

White Collar Productivity Improvement

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Sponsored Action Research 1983-85

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White Collar Productivity Improvement

Sponsored Action Research 1983-85

ORIGINAL CONTAINS
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Summary and Findings
of a two-year study by
The American Productivity Center

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General Dynamics Corp. ✓
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Executive Summary

Executive Summary

- Research scientists cut “average study” time by more than three months.
- Engineers made time and cost estimates one of their *first* responses to a request for services. Unnecessary paperwork and overall time to process the requests dropped significantly.
- A personnel unit gave other departments direct computer access to employee files. The departments now update their own workers’ files. Personnel employees maintain the integrity of the system and the confidentiality of privileged data, but former file-keepers have been reassigned to more fruitful endeavors.
- An operational auditing group reexamined its mission and took a radical change in direction. The group shifted its focus from exceptions to business procedures to opportunities to guide and advise those making the exceptions. Members turned to roles as counselors rather than policemen.

Across the nation, in similar departments or functional areas of 13 corporations, white collar employees are proving that their productivity can not only be measured, but also improved. These accountants, engineers, scientists, human resource specialists, information management experts, and other professionals and their staffs — nearly 4,000 altogether — are pioneers of an approach developed by the American Productivity Center to boost white collar worker *effectiveness*. They are the heart of the Center’s two-year sponsored action research project, White Collar Productivity Improvement, completed in August, 1985.

Dispelling suspicions

The Center developed a six-phase methodology for white collar productivity improvement in response to a growing need among its more than 250 corporate, labor, government, and academic supporters to address productivity in their fast-growing managerial, professional, and clerical ranks. At the same time, the project was designed to dispel suspicions that white collar work is too varied, too dependent on subjective judgement or “creativity” to hold opportunities for the types of productivity gains generally associated with manufacturing operations. The project followed a 1983 survey by the Center and Steelcase, Inc., that found both knowledge and practice of white collar productivity improvement severely lacking.

Traditional attempts aimed at cutting costs or staffing levels, often alienating workers at the outset. They typically focused on increased efficiencies in individual activities or specific procedures, such as paperwork processing. In the worst instances, a specific technique — usually available only by hiring an outside expert — became viewed as an all-purpose solution in search of applications. Improvements were isolated and short lived. Employees affected were left with no greater capability to do their jobs well, and much greater suspicion of the next “productivity program.”

In contrast, the Center’s new approach to white collar productivity focuses on the effectiveness of actual outputs, typically professional services. These typically consist of both tangible products, such as a financial report or research study, and intangibles, such as the expertise, advice or guidance that accompanies the product. Effectiveness is assessed primarily as the degree to which these services meet both internal objectives, those of the work unit, and external, or “customer,” needs and expectations.

This service orientation and focus on effectiveness avoids many of the pitfalls of the traditional approaches.

It aims at innovations in the delivery of products or services to adapt to changing business conditions. It stresses improvement in the quality and timeliness of white collar activities and ensures they stay in line with overall organizational strategies. The Center’s approach also focuses on individual capabilities and their contribution to the functional unit. It gives employees tools, such as productivity measures and team-building techniques, they can adapt to their own unique circumstances. Most important, the employees and their managers take responsibility for every step of the productivity improvement process so they can take it over and carry it on.

Involvement

The White Collar Productivity Improvement project was carefully crafted from the outset to ensure a high degree of managerial and employee involvement.

Executive Summary

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own paces. At the formal close of the research in August, 1985, all but two had completed or were continuing to work through the methodology. (One dropped out due to drastic management change; the other, due to its divestiture from the sponsoring corporation.)

More than three fourths of the 56 pilots had progressed through the measurement phase — perhaps the most difficult of the six steps — in which employees themselves selected indicators of their present and future effectiveness. Most of these also had completed redesigns or new designs of their services aimed at boosting their productivity and organizational effectiveness.

Phase-by-phase results can be generalized as follows:

1. *Diagnosis phase*

- Clarification of and agreement on the work unit's outputs and services.
- Definition of users' needs and expectations.
- Identification of leverage points for productivity gains.

2. *Objectives phase*

- Clarification of the unit's mission and purpose.
- *Creation of a vision for achieving the mission and purpose.*
- Objectives tied to the development and delivery of services.

3. *Measurement phase*

- Measures emphasizing service effectiveness and critical points.
- Means to track and feed back data for problem solving.
- Data useful for ongoing improvements.

4. *Service (Re)Design*

- Clear, agreed upon approaches to service development and delivery.
- Services that are consistent with objectives and measures.
- Improved capability to identify opportunities for improvements and to execute changes.
- A framework for effective implementation of new office technology.

5. *Team Development*

- Smoothed working relationship among coworkers and with other units or functional groups.
- Agreement on back-up personnel and procedures.
- Improved morale, enhanced cooperation, active participation.

Each of the project's 13 sponsoring companies assigned liaisons to serve on a steering committee that set the course for the ensuing research. Corporate coordinators were assigned to assist each firm's several pilots, groups of 25 to 200 workers responsible for recognizable services of a functional unit or department. At the 56 pilots, a pilot manager was assigned to work directly with one of seven Center research associates.

The pilots represent nine functional areas: accounting and finance, customer service, engineering, facilities management, marketing and sales, operations, information systems management, human resources, and research and development.

Frequent steering committee meetings, training sessions for coordinators and pilot managers, and project conferences at the American Productivity Center in Houston brought sponsoring firm participants together to share ideas and experiences with the methodology. In addition, the project employed computer conferencing for on-line surveys and report preparation, tutorials, ongoing discussions, and messaging. These computer networks proved invaluable to both pilot progress and overall project management.

Progress

Progress and success with the methodology varied considerably from firm to firm and pilot to pilot with pilot members' level of participation in and commitment to the project, management's dedication, and the use of the methodology.

The 56 pilots were initiated into the project at various points during the past 24 months, and proceeded at their

Executive Summary

6. Technology Parameters

- Parameters for technology directly in support of services.
- More efficient performance of routine tasks.
- Enhanced communication ability.

Overall, the progress of the research pilot groups falls in these categories:

- Business discipline resulting from a service orientation.
- Improved operational capability and better control of resources.
- Improved morale and motivation.
- Internal ability for continued productivity improvements.

Findings

In addition to spurring productivity at the pilot group level, the project also contributed significantly to general knowledge of white collar productivity and improvement practices.

Center research associates documented project developments in written case studies of various pilot groups. They wrote briefings on assessing opportunities for improvement, measurement in white collar environments, the role of management in the improvement effort, environmental design as related to white collar productivity, and a consultant's perspective on the improvement process. The Center's six-phase methodology also was refined throughout the project to reflect lessons learned at the various steps of each phase. These additional research products are available from the American Productivity Center.

The two-year test of its methodology supported many initial assumptions by the Center about white collar productivity and improvement efforts. These findings fall under eight general observations:

1. White collar productivity improvement is founded on basic issues of vision, orientation, and management practices.
2. Attention to "operational" issues will enable productivity improvement to take place.
3. White collar professionals require additional training in order to deliver their services effectively.
4. Administrative systems within an organization offer a major opportunity for productivity improvement.

5. Measurement of white collar work is both possible and desirable.
6. Technology, such as computer mediated systems or new office environmental designs, is best justified when linked to critical junctures or features of white collar services.
7. Self-reliance is a key to ongoing productivity improvements.
8. White collar productivity improvement is dependent on seven critical success factors. These are:
 - A climate supportive of change, innovation, and risk-taking.
 - A vision for the future of the function that is shared among all employees.
 - Emphasis on service issues and opportunities.
 - A flexible methodology, one the function can adapt to its own circumstances and business.
 - Leadership by the function's managers, not by a consultant or lower-level employee.
 - Technology directly linked to productivity leverage points.
 - Involvement and "buy-in" by most employees at all levels of the function.

Work continues

Pilot groups, managers, and coordinators involved in the White Collar Productivity Improvement project continue their efforts to become more effective, productive professionals even as the first phase of the research effort draws to a close. In the more aggressive of the sponsoring companies, the methodology and new management skills are spreading to other locations and functional areas.

From its headquarters in Houston, the American Productivity Center also continues its work to seed continued white collar productivity improvement and to expand understanding of this vital issue.

The Center has undertaken a second phase of sponsored action research, White Collar Productivity Improvement: Innovative Methods and Plans in Action (IMPACT), based on findings from its first research study. IMPACT will pursue continuing improvements in operations within pilot groups, in the working interfaces between pilot groups, and in firm-level administrative systems.

Introduction

American industry and government witnessed a challenging period during the late 1970's and early 1980's. The effects seem to endure.

In the private sector, the changes have been most turbulent. Deregulation of transportation and banking, increased controls on health care costs, aggressive competition by lean domestic firms and low cost foreign competitors, and rapidly changing technology have shaken the foundation of most industries. Many of the tried and true "practices" of business no longer appear reliable.

The public sector has not escaped the disruption. A new Administration heralded a theme of less federal government and more state or local control and responsibility. Changed or lost sources of funding necessitated major budget revisions and close scrutiny of resource allocation. Pursuit of productivity gains became progressively more popular as government agencies sought to manage the transition.

Productivity improvements were not new to American organizations. Since the decline in productivity growth in the late 1960's, the issue had risen in prominence, primarily in production and manufacturing environments. In the ensuing 10 years or so, productivity became a household word — one with innumerable definitions and connotations. Yet despite the visibility of the issue, limited information existed on the productivity of white collar and office workers, and only sporadic efforts had been made to improve their effectiveness.

As the nation's leading advocate of productivity improvement, the American Productivity Center was frequently approached for assistance and advice. Many of the corporate, labor, government, and academic supporters of the Center recognized that a major opportunity for productivity gains resided in their large — and still growing — staffs of white collar employees. Among many firms, managerial, professional, and clerical staff composed the bulk of the workforce and commanded the greatest share of the payroll. Perhaps more significant, managerial and professional employees were and are viewed as prime means to product innovation and competitiveness.

In response, the Center surveyed and consulted with several hundred corporations and public agencies and

published a summary of findings in *White Collar Productivity: The National Challenge*. The report, cosponsored by Steelcase, Inc., found that few models of white collar productivity improvement existed. Moreover, the majority of the programs that had been attempted exhibited similar, traditional characteristics.

The Traditional Experience

Purpose:	Cost cutting Reduced overhead
Focus:	Individual activities and practices Specific problem or procedure
Approach:	Technique orientation Solution seeking applications Narrow thrust
Implementation:	Consultant dependent
Impact:	One shot
Theme:	Efficiency

The traditional experience revolves around cost cuts and reduction in overhead by streamlining the work of persons in particular positions, such as clerks or technicians; resolving a problem; or repairing a procedure that has grown cumbersome. In the worst scenarios, a specific technique with a narrow thrust is used. The technique is viewed as an all-purpose solution in search of an application. Typically, outside expertise is needed to apply any detailed approach over the time required to achieve white collar productivity gains. Such attempts usually are isolated or periodic and require the consultant or expert to return for repeated applications.

