# The Fast Decision Process

**Catherine A. D'Abadie**
**Michael W. Funk**
**Francine S. Litofsky**
**David E. Nelsen**

The Fast Decision Process (FDP), a new process-oriented way of working using quality tools and methods, is an effective and efficient approach for making complex decisions. It enables systems engineers and other AT&T employees to produce higher-quality team products and documents using less calendar time and fewer staff hours. The FDP process was developed internally by AT&T Bell Laboratories' systems engineers, together with members of marketing, development and implementation organizations, in response to competitive pressures. FDP brings together teams that are empowered to identify and resolve technical issues surrounding new offerings. Team members work together in brief, highly-focused meetings in dedicated, computer-supported workspaces. Survey data show that FDP helps meet AT&T's stated goals of increased quality and decreased cycle time.

## Introduction

In late 1987, AT&T Bell Laboratories' systems engineering and development organizations formed a quality improvement project team to find ways to reduce the time needed to bring new product or service concepts through the front end process (FEP). This is that part of a product's life cycle that begins with an idea and ends with a consensus on all aspects of the product or service to be developed. The team recommended adoption of the Fast Decision Process (FDP), the methodology they had developed to produce their outputs. FDP is a process-oriented way of working that uses quality tools and methods in a computer-supported work environment. [1]

FDP methodology was first tested on five projects in 1989. To date, over 160 sessions have been held. In October 1990, FDP received the Bell Laboratories President's Quality Award. It is being considered for designation as an AT&T R&D Best Current Practice. A *Best Current Practice* is a practice that covers one part of the total development process, has substantial favorable experience associated with it, and is considered competitive by most practioners. [2]

## The Fast Decision Process

FDP is used by marketing, product management, systems engineering, development, testing, and other interested organizations to select a course of action and to generate team-produced deliverables, typically documents. These may include: project plans and schedules; proposals for new telecommunications products, services or features; or requirements documents. Requirements documents convert customer needs into technical specifications that are then used by developers to produce the needed product, service, or feature. Nontechnical documents, such as business cases and quality methodology documents, have also been produced using FDP methodology.

Before the introduction of FDP, the document writing process generally took longer. Typically, the project leader would assign authors, based on their expertise, to draft sections of a document. Since group meetings were infrequent, individual contributors often found it difficult to understand the project completely and to develop a sense of ownership in it. Schedules frequently slipped and market opportunities were missed because of the difficulties inherent in drafting a complex project document while relying primarily on telephone communications and sporadic meetings. FDP has largely eliminated these difficulties.

Today, using FDP, team members work together during a dedicated session,

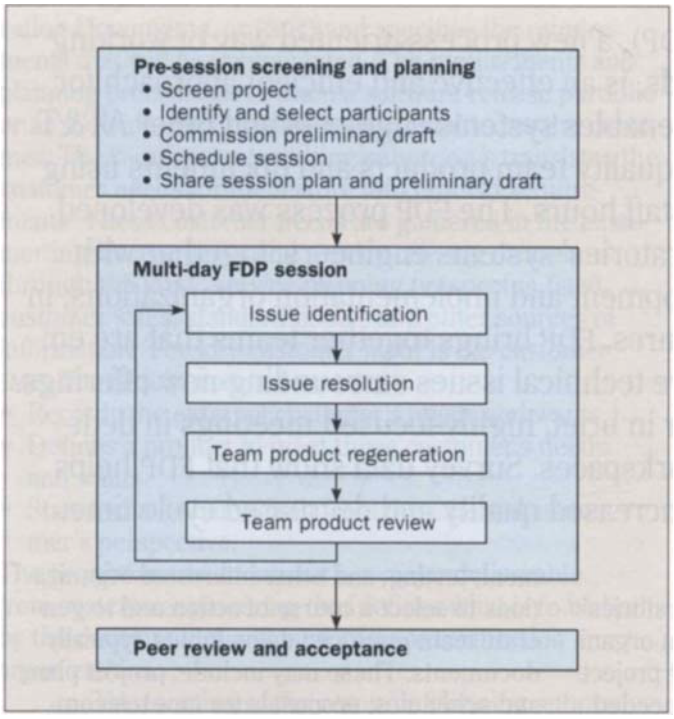


**Figure 1. Careful advance screening and planning lays the foundation for a smoothly run FDP session where team members can proceed through a four-step process to prepare a document that is then ready for peer review and customer acceptance.**

