overview of the target markets, estimated month of announcement, and initial date feedback is required. CE/T contact focal point is Don Ames. See ELF.

Corporate Process Task Force (CPT)

Among its other responsibilities of developing strategies and architectures to integrate the information of knowledge processes in Engineering, Manufacturing and the Field, the CPT membership serves as a repository of information and consultation on Methods and Tools in these domains. In addition to the expertise of direct members of CPT (all senior process experts), access is available, through CPT, to Computer Aided Design (CAD), (CIM) and Artificial Intelligence (AI) experts.

In addition to advice and consulting, CPT and its subgroups (CAD Forum, Test Track, Computer Intergrated Manufacturing (CIM) Forum) has assembled a Corporate_CAD_Tool_Directory and documented examples of working design methods which can be shared on request.

For further information, contact Eli Glazer or Tony Hutchings. See ELF.

Corporate Product Operations (CPO – Sales)

CPO is responsible for managing major product introductions worldwide, Field Product Strategy and volume planning, product pricing, competitive positioning and messages, Proprietary Information Disclosure to potential customers, post announcement programs, and product business problem resolution.

Country List Price (CLP)

Term replacing Maynard List Price which is the price of a product that Digital customers would pay for a product; Country List Price includes uplift.

Customer Services

Consists of Field Service, Software Services, and Educational Services.

Customer Services Phase Down Plan

The Services plans and commitments to phase down service for the product.

Customer Services Plan

The Services Plan for products that is a Phase 1 through Phase 3 deliverable to the Program Team. It includes the Services plans, activities, and commitments to service the product.

Customer Services Systems Engineering (CSSE)

A Field Service organization primarily responsible for providing:

- Defined levels of service engineering
- Corporate support of all products
- Technical information
- Service Product Management
- Service Product Marketing
- Field introductions

DECUS

Digital Equipment Computer Users Society

Design Specification

Translation of the functional specifications into detailed technical parameters that are used by Development Engineering to define and execute the work necessary to create a product with the required functional characteristics.

Design Verification Testing (DVT)

- Design complete
- Simulation complete, timing has been verified
- Build prototype/software functional code freeze
- All features tested in at least one configuration that is in the customer environment, for example, CPU runs all instructions at speed with a given operating system

DEC STUFF

DEC STUFF is a technical newsletter published monthly by CSSE Publications. It is a means by which CSSE Maintainability Engineering distributes remedial information to field support personnel. Some examples are VAX STUFF, RIGHT STUFF, MICRO STUFF, and VES STUFF (Vendor Equipment Systems).

Digital Business Agreement (DBA)

Contract a customer signs with Digital to purchase a certain amount of Digital's products that makes the customer eligible for discounts on those products.

Documentation

A collection of written descriptions and procedures that provide information and guidance for all or part of a computer system, so that it can be properly installed, used and serviced.

Documentation Plan

The documentation plan is a document which describes in detail the activities, the time to complete the activities and the resources required to complete a documentation project. The documentation plan also provides a detailed outline of the information that is to be written for a product and usually covers one or all of the following aspects of the product: installation, use, service.

Domain Manager

See *DEC STD 066-0 Digital Design Standards*.

Educational Services

Customer Services organization responsible for both customer and internal technical training.

Educational Services Strategies and Requirements Document

Educational Services document that includes the training strategy and requirements needed to develop the training required to support the product. It is a Phase 1 document.

Engineering Change Order (ECO)

A formal change to the product or its documentation to correct a problem, or add additional functionality or information. See *DEC STD 100-0 Introduction to Engineering Change Orders*.

Exit Criteria

Major requirements that must be completed prior to proceeding to the next phase of a product's life cycle.

Field Change Order (FCO)

Implementation of an ECO in the installed customer base. Process used by Field Service to implement engineering change modifications.

Field Implementation Plan (FIP)

A geography-specific Field Service Plan which contains information needed to support a product in a particular geography.

Field Launch Committee (FLC)

A subcommittee of ASC; participates in the development and implementation of field introduction plans, as documented in the Corporate Introduction Plan.

Field Replaceable Unit (FRU)

A unit of a system's structure which can be readily removed and replaced at a customer site.

Field Service (FS)

The Customer Services organization responsible for installing and maintaining hardware and software products through a portfolio of service offerings.

Field Service Logistics (FSL)

The organization responsible for material processing within Field Services; has responsibility for materials, repairs, and distribution of hardware parts to the Field Service personnel.