In brief, the theme has been one of "efficiency" — an attempt to reduce the cost of inputs, while the outputs remained unclear or in less demand.

The traditional experience appeared to offer limited promise in turbulent business conditions. Costs were cut periodically, but no greater capability was gained once the "fat" had been pared. Further, the process of change and productivity improvement often took on a distasteful flavor even for the survivors of these traditional methods.

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The Center's investigation revealed that comprehensive, concerted efforts to develop new approaches to white collar productivity improvement were clearly needed. Consequently, the Center devised a contrasting approach — one designed to deliver greater benefits.

Sponsored Action Research

Purpose:	Improvements in quality and timeliness Innovation in product/service approach Adaptation to business changes
Focus:	Mission/purpose/direction Service/outputs Functional unit and employee capabilities
Approach:	Adaptable process Tools to fit services/outputs Integrate people, place, tools
Implementation:	Management and employee dependent
Impact:	Ongoing
Theme:	Effectiveness

The two-year action research project the Center designed was aimed at operationalizing these features. White collar work groups, usually representing specific professional functions or departments, participated because they needed improvement in the quality and timeliness of their services; innovation in the way the work was conducted; and, in some groups, adaptation to continuing changes in the firm or its marketplace.

In each group, a six-phase methodology enabled managers and employees to take a fresh look at their mission and purpose; to evaluate their design for services and outputs; and to identify needed tools and appropriate places of authority. The process could be adapted to the unique services and outputs of each group, with an emphasis on ensuring a fit among employees, their environment, and their tools. Managers and employees led the effort. With assistance from the Center, they acquired the skills and experience needed to adjust steps of the process for changing conditions and to transfer productivity improvement methods to other white collar areas. With its emphasis on performing the "right" services and meeting user or client needs, the project focused primarily on professional *effectiveness*.

The purpose of the project was not only to improve the effectiveness of participating groups, however, but also to advance the knowledge and practice of white collar productivity. Thus, the project's design as "action research" — an approach to be refined and modified as further experience was gained. The project also was crafted to provide for sharing information among groups within a firm and among the sponsoring companies. Communication among peers provided for a richer experience. In addition, the project was advised by a steering committee comprised of liaisons from each sponsoring company. The committee gave direction to the project and ensured that sponsors' expectations were met.

Assumptions

The project was based on five major assumptions:

1. White collar productivity improvement must be demonstrated and proven within each firm.

In few, if any, firms is there widespread acceptance of a productivity model among various staffs and functions. Each function or staff and each firm seeks unique benefits to be derived from productivity efforts. Thus, the model for productivity gains must be "home-grown" in order to be genuinely accepted on its own turf. Given these organizational character traits, large-scale or firm-wide white collar programs — particularly with an emphasis on the broader issue of effectiveness — appeared unlikely.

2. White collar productivity results from efficiency and effectiveness.

Efficiency cannot be left out of the productivity equation. But experience suggests that *effectiveness* in a white collar context cannot be assumed. Many white collar work units have lost track of client or user needs, and over time, the mission or purpose of the unit frequently slips out of line with that of the corporation or that demanded by the marketplace. Few organizations have safeguards to ensure that, indeed, they are doing the right things.

3. Services are a useful focus for analysis and measurement.

A vigorous analysis of any white collar function's effectiveness must begin with three fundamental questions:

- What are we primarily here for?
- Who relies upon us?
- How do we know their needs have been met?

The questions counsel the function to look beyond its many activities to the ultimate delivery of its support or services to a client or user. The focus on services, which often transcend internal boundaries, encourages the function to take a fresh look at its own organization and the unrelated activities that might be eliminated. In addition, measurement of a function's services generates data of the most significant kind: It tells the unit how well its purpose and mission are being fulfilled.

4. Participation by the white collar group in the improvement process leads to greater innovation, ownership and ongoing capability.

Traditional attempts to improve white collar productivity have relied upon expertise from outside the group. Even where the expertise was relevant and helpful, significant opportunities often were not recognized by these outsiders, or implementation suffered from their dominant role.

In white collar environments, much of the work is specific to the organization's circumstances; the expertise, training, and judgment of the personnel is critical; the need to

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change and adapt to business circumstances is frequent and unpredictable. Clearly such contexts call for productivity thrusts that are driven by the units or functions themselves. Active involvement by all or many managers and employees was presumed to be critical in the Center's process.

5. The productivity improvement process must address *both* technical and social issues.

Nearly all of the many traditional programs and techniques employed in white collar productivity improvement tend to focus either on social or on technical issues. When the focus is purely social, morale or employee

Figure A
Pilots by Function

Company	Accounting & Finance	Customer Service	Engineering	Facilities Management	Marketing & Sales	Operations	MIS	Personnel/HRM	Research & Development	Total
ARCO	3						1		1	5
Dun & Bradstreet	1	1				1				3
General Dynamics	2		1	2		1				6
Johnson & Johnson	1				2		1		2	6
McDonnell Douglas	2		1	1			1	1		6
NASA	3		2			1			2	8
Northern Telecom							2	1		3
Ortho Pharmaceutical			1			1		1	2	5
Rockwell	1		4				1			6
TRW	1		2						2	5
Warner-Lambert			1		1		1			3
Total	14	1	12	3	3	4	7	3	9	56

Introduction

communication may improve, but the impact on the business remains uncertain. When the focus is technical, procedures or methods are streamlined, but working relationships and teamwork are neglected or, worse, impaired. In environments where the conduct of the work is highly dependent on the personal choices and motivation of the employees, there is a need to address both the structure of the services and the interpersonal and social factors that will make the structure successful.

These five assumptions formed the foundation for the American Productivity Center's new approach to white collar productivity. A proposal outlining the design and schedule, budget, Center resources and services, and sponsor participation and benefits was distributed to potential sponsors during the first and second quarters of 1983. By September, 1983, seven sponsors were confirmed; an additional six firms joined the project later. The 13 sponsors are:

Armco Inc.
Atlantic Richfield Co.
The Dun & Bradstreet Corp.
General Dynamics Corp.
Johnson & Johnson
McDonnell Douglas Corp.
Motorola Inc.
NASA
Northern Telecom Ltd.
Ortho Pharmaceutical Corp.
Rockwell International Corp.
TRW Inc.
Warner-Lambert Co.

The sponsors were requested to identify the functions or units in which the process and methodology could be piloted and, in turn, the key players who would lead the effort. Five criteria guided selection of the pilot groups:

- **Size:** A range of approximately 25-200 persons within a functional unit allows for application of the methodology and for the project to be accessible and visible to most of the unit's employees.
- **Complexity:** Multiple services and outputs may be included in a pilot group; each group or function would have a recognizable management team responsible for the entire pilot.
- **Potential:** There should be real potential for improvement derived from change within the group as well as from change in its working interactions, or interfaces, with other groups.
- **Climate:** Management should be receptive to change and to input from the workforce.
- **Business Impact:** A pilot group should provide services or outputs that are recognized as important to the business of the sponsor. Also, having completed the project, the group would likely serve as a credible model to other groups and functions.

With the above criteria in mind, potential pilot groups were approached and a total of 56 participated, repre-

senting nine functional areas and approximately 4,000 individual white collar workers in 11 of the 13 sponsoring companies. (See box.)

What is a pilot?

A pilot is a white collar work group that provides services or information within an organization, for example, an accounting department. It is within a pilot group that the white collar project methodology is implemented. Data collection in real-life, field situations is a major feature of the project. The pilots are intended to introduce productivity improvements to the organization and to provide answers to key business related questions. Pilot groups are situated to take advantage of new or modified methods and techniques. Caution is exercised to ensure that the pilot groups are not merely experiments or "guinea pigs" and that improvements are, in fact, realized.

(Armco participated by lending to the Center a research associate who acquired experience with the process. Motorola participated in the computer networks and project conferences.)

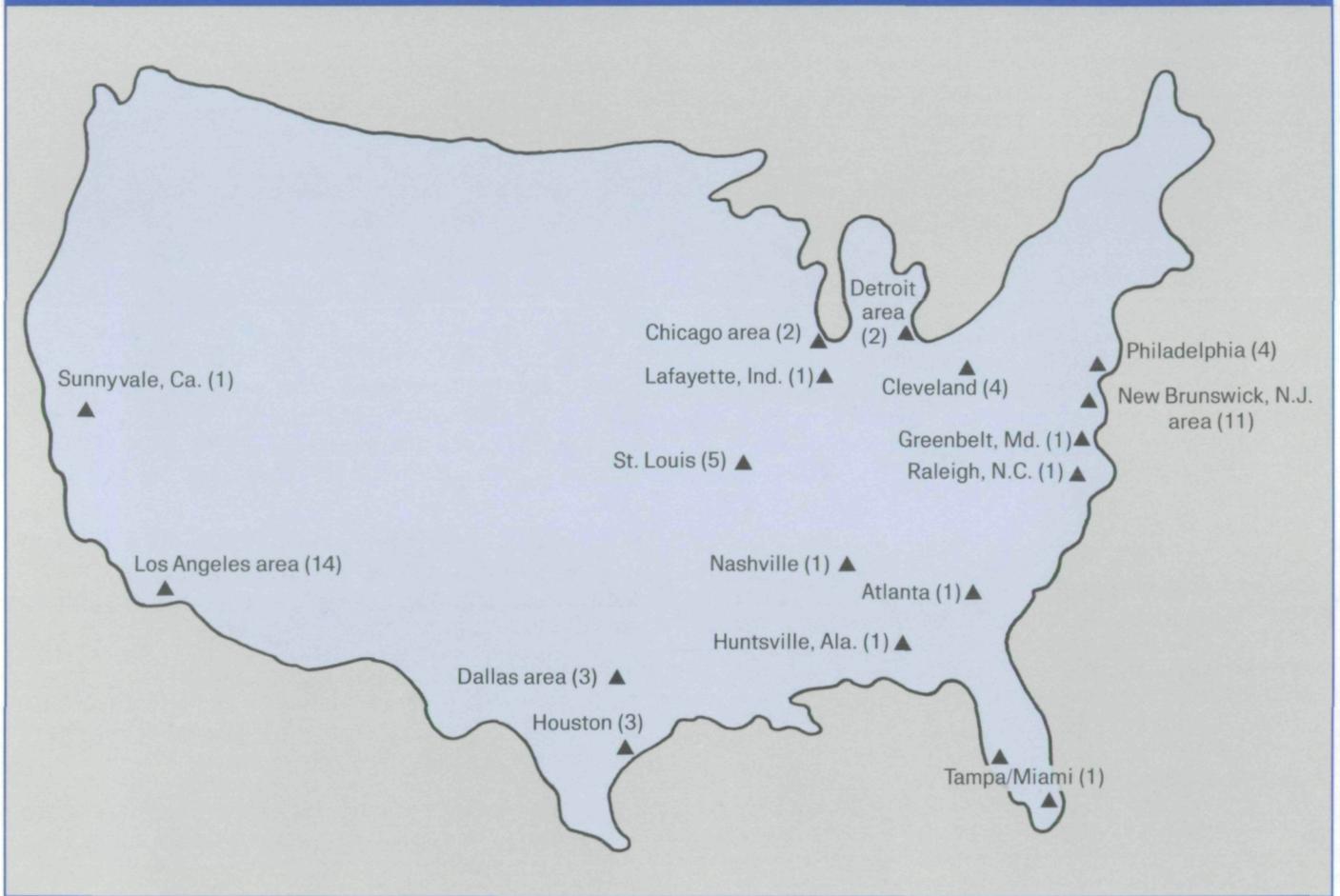
(See Figures A and B.)