lasting two to four days. Before the FDP session, the Technical Project Coordinator (TPC) or team leader, working with the FDP facilitator, establishes a well-defined goal and detailed work plan for the session. During the session, the FDP facilitator leads the team through a four-step consensus-building process of issue identification, issue resolution, team product regeneration, and team product review. Participants are empowered as decision-makers by their management to identify and resolve issues, and document the results. The discussion and consensus-building process used in FDP is supported by the electronic equipment in the FDP room. Normally, one or two iterations of this process will produce a product ready for peer review.

The next sections describe a typical FDP session, including the planning stage, inputs, a description of an actual FDP session, and the outputs at the end of the FDP process. Figure 1 shows a simplified schematic of the FDP process with its inputs and outputs.

### Planning the FDP Session

The first step in organizing an FDP session is to determine if the project and the project team meet the criteria for a successful session. This screening is done by the FDP manager and the TPC. While two criteria—goals and empowerment—are crucial to FDP success, more latitude is permitted for other characteristics, such as team size or co-location requirements. The criteria are:

- The team must have a well defined goal or product
- All team members must share a common understanding of the project's direction
- The session goals depend upon identifying and resolving issues
- The team should be empowered to make the necessary project decisions
- The project schedule is tight but allows two weeks to plan the FDP session
- The team has 4 to 16 members
- The team can all assemble at one location on a fully-dedicated basis
- There must be a commitment to teamwork
- All team members must share in writing, copying, etc., during the session.

After the team has been screened and its key team members identified, a one-to-four day session is scheduled at one of the dedicated FDP conference rooms.

### Required Inputs for a Successful FDP Session

The team must have a well-defined goal or product in mind, as well as having a common understanding of the project's direction to achieve this goal. This is a key requirement for FDP success since no matter how many issues are identified in an FDP session, none will be resolved unless there is agreement on goals. Examples of goals include: choosing a course of action among several alternatives based on well-defined criteria; or producing service descriptions, feature specifications, project plans, project schedules, or proposals to satisfy customers' requests.

Another crucial ingredient is empowerment of team members. If higher management endorsement is needed for certain decisions, it should participate in the session. The benefits of the FDP process will be nullified if team decisions are routinely overturned.

Careful preparation is essential for a successful FDP session. Ordinarily, a minimum of two weeks is required to secure a volunteer facilitator, schedule all

key participants and plan the session.

Planning is done by the TPC and the FDP facilitator. They will ensure that all those people who should be involved in making decisions affecting the project do participate in the session. These should include all interested organizations, including marketing, product management, systems engineering, development planning, development, system test, implementation, and operations.

During planning, the TPC and facilitator will develop an overall plan of the session and draw up a list of the main authors and contributors who are then assigned to draft individual project components before the FDP session. If necessary, the TPC and facilitator can subdivide the team product into smaller elements that can be more easily tackled during the FDP session. Planning should also identify additional resources that may be needed.

Pre-session planning is complete when the TPC and the facilitator agree on what they expect to happen hour-by-hour during the session. As the final step in planning the session, the TPC shares the session plan and the proposed output with the other team members to form a consensus.

**Description of a Fast Decision Process**

All key project members should participate in the FDP session. A facilitator, who is trained in FDP methodology, is also present to guide the participants through the process. The session takes place in a dedicated room that is furnished with all the equipment the team needs to produce its team products quickly and accurately: personal computers, printers, graphics terminals, dedicated computer accounts, photocopiers, facsimile machines, telephones, and teleconferencing equipment.

During an FDP session, the team will proceed through the following four-step process:

- Issue Identification
- Issue Resolution
- Team Product Regeneration
- Team Product Review.

Two iterations of the FDP cycle are usually enough to produce a high-quality product.