Field Services Pricing and Policies Committee (FSPPC)

Committee responsible for service pricing and policies relating to the Field Service organization.

Finance

Finance has the a key responsibility for providing financial support to the Product Team in the preparation of Business Plans and other product planning activity. The Product Business Unit (PBU) or sponsoring organization Finance Manager is responsible for coordinating finance activities across all Product Team functions.

First Revenue Ship (FRS)

Date that signifies the first product shipment to a paying customer external to Digital. This does not include field test units, seed units, or any other Corporately approved conditions under which a product may be given to a customer.

Functional Software Product/Hardware Pilot

Product built to specification with a volume level process and qualified parts.

Functional Specification

A document that tells *what* a product must do from the user perspective. Must include performance requirements for each functionality. It should include visual elements, for example Data Flow Diagrams to prevent ambiguity.

Geography Planning Groups

Field Service individuals responsible for the introduction, planning of new, and retirement planning of old products within their specific geographies.

Hardware Pilot/Functional Software Product

Product built to specification with a volume level process and qualified parts.

Hardware Product Services (HPS)

Field Service group responsible for business decisions relating to hardware portfolio of services.

Hardware Prototype/Software Functional Code Freeze

Complete working version of the product built to specification. Product has not been tested to meet standards, regulations, or manufacturing criteria.

Header Contact

A header organization is an order fulfillment organization with a goal to improve customer order fulfillment accuracy and timing.

Presently the U.S. and GIA order fulfillment responsibility resides in the U.S. Area Mfg. group, presently called the U.S. Business Center.

H Kits

Media and full documentation on a software product.

International Engineering Development (IED)

IED – International Engineering Development (Focal point is Jim Mills. See ELF for contact information.)

Internationalization Plan

Forms the commitment by IED to provide the Product Team with consulting services, development and delivery of product variants, and coordination of localization work at area and country levels for Europe and GIA. The plan identifies those dependencies that IED and the countries have on the Product Team to meet these commitments and provides the method for measuring progress of the internationalization effort.

KPL

Computerized Parts List

Law Department

Department within Digital that offers legal services to the various functions, for example, the Engineering Law section has the key responsibility for providing legal support to the Product Team.

Maintenance Service Expense (MSE)

A term used by Field Service to denote their maintenance expenses in providing service for their products.

Marketing Advisory Board (MAB)

A committee of representatives of all marketing organizations; PMGs, Industries, Services, PBU, Channels, CSSE. MAB proposes announcement messages, recommends product positioning for 8-quarter volume planning, approves application characterization plans, and advises the VP of Product Marketing on Corporate product strategy issues.

Marketing and Sales Strategy Committee (MSSC)

The Marketing, Sales, and Strategy Committee (MSSC) ensures that industry marketing strategy, channel strategy, and geographic plans are integrated with the systems and applications strategies. MSSC provides a forum for discussion/resolution of key product positioning strategies and is responsible for:

- Approving product pricing strategy, working closely with PMSC and Executive committee as required.
- Approving announcement strategy for all products

- Approving promotion strategies for all products
- Approving and reviewing the implementation of major marketing and geographic sales programs.

Proposals with strategic importance require both PAC and MSSC approval. PAC proposals with revenue more than \$25 million in the next 12 months, with major waivers, or of strategic importance must have MSSC approval.

Market Performance Review

Digital Specific:

Term used in the Phase Review Policy. A Market Performance Review is conducted within 12 months of the product release to the field. The review is then held periodically (usually every quarter) to evaluate the performance of the product in the field. The results of the reviews are used as part of the decision to continue with, enhance or phase-out the product.

Maynard List Price (MLP)

Price from which the country list prices, including the United States, are derived.

Mean Time Between Calls (MTBC)

The average time between corrective maintenance calls.

Mean Time Between Failures (MTBF)

The average time between failures.

Mean Time to Install (MTTI)

The average time to install an option or system. This time includes administrative, travel, and labor.

Mean Time Between Parts Replacement (MTBPR)

The average time between calls which require parts consumption. Mean Time Between Parts Replacement (MTBPR) is a term used by Field Service Logistics for planning spares inventory.

Mean Time to (accomplish) Repair (MTTR)

The average time required to complete a corrective service call. This includes administrative, travel, and labor time.

Mission Critical Applications

Applications which are essential to the operation of an enterprise, as distinguished from supporting applications such as payroll. Mission critical applications are different for each industry.