The opportunity for participation by many, if not all, members of a pilot was designed into the methodology. In addition, several key roles were identified:

- **Liaison:** A senior manager or officer in each sponsoring firm to lead the firm's pilots. The liaison was also charged with planning the dissemination of the process beyond the two-year project. Finally, each liaison served on the project steering committee, which provided guidance to the overall project.
- **Coordinator:** A professional or manager to provide hands-on assistance to the pilot groups. The coordinator was often an internal consultant designated to support the liaison in transferring the methodology and findings to groups beyond and outside of the project.
- **Pilot Manager:** An aggressive manager or supervisor selected from within the pilot group to lead the process internally. The pilot manager assumed a hands-on role and worked closely with an internal task force to conduct each phase of the methodology.
- **Research Associate:** A representative of the American Productivity Center to work in close association with the coordinator, pilot manager, and the various ad hoc groups and teams within any one pilot. The research associate is expert in the methodology and provides guidance and assistance throughout the phases of each pilot.

Together, the four major roles may account for several persons within any sponsoring firm; they provide ongoing leadership, decision making authority, relevant expertise, and hands-on assistance.

Figure B
Pilots by location



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Project Developments

The project was developed around five major types of events:

1. Steering committee meetings and deliberations.
2. Training sessions for coordinators and pilot managers.
3. Pilot level improvements and follow-through with the methodology.
4. Computer conferences and networking.
5. Face-to-face conferences.

The schedule (see Figure C) shows the timing and duration of the major events from September, 1983 through August, 1985.

Steering committee meetings

At the onset of the project, the liaisons from each sponsoring organization met to review the project schedule, training needs, public communication about the project, and potential new sponsors. Throughout the project and at each conference the steering committee deliberated

on sponsor needs and project direction. Critical issues were:

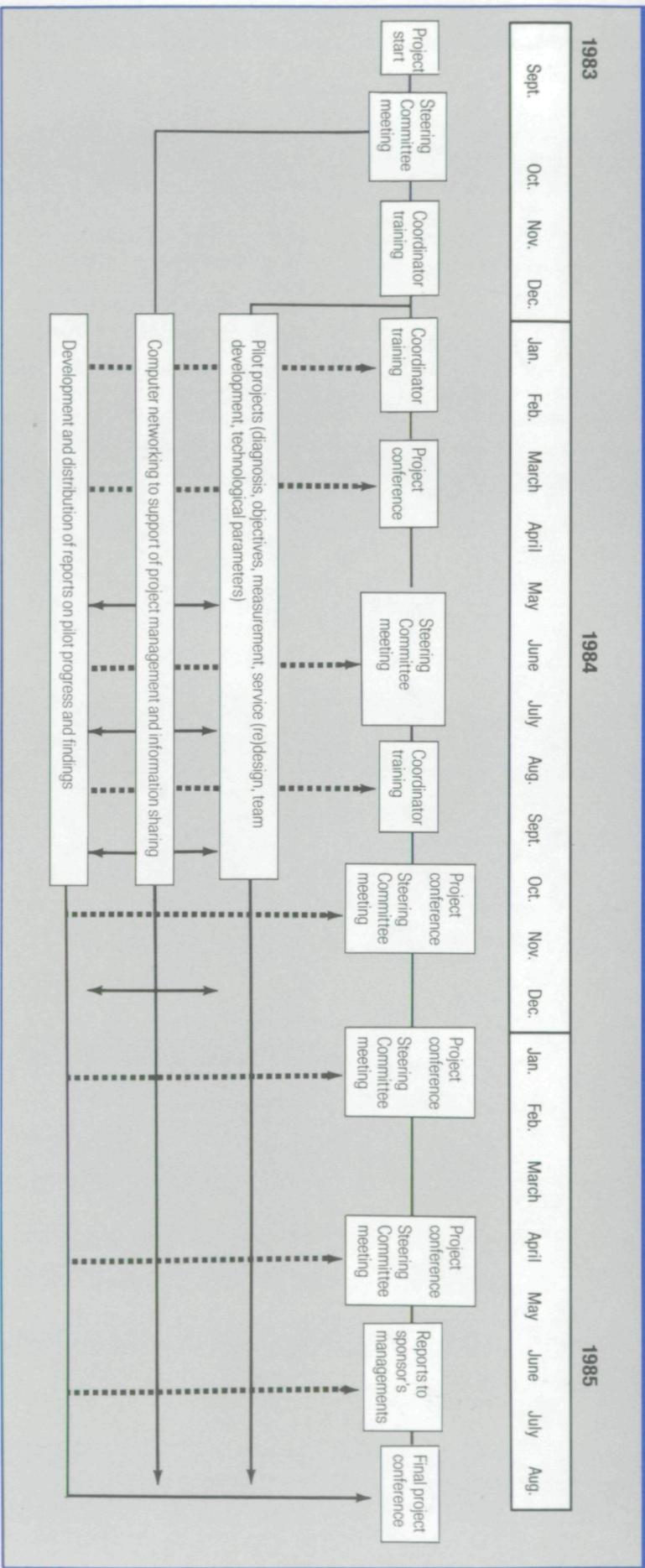
- Feedback to the Center on services to the pilot groups and the conduct of conferences.
- Transition toward self-sufficiency at the sponsor and pilot levels, leading to less dependence on the Center's research associates.
- Documentation of project developments and the subsequent distribution of information and research products.

Training sessions

Three major training sessions were conducted for pilot managers and coordinators. Approximately 125 pilot managers and coordinators learned:

- The project design (resources, schedule, key players, etc.).
- The six phase methodology.
- Computer networking and conferencing.

Figure C
White Collar Productivity Improvement: Major activities and key target dates



Project Developments

Pilot-level improvements

Through the training sessions, pilot managers and coordinators acquired a fundamental understanding of the methodology. They returned to their respective units and prepared the groups for implementation of the methodology.

Typically, sponsors' managements were then briefed and, frequently, a representative group of managers, supervisors, professionals, and support staff was identified as a task force or pilot-level steering committee. A major presentation on the project for the entire unit or function usually coincided with the scouting mission, the first visit to the pilot by one of seven Center research associates.

- *Scouting Mission* — In early visits, the research associate assisted the pilot manager and

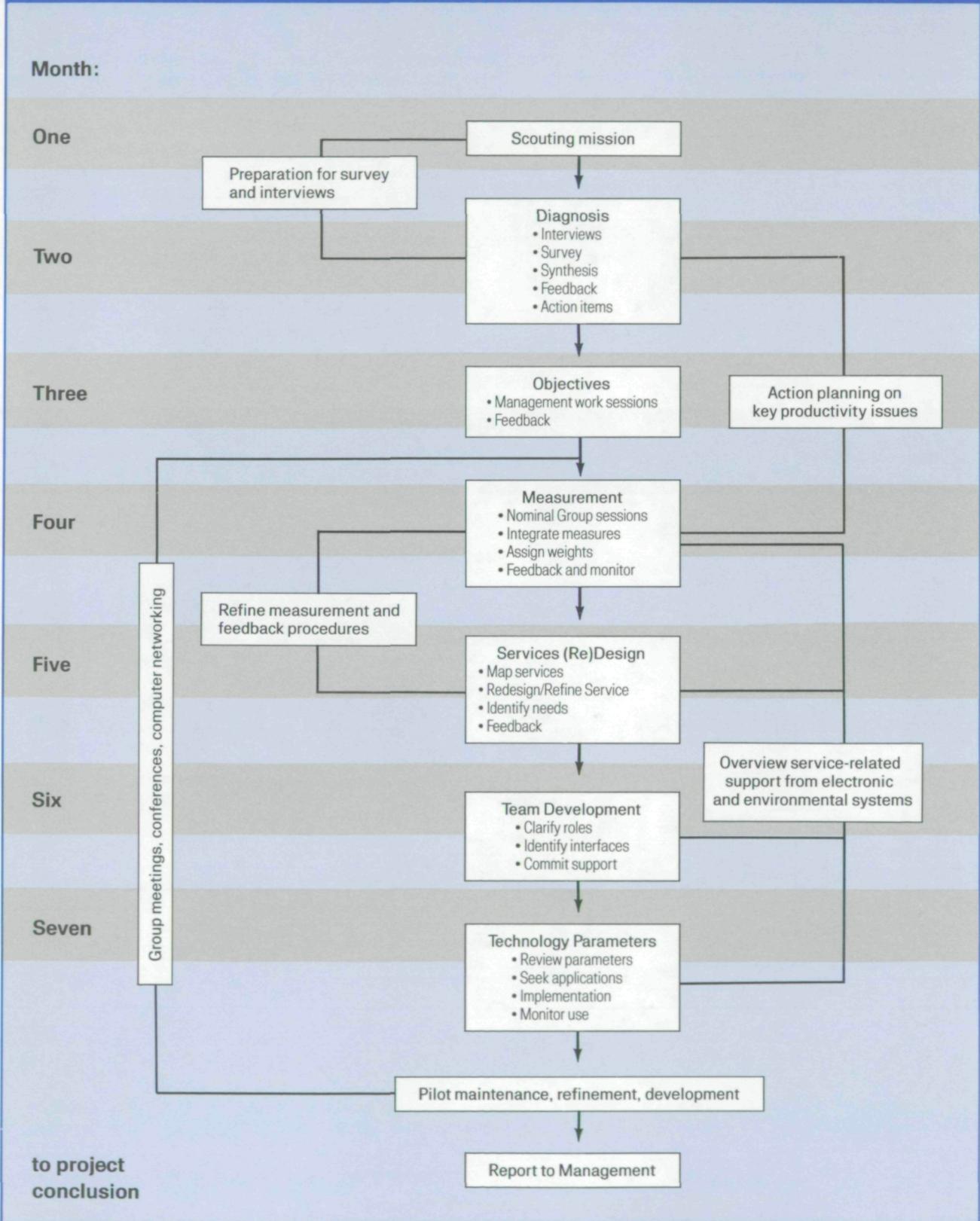
coordinator in presenting the project and methodology to the pilot group. This was usually accomplished in one day about three to four weeks before the first phase was undertaken. Presentations and subsequent discussions also enabled the pilot group to offer suggestions on the timing and approach, raise questions of job security, clarify management expectations, set up a task force/steering committee, and plan for diagnostic interviews and surveys.