The four steps are described below.

During the issue identification step, team members identify issues or inconsistencies in the draft document. These issues are recorded by the facilitator. At this stage, there is no discussion of the issues or their resolution. Thus, no time is wasted on resolving issues where solutions may be altered by problems occurring later in the draft. An entire document or a major portion of a large document is dealt with in this way before moving on to issue resolution. Thus, quickly and non-contentiously, the team develops an overall understanding of project issues and a better understanding of the relationships between issues.

Reviewing the issues list, the team attempts to reach a better understanding of each issue and develop solutions to the problems inherent in these issues. This is the crucial step of the process when the FDP facilitator's role is most important. The facilitator works to keep the team focused on the issues at hand, intervening quickly to keep the discussions from becoming sidetracked. The facilitator ensures that all participants have an equal opportunity to present their ideas and that the final document represents a true consensus. Each resolved issue is then assigned an owner, who will be responsible for revising the document to reflect the team's consensus on the issue. Issues that cannot be resolved quickly are assigned to an owner to be addressed outside the session.

Next, the team members turn to the computing facilities and other equipment in the FDP room to revise the draft. The new version is printed and distributed to each team member. The facilitator remains on hand to help the team maintain its focus.

Team members now spend time studying the revised document, noting new concerns and issues to be dealt with during the next iteration of the four-step process. Normally, two to three iterations of the process result in a document ready for inspection by the team's peers.

The four-step process is managed flexibly during a session to meet team needs. Although sessions normally begin with issue identification on a draft previously prepared by team members, some teams may begin with issue resolution using previously prepared issues lists or by producing the initial draft in the FDP environment. Sessions can also begin with participants reviewing a newly produced draft they are seeing for the first time.

A team working on a document of about thirty pages can expect to complete one FDP cycle in a day. Larger documents can be broken into smaller sections and each section treated separately. As the meeting

**Panel 1. One Team's Experience with FDP**

In early 1990, a project team was established to write technical requirements for a series of feature releases for commercial and private telephone customers. The team began with a marketing description of the various service releases for the new features. It applied FDP to prepare its second requirements document and continued using FDP through mid-1991 to prepare additional documents needed to specify subsequent releases.

One document was ready for peer review after two iterations of the FDP process during a two-day session. The others were larger and required at least two sessions each. Four two-day sessions were needed to prepare the largest document. The team used each successive session to examine and resolve issues that had surfaced since the previous session.

The TPC estimated that using FDP saved one to two months per document, representing an estimated total project savings of six to eight months. According to the team leader, the reasons for this were:

- All team members were assembled together at one time.
- They were able to review the initial draft document before the session.
- FDP provided a structured method of issue identification, resolution, and assignment of open issues.
- The independent facilitator, who had the team members' respect, was an effective guide and referee.

The team leader felt there was also a gradual improvement in FDP methods during the period the team was using it. To have allowed more time for issue resolution, the team leader would have planned longer individual sessions, lasting three or four-days.

progresses, the schedule can be adjusted to reflect actual elapsed time. Time constraints enable the facilitator to curtail lengthy discussions when a consensus cannot be achieved within the time frame and personnel resources of the session.

### Products of a Successful FDP Session

The final team product of an FDP session may be a document, plan, service or feature architecture or other work ready for peer review. After the session, the output is reviewed in a larger meeting or inspection. People with the necessary expertise in the areas of customer needs, technology, development, testing, and knowledge of the project should be present.

The peer review meeting should also be attended by any organization that has a stake in the output, such as project sponsors, marketing personnel and product managers, and other systems engineers. Other attendees should include developers and system testers who will need to use the team product, and outside vendors and end users of the product, service, or feature being developed. Management may be present, if necessary, to obtain final agreement on and approval of the output. However, the peer review should result in few, if any, significant changes to the output of the FDP session because management had empowered the session participants to make necessary decisions.

Panel 1 provides a case study of a typical project team, their project and how FDP helped it accomplish its goals.