New Products Form (NPF)

An Software Distribution Center (SDC) form that must be completed before a software product can be duplicated and distributed.

New Product Start-Up (NPSU)

The costs in manufacturing for tooling, test equipment, and so on.

Ongoing Reliability Testing (ORT)

Ongoing Reliability Testing done in manufacturing plants on regular production units to check that the reliability is being maintained.

Original Equipment Manufacturer (OEM)

An OEM is an organization that purchases computer components from various manufacturers, assembles them to create a single unit, supplies it with additional hardware and/or software developed for specific applications, and sells it as a package.

Digital sells to end users both directly and through OEMs. OEMs in this context are an extension of the Digital Sales force.

PARC

Acronym for Pricing and Announcement Readiness Committee. PARC is the European equivalent to PAC.

Phase Exit Transition

A formal checkpoint event (or set of events). At this time, the Product Team verifies and agrees that appropriate phase Exit Criteria have been met. Primary participants are the Product Team members. Product Management will obtain appropriate level of approval. When Phase Exit is achieved, it is announced to the appropriate parties.

Plan of Record

Phase 1 business plans are the basis for the "go/no go" investment decisions and provide details sufficient to judge the quality of the investment. These plans are also called the "Plan of Record" by which the Corporation measures the quality and success of the investment decisions.

Product Phase-Down

Term used to indicate withdrawal of a product from the Sales arena. When a product is "phased-down," Digital devolves its marketing, manufacturing and sales responsibilities. Normally, service continues for some period of time.

Phase Review Committee (PRC)

The Phase Review Committee is a cross-functional body that meets monthly to review product status, identify issues, recommend further action, and approve the phase exit transitions for all Top 100 products.

Pilot/Functional Software Product

Product built to specification with a volume-level process and qualified parts.

Planning Automated Support System (PASS)

Customer Services new product planning database containing information and plans on all new and retired products.

Post Project Review

A review meeting held at the end of Phase 4A to review the performance of the Product Team in Phasing-in the Product.

Press Consultants and Analysts (PCA)

A subcommittee of ASC; recommends press, consultant, and analysts event plans to ASC. Manages the implementation of approved plans.

Pricing and Announcement Committee (PAC)

The Digital Corporate body that approves announcements and First Revenue Ship (FRS) of Products.

PAC is composed of representatives from all major groups in the Corporation including: Marketing, Product Management, Engineering, Manufacturing, Sales, Legal, Finance, Services and Administration. PAC establishes and publishes criteria for Product readiness, Sales readiness and Support readiness.

Proposals with strategic importance require both PAC and MSSC approval. PAC proposals with revenue more than \$25 million in the next 12 months or with major waivers must have MSSC approval.

PAC meets as a subcommittee of the Marketing/Sales Strategy Committee (MSSC) to verify that announcement and readiness criteria is met and to approve product pricing. Once this is done, the product is announced and is then transitioned into production, sales, and service. PAC First Revenue Ship (FRS) criteria must be completed prior to FRS.

Problem Resolution and Information Systems Management (PRISM)

A Field Service database containing noncritically known hardware problems and finally their solutions.

Product Business Unit (PBU)

The PBU is a business unit within Digital responsible for a portfolio of products. PBUs are divided into two types: systems PBUs and component PBUs. The PBUs plan and measure the worldwide success of the Corporation from the business/product perspective rather than from the functional performance perspective.

Product Captain

Provides a worldwide Sales perspective of the product to the PBU or other sponsoring organizations. Coordinates product plans between the Field, Engineering, Manufacturing, Marketing and Services.

Responsibilities include:

- Drive the Field Product Strategy Process
- Manage Field Volume Planning Process
- Initiate and Support Product Introduction Programs
- Manage Product Business Problem Resolution

Product Marketing Strategy Committee (PMSC)

Reviews product strategy from Marketing and Engineering standpoint; involves sharing information and setting directions.

Product Requirements Document

Document that defines the technical requirements and required functionality of a product. The Product Requirements document contains the base information from which the functional specification will be prepared as well as the schedule and cost estimates required for Phase 1 closure.

Product Team

This team is headed by the Product Manager. The Product Team generally has membership from the following functions; Product Management, Engineering, Marketing, Manufacturing, Customer Services, and Sales. Team size and composition is directly related to the product type and complexity. Team members coordinate all the tasks and integration activities across their respective functions to ensure successful delivery and service of the total product.