Once these introductory steps were completed, pilot groups began working through the Center's six-phase methodology — tailoring each step to their unique needs and circumstances.

(See Figure D.)

Project Developments

Figure D
Monthly key pilot activities



Project Developments

1. **Diagnostic Phase** — The purpose of the first phase was to clarify and reach agreement on major services and outputs; evaluate several major productivity factors; and resolve obstacles to the improvement effort, such as morale problems or resource deficiencies.

Specifically, the focus of the diagnosis was on primary services or outputs, the unit's mission and objectives, its management practices, measurement methods, relevant resources and tools, and user/client interfaces. Typically, all members of the pilot group responded to a written survey. Next, a group representing a diagonal slice of 20 to 30 percent of pilot members was interviewed in two hour face-to-face sessions. Users of services or outputs from the pilot groups were also interviewed for their perceptions of support and ideas for potential improvements.

After the data were analyzed, findings were categorized into general observations, specific opportunities for improvement, and recommendations on how to proceed. All members of the pilot group attended presentations on the findings.

The pilot manager, coordinator, and research associate each devoted four to six days to this phase. Once the findings were fed back, ad hoc groups and the task force followed up on recommendations.

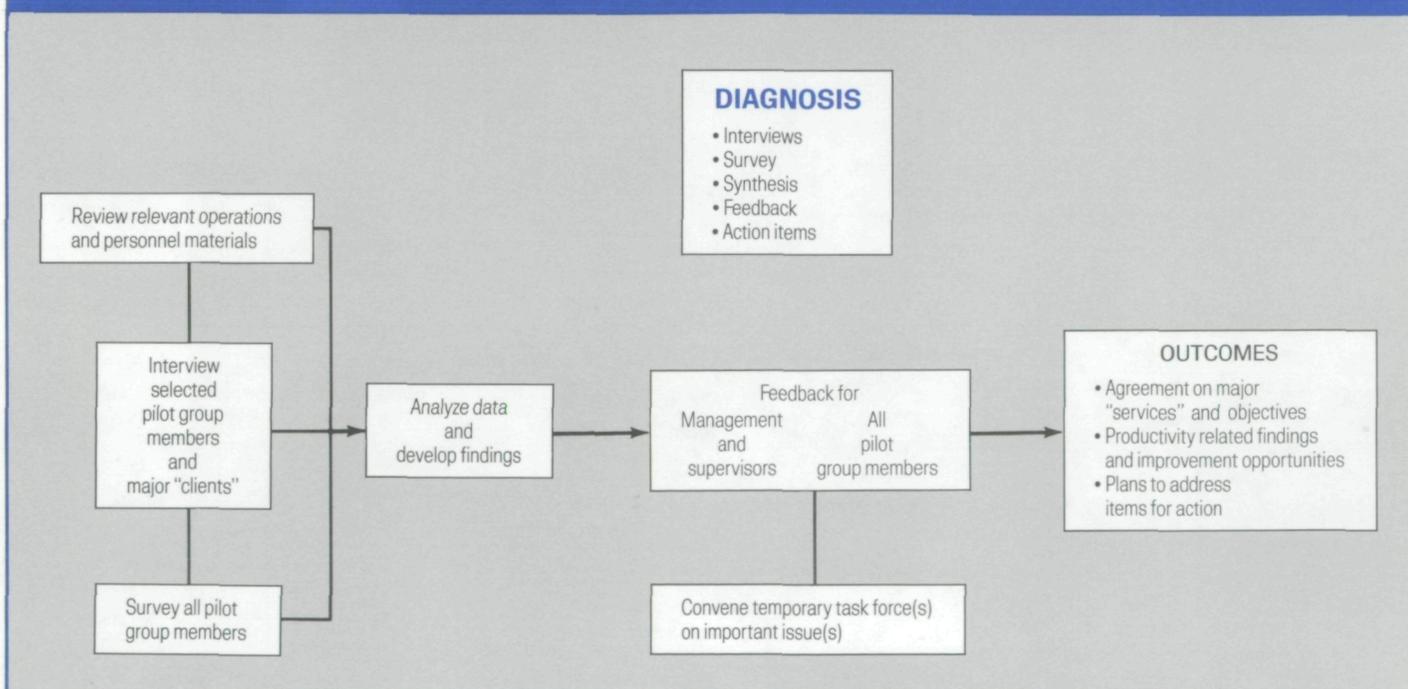
(See Figure 1.)

2. **Objectives Phase** — The second phase was intended for the development of objectives for each service or output — of expectations of quality and timeliness which took the user/client into primary consideration.

The "pilot team" — the pilot manager, coordinator, and research associate — worked closely with management to ensure that the pilot group's objectives fit with the overall strategic direction of the company, its vision for the future, and its client's/user's needs. The phase frequently required two to three days of discussion in several small group sessions. It resulted in a fresh perspective on the pilot's "business" and identification of major leverage points for productivity gains.

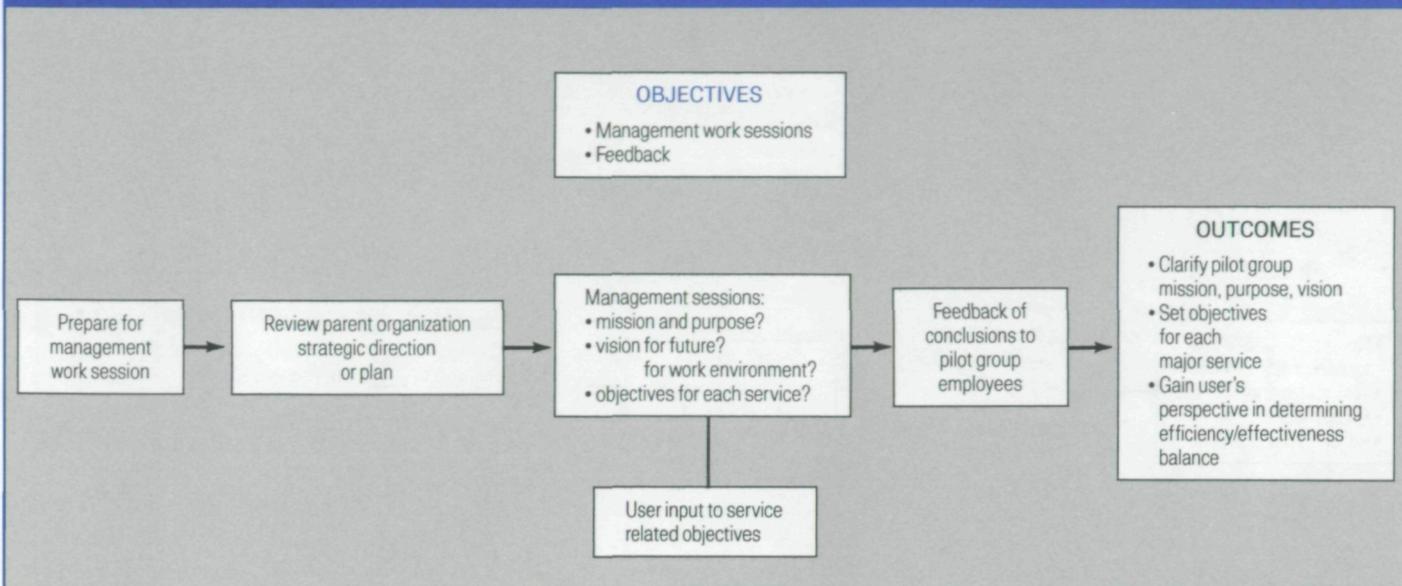
(See Figure 2.)

Figure 1
Pilot project phase 1



Project Developments

Figure 2
Pilot project phase 2



3. *Measurement Phase* — With objectives clearly stated, the pilot groups were in position to develop indicators of the effectiveness of their service and output. This phase was designed to result in measures reflecting quality, timeliness, and resource utilization.

In contrast to traditional approaches to measurement, however, which stress comparisons on a single criterion and are oriented toward reducing input, White Collar Productivity Improvement pilot groups were encouraged to develop comprehensive indicators of performance and productivity. The development process ensured ownership by the several persons responsible for the data. Pilots were further encouraged to monitor the measures over time for indications of opportunities to improve service development and delivery and to use the data constructively to resolve operational problems.

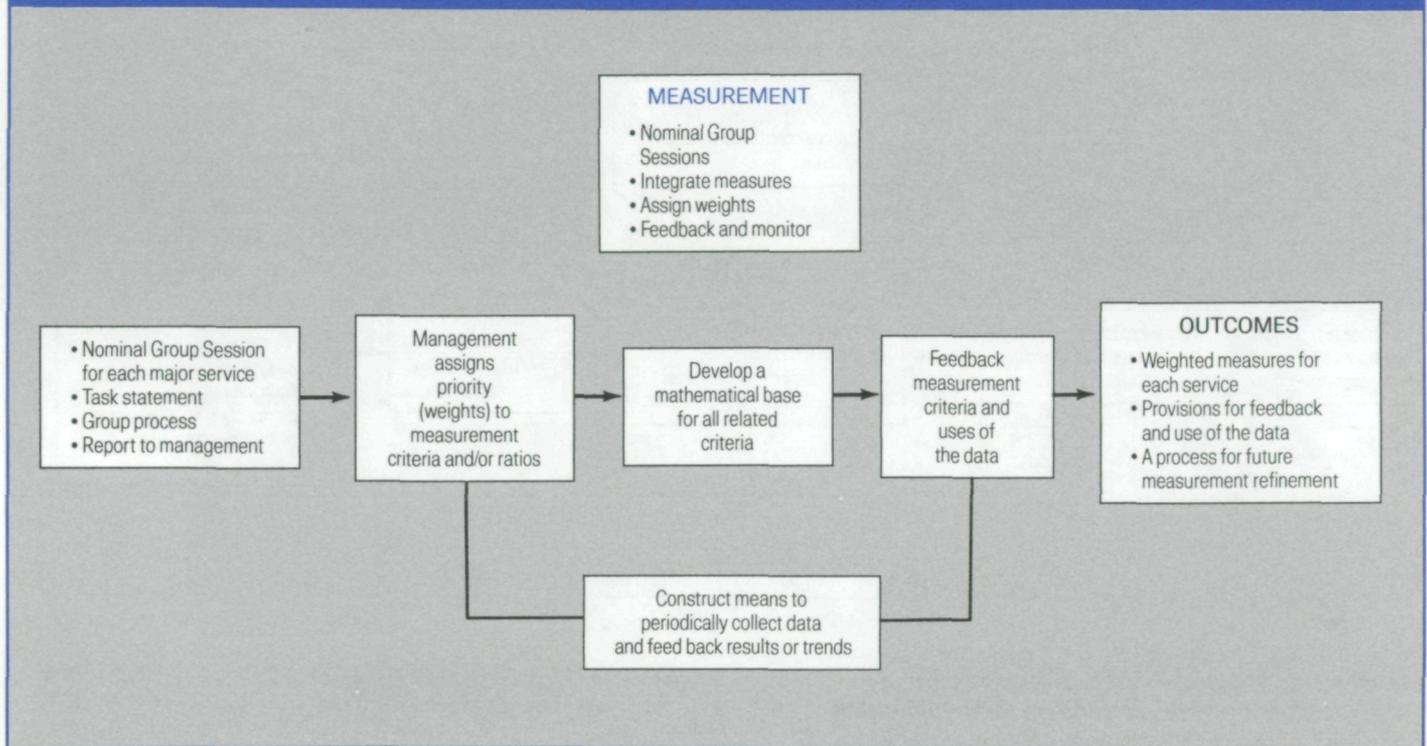
(See Figure E.)