### Quality Metrics And Accomplishments

The FDP process has been subject to continuous evaluation and improvement to ensure that it meets customers needs. Since the first sessions, participants have been surveyed to recommend changes. Their suggestions led to:

- Establishment of the facilitator's function
- Creation of dedicated FDP working environments
- Checklists for facilitators, TPCs, and participants
- Screening procedures to ensure FDP is applied properly
- Feedback reports for individual session evaluation and improvement.

Participant surveys are invaluable in measuring the quality of the process itself. Survey questionnaires were sent to participants in 88 sessions held between June 1990 and June 1991. The surveys were conducted within one week of each session. About 400 participants responded, representing 45 percent of those surveyed. A summary of survey results appears in Figure 2.

As shown in Figure 2, participants believe that FDP methodology did help their teams identify and resolve issues more efficiently than their previous methods. Greater efficiency in issue identification was reported by 80 percent of participants, while two-thirds of claimed improved efficiency in issue resolution. These and other metrics (See Figure 3) suggest that using the

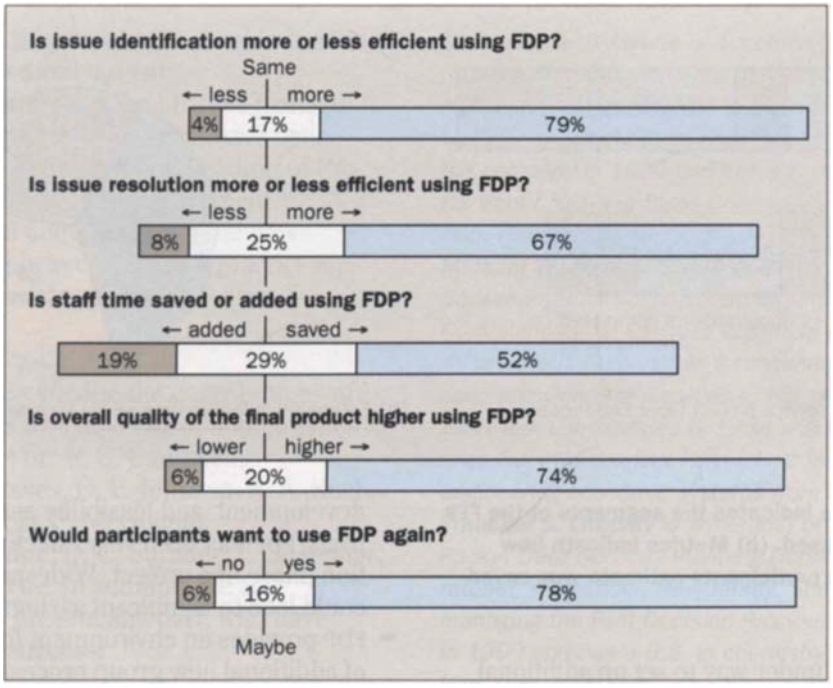


**Figure 2. Metrics gathered for FDP are based on responses to questionnaires sent to participants of 88 sessions within a week of session completion.**

FDP process results in a higher-quality team product faster and, just as significantly, the team invests fewer staff hours and shortens calendar (cycle) time.

When asked if they would choose to use it again in similar situations, 78 percent of the respondents answered yes. (See Figure 2.)

Figure 3 shows that session participants also felt that the FDP process significantly shortened the calendar time required to produce a high-quality team product when compared against their traditional approach. Overall, 80 percent claimed that FDP reduced the time needed to produce a team product by at least one week. Detailed results are shown in Figure 3. These savings assume FDP is used once during the technical evaluation phase and once again in the technical service description phase.

### Fast Decision Process Support

Initially, FDP was run without a dedicated staff, but growing demand now justifies two full-time specialists to support the process. In addition to managing the dedicated FDP conference facilities at three AT&T locations in central New Jersey, the support staff also screens projects, schedules sessions, trains facilitators and provides other assistance. If requested, FDP sessions can be held in other locations because the FDP process and environment are easy to transport.