The Product Team supports the development of international products and their product variants. Information is gathered concerning worldwide market need and requirements. The resulting systems, products, and services are introduced into the marketplace. Resources available across the Geographies support the Product Team as the product moves through the phases.

Proprietary Information Disclosure (PID)

In certain situations it is necessary to disclose information on unannounced products and programs to customers to facilitate their long range planning in the interest of Digital's long term relationship with them. It is the goal of the Proprietary Information Disclosure Policy that these disclosures be consistently employed across the company.

Types of Proprietary Information Disclosures:

- Corporate Strategies – broad in scope in order to provide proper content for decision making.
- Major Upcoming Announcements – intent is to provide our major customers with advance notice of an upcoming strategic announcement.
- Future Products/Programs – not requiring strong control, minimal risk to revenue stream.
- Field Test and Independent Software Vendor Presentations – created to meet the needs to qualify field test sites and to provide information required by software vendors.

Prototype/Software Functional Code Freeze

Complete working version of the product built to specification. Product has not been tested to meet standards, regulations, or Manufacturing criteria.

Qualification Testing

Qualification Testing includes:

- Regulatory testing and approvals
- Other Digital standard testing or appropriate external testing
- Performance testing
- Testing in all supported environments
- Reliability Qualification Testing
- Software certification and evaluation by applicable software quality test groups (for example SQM/SQG)
- Internal Field Test
- External Field Test
- Process Verification Test (PVT) and Process Qualification Test (PQT)
- Application Characterization
- Design Maturity Test

Ramp-Up

The process of getting from initial production, sales, and services to steady state production, sales, and services.

Regression Testing

Regression testing is an activity performed on a new product baselevel and involves putting the product through a minimum, rigorous set of test procedures to ensure that all expected functionality of the product is present and working correctly. Regression testing provides confirmation that no regression of capabilities of the current baselevel has occurred as a result of either modifying it to correct problems or adding new functionality.

Reliability, Availability, Maintainability Program (RAMP)

The collection of goals, strategies, and requirements that are specified to ensure product success and profitability in the marketplace from a service viewpoint.

Reliability Qualification Testing (RQT)

Testing to demonstrate that the intended reliability level has been achieved.

RSL/ARL

Recommended Spares List/Authorized Returns List – lists maintained by Field Service Logistics for parts handling.

Serviceability/Maintainability Test Plan

Services plan to test the product from a Services viewpoint.

Services Impact and Requirements Document

Phase 0 deliverable from the Services representative on the Product Team. It includes the anticipated impact on Services of the proposed product and also the service requirements that should be considered in developing this product.

Services Market Appraisal

Document that describes the changing product environment and the impact of that environment on services. It also details specific marketing strategies and programs that will best allow management of the services business.

Services New Product Notifier

Notification of a new product from Services Program Team member to other Service functions.

Software Functional Code Freeze/Hardware Prototype

Complete working version of the product built to specification. Product has not been tested to meet standards, regulations, or manufacturing criteria.

Software Problem Reports/Quarter (SPR/QTR)

Software problems reported per quarter.

Software Product Description (SPD)

The document which is the legal definition of the product functionality. It describes software, minimum hardware needed to support it, components and services.

Software Product Services (SPS)

Field Service group responsible for business decisions relating to software portfolio of services.

Sponsoring Organization

This organization champions and funds, internally or externally, product development and delivery.

Sustaining Engineering

Also called Support Engineering, Maintenance Engineering

The engineering function that is responsible for supporting Digital products during Phases 4 and 5.

Technical Information Management Exchange (TIME)

Technical Information Management Exchange is a software problem reporting system (database) used by Field Service.

Top 100 Process

Top 100 Process – Products with the following criteria are selected for inclusion on the Top 100 list:

- All major systems
- High-revenue-producing components
- Major software products
- High-strategic-impact products of any nature

Most new projects are entered on the list during Phase 0 or Pre-Phase 0. These projects remain on the list until First Revenue Ship (FRS) or until they are canceled. Products on the Top 100 list have not completed the phase review exit process until they are approved by the Phase Review Committee.

Verification Test Plan

The collective activities and events that provide an organized plan to ensure that the quality of a product will satisfy the requirements as defined in the Product Requirements Document. The Verification Test Plan identifies the purpose, procedure, data and expected results of the test.

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