Figure E
Measurement

Tradition	Desired
Single criterion	Multiple criteria
Limited input	Input from those responsible
Comparison with others	Comparison over time
Oriented toward reducing input	Oriented toward improving output
Punitive approach	Problem-solving, coaching

Project Developments

Figure 3
Pilot project phase 3



Representatives from each of the pilot's service groups followed a procedure, based on brainstorming, to develop their unique productivity measures. This procedure produced a group of indicators that were refined and prioritized, or weighted, by appropriate managers. In addition, provisions were made for the collection, feedback, and interpretation of the data. Development of these basic criteria typically required three to five half-day sessions for each of the various service/output groups.

(See Figure 3.)

4. *Service (Re)Design Phase* — In the course of developing or analyzing measurement data, most service groups recognized opportunities for significant productivity improvement. The service (re)design phase afforded resources and procedures for redesigning the development and/or delivery of a service. In some instances, it led to explicit, formal design of a heretofore implicit, informal service structure.

Pilot groups were encouraged to look beyond the organization chart to create a structure that would ensure the best fit between resources and user/client needs. In

Project Developments

other words, they were encouraged to challenge matters of turf, to reevaluate individual assignments and responsibilities, and to investigate major changes in the way they delivered their services. The groups produced graphic maps of their services, explored means to improvement, and planned their own changes. The groups responsible for the service conducted the phase, with assistance from the pilot team. The Service (Re)Design phase usually required a total of three to five days in sessions of three to four hours each.

(See Figure 4.)

5. **Team Development Phase** — Where steps in the production of services were changed or created, it was important to promote mutual support and cooperation among the group members, to facilitate the sharing of resources, and to identify common goals and responsibilities. In the team development phase, pilot members' individual roles were clarified, points of interface with other work units or functions were identified, and back-up procedures were developed.

Representatives from each service area participated in the process; they attempted to ensure good working

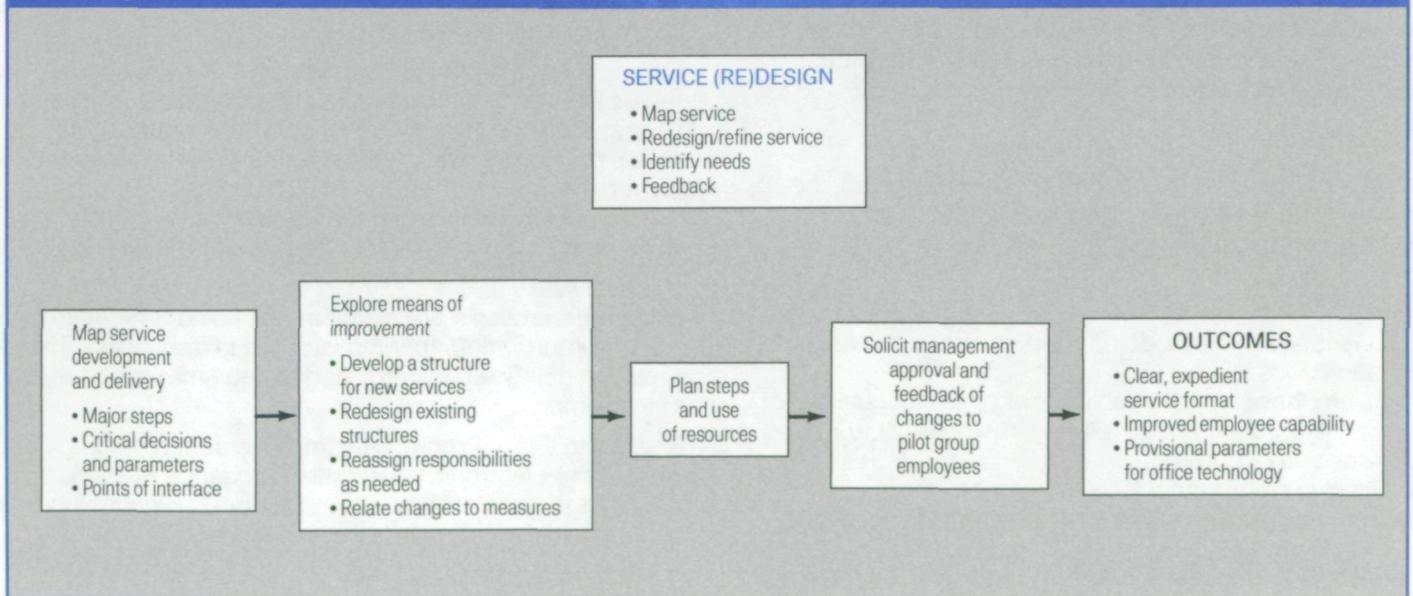
relationships in support of the service or output design. Three to four days were required for this phase, with any one service group typically active for one or two sessions.

(See Figure 5.)

6. **Technology Parameters Phase** — The final phase focused on potential applications of relevant technology, such as computer mediated systems or office environmental designs. The intent was to link the technology with important features of services/ outputs, to build employees' acceptance of the technology, and to improve upon the groups' overall capabilities.

Needs for technology surfaced while services were being redesigned. Anticipating this, the final phase was devoted to translating those needs into parameters for the implementation of electronic systems and work stations. Not all pilot groups were prepared to invest in new forms of technology. In those that did, task forces comprised of service/output representatives, in-house specialists, and Center staff worked to integrate the new technology with the newly improved service structures.

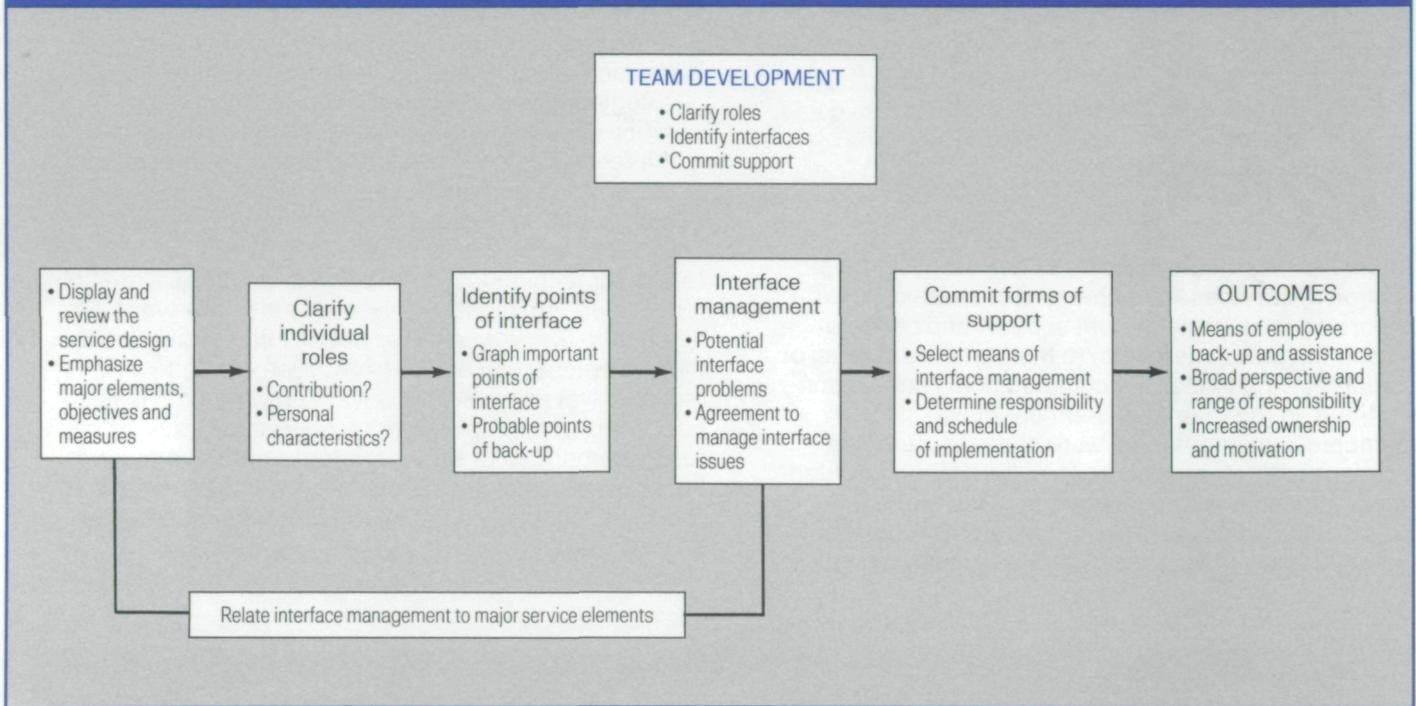
Figure 4
Pilot project phase 4



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Project Developments

Figure 5
Pilot project phase 5



Development of the parameters was completed in four to six days of task force effort; time required for implementation varied widely from pilot to pilot.

(See Figure 6.)

As each phase of the methodology was completed, the pilot manager was encouraged to communicate the developments to all pilot employees, to monitor the changes, and to make refinements or revisions as appropriate.

All phases of the methodology had several common characteristics:

- An emphasis on the functional or operational thrust of the pilot group, that is, relating its work to actual services and/or outputs;
- Specific steps with related outcomes;
- Input and participation from persons at several levels and positions;
- Feedback to the functional group or work unit at large; and
- Leadership and direction from the pilot manager and task force, with additional guidance and support provided by the liaison, coordinator, and Center staff.

Computer Networking

One major goal of the project was to speed developments and spread knowledge across company functional lines and even corporate and industry boundaries. To do so, the Center used the medium for communication proven effective in 1983, when 175 business, labor, and academic leaders "signed on" across the nation to develop recommendations for the White House Conference on Productivity.

Computer networks are asynchronous electronic links for general information, training, and group discussion. They are an ongoing service provided by the American Productivity Center.