Facilitators play an important role in the FDP process. They are volunteers, usually from technical areas of Bell Laboratories. Their training involves attending a half-day course to learn FDP methodology and then observing an actual session. They are provided a handbook that contains the information and materials needed to conduct a session. Checklists are also provided to guide the facilitator, the TPC, and participants through the process. The support team also prepares confidential evaluation reports for individual sessions. Project teams are billed based on the duration of their sessions.

### Enhancements To FDP

FDP has been proven useful in the creation of many types of team products. While it is more traditional to use FDP for requirements documents for new products and services, it is also being used in other applications. Among them: writing marketing descriptions; drafting quality methodology documents; developing project plans; creating Request For Proposal responses; and delineating issues in earlier stages of service or feature definition. In addition, a number of AT&T's external customers have shown interest in the process. Work is under way to make the process and its benefits available to them.

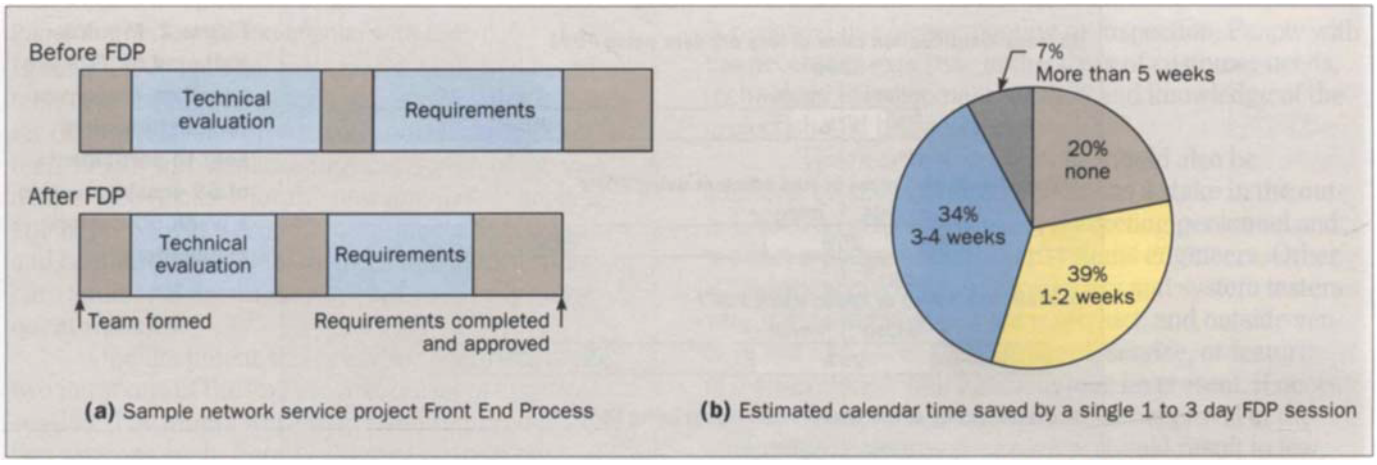


**Figure 3. (a) The time line indicates the segments of the FEP where FDP is most often used. (b) Metrics indicate how many weeks that session participants estimate was saved by the FDP process.**

Planning is also under way to set up additional dedicated FDP rooms in other AT&T locations. These other sites will enable teams to assemble in different locations and conduct the sessions using video conferencing equipment, thereby saving travel time and expense.

There is also a need to speed the preparation of new team products during FDP sessions. The FDP staff is evaluating software tools that will allow generation of documents in a "what-you-see-is-what-you-get" computer platform. In addition, studies are underway to find improved methods for scribing information during the issue identification and resolution steps.

Participant's recommendations for improving the FDP will be evaluated in a continuing effort to increase FDP's value to its users.

### Implications and Future Directions

The Fast Decision Process is recognized as an effective and efficient method for making complex decisions. It is being used by a wide variety of project teams to produce higher quality products faster in fewer hours.

The FDP staff believes that the FDP approach may offer significant improvements in quality and time savings in the FEP.