The White Collar Productivity Improvement project tapped the Electronic Information Exchange System, (EIES) based at the New Jersey Institute of Technology, to create four types of computer networks:

- *Project management network* — A forum for all persons active in the project. The network served as a general bulletin board and for open discussion on project-related topics.
- *Functional discussions* — among persons of similar background and responsibility. Conferences were

conducted by and for engineering, research and development, information services, and accounting functions. Participants exchanged experiences and ideas about application of the methodology in their particular environment.

- *Special interest networks* — established for the exchange of information among groups with a unique interest or commonality, such as the steering committee, Center staff, pilot managers, and coordinators within a sponsor.

Approximately 90 persons participated in the networks, using home, office, or portable terminals and modems to share ideas, questions, and project information. Surveys and brief tutorials also were conducted through the computers.

These computer networks proved to be invaluable to both pilot progress and overall project management. Participants across the U.S. and Canada "signed on" to their respective networks, creating a truly continental web of white collar productivity improvement activity. Liaisons received ten PRO 350 computers donated by Digital Equipment Corp. for the duration of the project. They

used the computers for developing documents and decision-making support, as well as for networking.

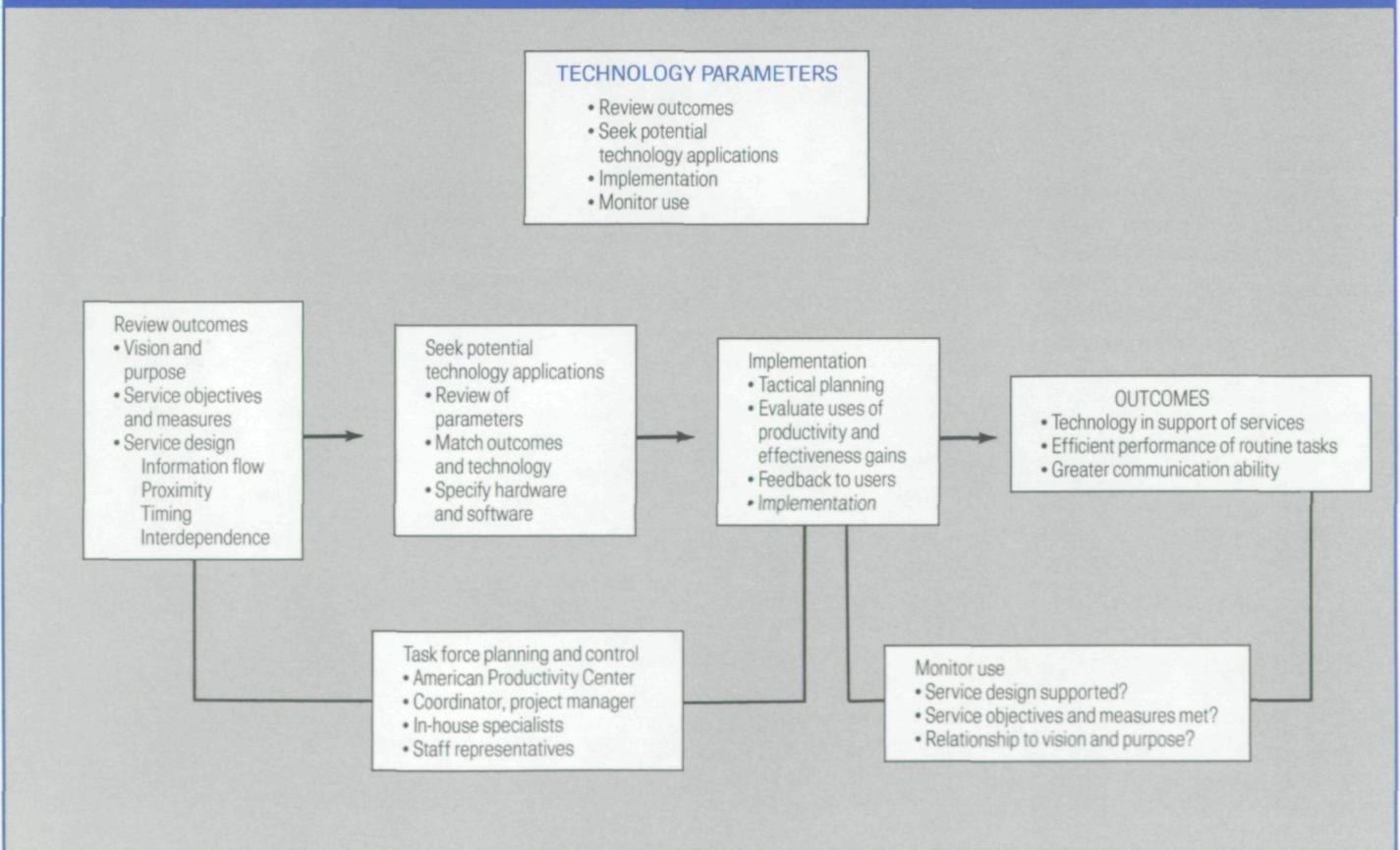
Face-to-Face Conferences

Pilot managers, coordinators, and liaisons also convened for six conventional face-to-face conferences at the American Productivity Center in Houston. These were designed to update pilot activities, report in-progress developments of the methodology, and provide for discussions among functional groups.

Guest speakers at these gatherings added an extra dimension to the project. They represented organizations such as the Office Technology Research Group, Massachusetts Institute of Technology, Price Waterhouse, Honeywell Aerospace Productivity and Quality Center, the University of Minnesota, Strategic Planning Institute, Miami University, and Arizona State University, as well as the American Productivity Center.

In addition, the conferences gave pilot groups within any one sponsoring firm a place and time to review and compare progress and to plan for maintenance of their efforts beyond August, 1985, the formal end of the project.

Figure 6
Pilot project phase 6



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Results

As has been noted, the project was designed to generate noticeable changes at each phase of the methodology. Objectives emerged from the objectives phase; productivity measures from the measurement phase, for example. Successful completion of all or most of the phases would produce a significant overall change in a pilot group's productivity and capability.

Furthermore, the multisponsor nature of the project provided sufficient data and observations for general conclusions about white collar work and ongoing use of the methodology.

Success among the 56 pilot groups varied widely. Outcomes depended upon the extent to which a pilot group adhered to the intent of the methodology. Other determinants of success were the level of management commitment, the dedication of coordinators or other productivity champions, representation on the pilot steering groups, and the extent of participation in the project by pilot group employees.

(See Figure F.)

In most pilots, the phase-by-phase and overall outcomes could be characterized either as new management practices or as new operational disciplines.

1. *Diagnosis*: The diagnostic phase produced three major outcomes among the more successful pilots:

- *Clarification and agreement on outputs and services* — Most managers and employees acquired a fresh perspective by defining their primary outputs and services.

Interviews with managers within a function typically revealed a lack of clarity, even disagreement, about major outputs and services. Often, their primary concern was with maintaining the numerous activities within any subunit.

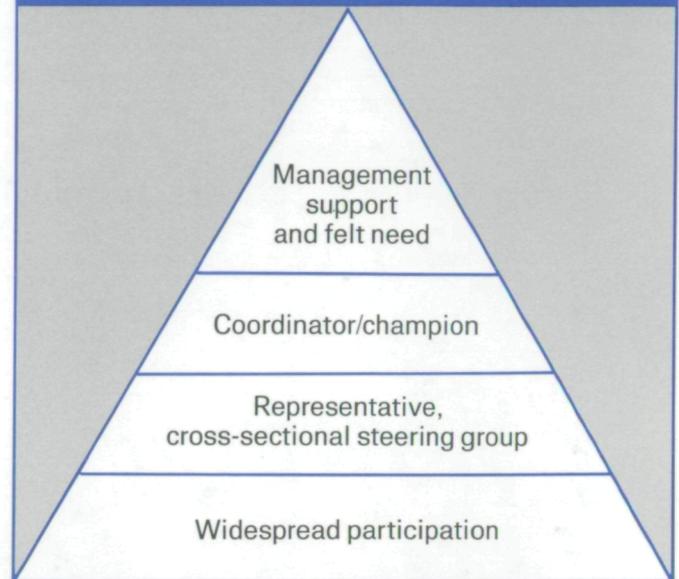
In response to findings from the diagnosis phase, one engineering group reorganized to carry out their service responsibilities better. In a personnel group, employee selection processes were clarified to emphasize the importance of support from compensation and security areas. The pilot realized employee selection could be better managed as a departmental service than as the responsibility of a few persons in the selection unit.

- *Definition of user expectations and needs* — Pilot groups developed clear definitions of user/client needs and expectations regarding their outputs or services.

At the outset of the project, few groups had insight into how well they met or would continue to meet users' needs, and these relied merely on personal judgment and occasional feedback — typically complaints.

In the diagnosis phase, several pilot groups took an aggressive approach to this problem. They interviewed users. Some users were surveyed and included in pilot

Figure F
Elements of a successful pilot



problem-solving discussions. One research group in a pharmaceutical firm even drew customers into their product development process. An auditing function influenced the future direction of its activity by soliciting suggestions and ideas on past and current abilities; the group was encouraged to include broader operational issues in its purview.

- *Identification of leverage points for productivity gains* — Surveys and interviews within the pilots revealed opportunities for improvement on several important, generally accepted productivity leverage factors.

For example, many pilot groups were not accustomed to providing operational or strategic information to employees. Further progress in the pilot depended on sharing such data. The group had to agree and commit resources to developing and disseminating the information. Other groups discovered specific weaknesses in morale, inadequate resources, or a workforce inexperienced with providing input and ideas. Their plans typically called for clarification of the weakness or opportunity; definition of the desired condition; designation of steps to reach that condition; assignment of responsibility for each step, including milestones and target dates; and provision of needed resources.

While the subsequent phases addressed some of these factors, others were examined and addressed through a task force or steering committee.

2. *Objectives* — The objectives phase enabled the pilot managers to set forth the future direction of the functional area. The majority of the pilots had determined the tactical needs of the future, although most planning revolved around the past level of activity or

Results

changes in the budget. The objectives phase resulted in these outcomes:

- *Clarification of mission and purpose* — Many functions appeared to pursue “business as usual” despite strategic changes on the part of the corporation or agency. Managers viewed the future as the opportunity to do more or less of the same depending on resources. In many instances, the mission or purpose was clear among management but was not communicated downward.

The objectives phase enabled the managers within a pilot to clarify and align their mission and purpose with that of the parent organization. An information services function declared its mission was to “...provide leadership in the effective use of data processing resources; ensure responsible management of information in support of business operations for the corporate organization; and institute, administer, and monitor processes to ensure client’s system activities are within architectural guidelines and corporate management policies,” for example. Above all, the function sought to be proactive in knowing clients’ business climate and recognizing their computing needs.

- *A vision for achieving the mission and purpose* — Few, if any, pilot groups had discussed their vision for the future or the environment needed to reach it. The objectives phase allowed the management team or, at least, senior managers to propose the kind of working environment they desired and the practices required to lead and support the more expensive resource — the employees.

One pilot determined that these characteristics were important to its work environment:

- Well defined goals;
- Team work;
- Good morale;
- Communication, recognition and management support; and
- Leadership/management skills.

Another group defined its vision as “the development of an organization with superior technical and management competence that will be recognized and utilized by our (corporate) customer, and to provide an environment which will foster professional and personal growth and satisfaction by its members.”

- *Objectives tied to the development and delivery of services* — With the strategic direction and vision before the pilot groups, the managers were able to focus on the more operational nature of the function — the services. Objectives set priorities in conjunction with strategic plans and for the indefinite future. They tended to relate more directly to operations than did strategic goals, and they tended to be broader than a manager’s personal objectives.

For example, one group’s service was to “to provide on-line, real time and batch computing power to clients and customers.” It became this group’s objective to:

- Provide processing capacity and maintain 98 percent service level 24 hours per day and 96 percent at prime time (7 am to 5 pm).
- Provide state-of-the-art solutions to problems within group standards.
- Develop internal staff capabilities.
- Meet cost improvement targets.

For another pilot, whose service was “the analysis and interpretation of high frequency data from laboratory component tests, engine hot fire tests, and flights,” these objectives were determined:

- Support tests in a timely manner with minimum hardware risk and the prevention of failures.
- Verify analyses.
- Clear communication of the results and requirements to and from other organizations.
- Evaluate design changes.
- Determine a components environment under different engine operating conditions for analytical and test life verification.

3. *Measures* — Measurement was expected to be the most difficult and emotionally laden phase of the methodology. Nearly all pilot groups had some experience with productivity measures, and most had found the experiences to be either disappointing or less rewarding than expected. The measurement phase was intentionally positioned after services and objectives were identified so pilots could determine *what* was important to measure and how to *use* the data meaningfully.

Measures were designed to reflect the timeliness, quality, and use of resources for the pilot services. Consequently, the ratios developed are understandable in view of a particular service and related objectives. In an information service pilot, for example, an objective was to “develop and maintain computer applications to meet business needs.” The related measures:

$$\frac{\text{Number of milestones met}}{\text{Number of milestones set}}$$

$$\frac{\text{Production support time required during first year}}{\text{Development time required}}$$

$$\frac{\text{Actual time spent on projects}}{\text{Total project hours allocated}}$$

$$\frac{\text{Hours spent per project}}{\text{Total hours available}}$$

$$\frac{\text{Total budgeted \$} - \text{Total actual \$}}{\text{Number of projects accomplished}}$$

Results

An engineering function sought to improve the level of this service: "In-house component design of electrical environmental and armament systems." The related measures:

Percent of items (drawings, changes) released on schedule

$$\frac{\text{Number of released items}}{\text{Total department manhours}}$$

$$\frac{\text{Number of scheduled and released changes}}{\text{Total number of released changes}}$$

User satisfaction survey

In a final example, drawn from a research environment, the objective was "completely assembled, accurate, reviewed and signed report by the (PERT) target date." The measures:

- Number of trips to typist before release to division director.
- Number of quality assurance discrepancies, omissions, or errors.
- Percent of report preparation activities completed within specified time.
- Percent of reports published by target date (set at protocol review meeting).

The measurement phase was undertaken by pilot groups across the spectrum of functions within the project. The greatest successes were realized in research, engineering, finance and accounting, information services, and general administration/operations functions. At the close of the project, the groups continued to monitor their data and undertake revisions as appropriate.

4. Service (Re)Design — Diagnosis, objectives and measures typically provided ideas concerning the design or redesign of a pilot group's services.

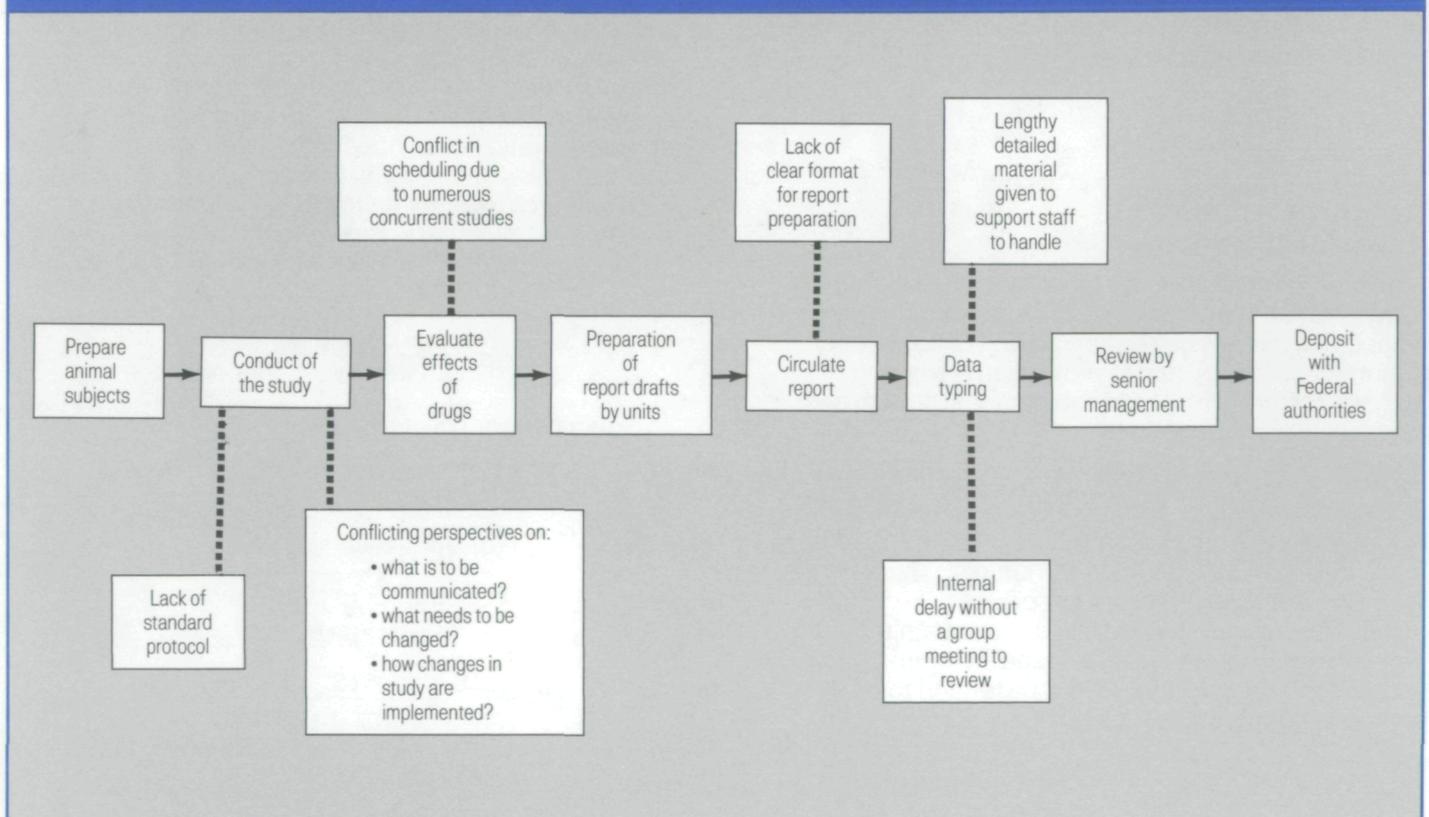
Opportunities for improvement in either the development or the delivery of a service surfaced. For many services, the design was placed on paper for the first time. Overall, the phase resulted in:

- A clear, agreed upon approach to service(s) development and delivery.
- Services that are consistent with objectives and measures.
- Improved capability to identify improvements and execute changes.
- Provisional parameters for office technology.

In the redesign phase, a research and development pilot group constructed a visual representation of their main service and identified its major weaknesses. The discussions helped to inform recently hired employees and to direct problem-solving within the group. Plans for

Figure G

Research study design and final report



Results

action were formed around each of the problems associated with the service, research studies, and preparation of final reports.

(See Figure G.)

These changes improved coordination among internal units, made provisions to ensure better operational controls, and reduced time for an "average study" from 13 months to 9.7 months.

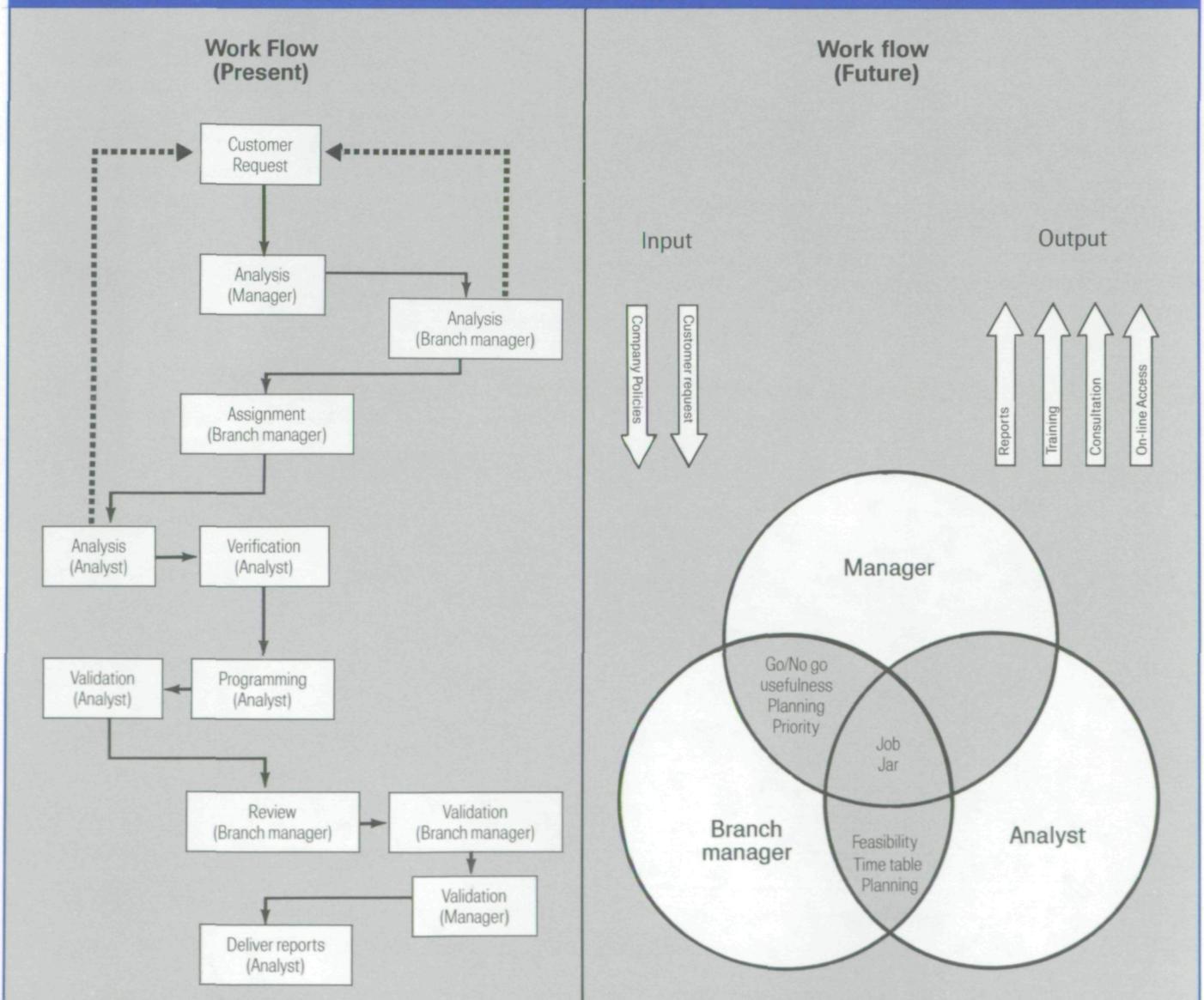
In another example, an engineering group addressed one of its major areas of service and output, "requests for engineering services" (RES). The pilot learned that excessive amounts of time were spent in preparation of work parameters, contractor bids, and review of the proposal with the requesting client. A thorough mapping of this process led to plans for reducing the awkwardness of the system and the time it required. Time and cost

estimates were given early in the request process — often precluding further work. Participating units, such as accounting, were included earlier in the process and, consequently, the overall RES time was significantly shortened.