- FDP can be extended to other areas of the FEP, such as new product or service concept definition, architecture development, and feasibility assessment projects. In trials, FDP has been very effective in the concept definition phase of a project. Widespread use of the approach could lead to significant savings in time in the FEP.
- FDP provides an environment for efficient integration of additional new group processes into the FEP. For example, a series of linked two-day FDP sessions could provide the environment for the application of quality function deployment, "a method for capturing and tracking customer requirements throughout the life cycle of a product."[2]
- Concurrent engineering is the development of requirements and system concepts by a multifunctional team from market research, requirements engineering, and product design engineering. Ideally, detailed design is performed simultaneously with development of production capability, field-support capability and quality.[3] FDP shares with concurrent engineering an improved design process and closer cooperation among team members. In fact, FDP provides a structured setting for many concurrent engineering processes to take place.
- FDP provides a mechanism for organizational learning because it is being continuously improved and teams that participate in it share a common learning experience.
- The FDP process and environment are easy to reproduce. Consequently, it is easy to set up temporary FDP facilities to other locations.
- Since the work is carried out in a short period of time, the entire process is observable. As a result, it is easy

to measure and these measurements provide the basis for making additional improvements.

- FDP methodology conforms to the process management and improvement guidelines that have been adopted by AT&T under the general heading of Process Quality Management and Improvement.[4]

Members of the FDP staff continue to pursue new methods and tools to apply in current FDP practice and possibilities for new areas of applications.

**Acknowledgments**

The authors acknowledge the contributions of the other team members who developed, implemented and continue to support FDP: R. C. Campbell, S. N. Haque, L. A. Hargraves, D. L. Johnson, R. A. Koch, F. W. Korty, W. K. Love, D. F. McGuigan, A. C. McQuaide, W. R. Moe, D. C. Shrader, V. Sheedhar, A. C. Wilkinson, and C. Yue. In addition, we acknowledge all facilitators, present and past, who have made the FDP process a success.

**References**

1. Catherine A. D'Abadie, Michael W. Funk and David E. Nelsen, "The Fast Decision Process: Enhancing Communication in Product Design," *Quality Progress*, June 1991, pp. 65-68.
2. AT&T Quality Steering Committee, *The AT&T Quality Glossary*, Select Code 500-745, AT&T Customer Information Center, Indianapolis, Indiana, 1990.
3. D. Clausing, "Concurrent Engineering," paper presented at a meeting on concurrent engineering design sponsored by the Society of Manufacturing Engineers, June 1990.
4. R. B. Ackerman, R. J. Coleman, E. Leger, and J. C. MacDorman, *Process Quality Management and Improvement Guidelines: Issue 1*, Select Code 500-028, AT&T Customer Information Center, Indianapolis, Indiana, 1987.

***Catherine A. D'Abadie*** *is a member of technical staff in the Network Development Area at AT&T Bell Laboratories in Holmdel, New Jersey. She is the manager of the Area 51/Network Development Best Area Practices Program. She joined the company in 1980 and has a B.S. and M.S. in mathematics from Louisiana State University and a Ph.D. in statistics from Florida State University.*

***Michael W. Funk*** *is a staff manager in the Card/Operator Service Product Management organization of AT&T Consumer Communications Services Business Unit in Basking Ridge, New Jersey. He is responsible for extending the reach of AT&T's Card and Operator Services to the Wireless Market. He joined AT&T Bell Laboratories in 1984 and has a B.S. in computer science from Rensselaer Polytechnic Institute and an M.S. in engineering-economic systems from Stanford University.*

***Francine S. Litofsky*** *is a member of technical staff in the Packet Data Services Planning Department at AT&T Bell Laboratories in Holmdel, New Jersey. She is responsible for managing the Fast Decision Process. She joined the company in 1990 and has a B.S. in chemistry from Barnard College, New York, New York.*

***David E. Nelsen*** *is a product marketing manager with AT&T Data Communications Services in Holmdel, New Jersey. He is responsible for AT&T's InterSpan Services, including Information Access Service, Frame Relay Service and Locator Service. He joined the company in 1982 and has a B.S. in systems engineering from the University of Arizona and an M.S. in operations research from Stanford University.*

*(Manuscript received October 15, 1991)*