Finally, a personnel group identified means by which records updates and inquiries could be more expedient and responsive to those who needed the services. The group configured computer hardware and software to allow users to investigate and update personnel files directly. The pilot group maintains the integrity of the system and the confidentiality of privileged data. Major cost savings are anticipated as employees in this group are reassigned to more fruitful endeavors.

(See Figure H.)

Figure H
Human Resource division



Results

5. *Team Development* — The team development phase emphasized a need for smooth working relationships among service team members and at their interfaces with other units or functional groups. Particularly in the wake of major redesign, service groups were encouraged to consider person-to-person hand-offs and backups, bottlenecks, and levels of responsibility.

Pilot groups found means of splitting responsibilities between key players, identifying several persons with product approval authority, rotating leadership on decisional teams, and integrating downstream and upstream personnel. One group of middle managers agreed upon these communication/integration principles, for example:

- Openness — no game playing.
- Timeliness — bring issues to the table when they arise.
- Open-mindedness — recognize the other's point of view.
- Cooperation — in the fullest sense.
- Analyze before forming conclusions.
- Active participation, no holding back.
- Focus on the common goal.
- Communicate decisions immediately.

The managers rely upon the principles frequently and remind each other of the value of their application.

6. *Technology Parameters* — Suggestions for technology were purposefully placed at the end of the methodology. Electronic systems and office design were viewed as yet more tools in the improvement of pilot group productivity; the previous phases covered the structural and social issues.

Many groups were unable to utilize the phase fully because of limited funds or existing systems. In those pilots that did acquire new technology, three outcomes were most apparent:

- Technology directly in support of service.
- Efficient performance of routine tasks.
- Greater communication ability.

An information services group that deals directly with clients in the marketplace settled on technology that increases efficiency and client interface, for example. Address labels are automatically sorted at the mainframe computer to reduce redundancies. Another sort, this time by customer characteristics and needs, is designed to focus marketing efforts and minimize complaints about misdirected marketing.

A research group has placed marketing, manufacturing, sales, and customers on a common system of product development and refinement. The system will encourage timely updates from all of the interested parties.

A third example is drawn from an engineering group that did not have the means of tracking project development or responsiveness to user needs. Personal, interacting computers enabled project tracking and accurate monitoring of service measures.

In the several groups that addressed technology parameters, further documentation is required to demonstrate that the work stations and computer-mediated systems have significantly augmented their services. Fortunately, the measures of service productivity created in earlier phases of the White Collar Productivity Improvement project will provide evidence regarding the impact of technology.

Results

Results by pilots

The results within the several pilot groups have varied depending upon the opportunity for improvement, allocation of resources, and follow-through on the methodology. Four results are most common:

- Operational rigor resulting from a service orientation.
- Improvements in capability and resource control.
- Improved morale and motivation.
- Internal ability to improve.

Over time many of the pilot groups became engrossed in the day-to-day activities of their functional responsibilities. New and more elaborate procedures were continually devised to account for troublesome exceptions. Ultimately, procedures, rules, and manuals determined the extent to which the function operated rigorously. In many areas, the function learned to view itself as a policy monitoring mechanism rather than as a service or support group. Responsibility to the discipline replaced support to the operating manager.

Several pilot groups have benefited by emphasizing the degree to which the user/client interests should, instead, be promoted.

An engineering pilot reduced delay and bureaucracy for company clients. A purchasing group decreased the cost and difficulty of its operations. A research group improved its interfaces with marketing, sales, and manufacturing. And an information services pilot improved internal efficiency and ease of access by clients through a shared database.

Second, the process resulted in increased functional capability and control of resources — including costs. The emphasis on improved effectiveness encouraged each group to improve services with *given* resources. During the project, few groups added resources; most

maintained their resource allocation; and a few experienced budget cuts. Reductions in the time and resources required were primarily due to changes in the approach to the work. Unimportant activities were eliminated and inefficient procedures were refined and automated. In short, a thorough examination of the effectiveness of pilot services paved the way to service efficiency and cost effectiveness.

Third, morale and motivation were frequently low within the groups selected for participation. Inspiration waned because of middle management suspicion and a sense of hopelessness associated with previous, unsuccessful productivity programs. Soliciting input from all pilot group members, engaging numerous personnel in problem-solving and improvements, and focusing on large scale matters of effectiveness lent credibility to the process and methodology. Support staff and professionals persisted, despite reluctant managements, with desired changes in procedures and business practices. Changes in capital allocation procedures, approval forms, and project decisions were driven by impetus from the the pilot group employees.

Finally, the coordinators and pilot managers for the more successful pilots have learned the methodology and continue to apply it as needed. Researchers, engineers, accountants, salespersons, programmers, and personnel specialists have learned to conduct interviews and problem-solving sessions. They have continued to utilize group techniques. And they recognize the key elements in designing an effective service with team support and the appropriate technology. Once the process has been experienced successfully, the methods and tools will continue to be utilized; examples already exist across the various functions as the pilot groups seek to maintain their productivity improvements.

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Research Products

Six major products in addition to this summary were derived from the project. These products were approved by the steering committee and developed with input from the coordinators, pilot managers, and liaisons.

- Case histories
- Graphic models and key factors
- Survey data and conclusions
- White papers/briefs
- Change issues
- Pilot methodology

The case histories document major developments within pilots where much has been learned. Each case describes the background of the project group, important steps, major players, results, and lessons learned. The cases have been drawn from the spectrum of functional areas and the various sponsoring organizations. They provide examples of the methodology in action in a broad range of circumstances.

Graphic models and descriptions succinctly summarize important issues or dynamics of the productivity improvement effort. The models depict the "efficiency-effectiveness contrast," "characteristics of readiness," "phases of change," "elements of a successful pilot," "traditional versus desired measurement approaches," and other similar concerns. They can be used by pilot managers and coordinators to continue to review the methodology and to present it to others.

Similarly, "key factors" highlight insights on the "business" of the various functional areas. Working groups of engineers, scientists, accountants, information specialists, and others identified factors which, if properly managed, would "leverage" the capability and productivity of the function. Key factors were developed for information services, research and development, engineering, and finance functions. Some examples:

- The ability to expedite routine features of projects and studies.
- Proficiency in scale-up from research parameters to manufacturing specifications.
- Provisions for long-term product/service refinement.
- Common data bases with users and contributing functions.
- Internal structure which promotes and supports the development and delivery of services.

Two major surveys were distributed on-line via the computer networks established for the project. The first, which raised a number of questions related to change, became the foundation for a major research report on "Change Issues" in white collar productivity. The second survey addressed investments in resources within a white collar context. Representatives from sponsoring organizations were requested to gather information on equipment (personal computers, telecommunication devices, word processors, etc.); training and consulting; work stations and furniture; and facilities and environment.

A third survey was utilized within the diagnostic phase of each pilot group. The survey solicited input from all persons within a pilot — nearly 4,000 persons in all. The data was analyzed in aggregate and by functional group. Conclusions relate to the total population within the study as well as to specific functional groups.

Several white papers or "briefs" were prepared on topics of particular interest:

- Measurement in a white collar environment.
- The role of management in initiating and supporting a white collar productivity effort.
- The improvement process — from a consulting perspective.
- The service versus activity orientation in white collar groups.
- Diagnosing and assessing the white collar environment.
- Environmental design as related to white collar productivity.

The papers are based primarily on experiences within the pilot groups. They propose practical approaches to each topic.

Changes in methods and orientation were central to the project. Pilot managers and coordinators and the Center's research associates collaborated to encourage and lead the changes within the pilot groups. The "Change Issues" summary reflects their various viewpoints about management support, employment security, time and financial commitments, leadership, relevant skills, obstacles to improvement, and related strategies. The majority of pilots and all sponsors with active groups are represented in the summary. The groups represented were distributed over all functional areas.

Finally, the pilot methodology has been continually revised to the last month of the project. The original phases remain, but the steps have been considerably improved. The description of the methodology includes a consistent format for each phase:

- Purpose
- Steps
- Key players
- Outcomes
- Supplementary video aid
- Facilitation guidelines
- References/Exercises

The coordinator or pilot manager will find the description helpful as a guide to "best practice" of the methodology, and for its numerous supporting or alternative exercises, background readings, and visual aids.

(The six research products and additional copies of this White Collar Productivity Improvement Project Summary are available through the American Productivity Center.)

Insights and Observations

With 56 pilot groups in 11 sponsoring companies working for two years, the opportunities for learning about white collar productivity improvement have been great.

At the pilot group level, pilot managers and employees learned methods to improve their performance. Sponsor coordinators learned with the Center's research associates how best to facilitate this methodology and to transfer their expertise among additional pilots.

A review of the project overall leads to eight general observations about white collar productivity improvement:

1. White collar productivity improvement is founded on basic issues of vision, orientation, and management practices.

Productivity efforts — specifically in white collar contexts — are frequently preoccupied with the methodology or technique to be employed. Much attention is directed to the specific steps and to the time and resources required. The concern is understandable; good intentions are not enough to overcome an inappropriate or weak approach. However, several basic issues should be considered before the steps of any methodology are initiated, and they should be revisited as the effort proceeds:

- *Management style and skills* — Are upper and middle managers inclined and able to advise and facilitate discussions and problem solving among persons who report to them? Also, does the organization value and develop operational skills?

Many managers are limited to an ability to monitor and control; their behavior will restrict brainstorming, fresh views, and personal risk taking. Furthermore, white collar functions typically promote their better professionals, and leadership is often closely associated with advanced degrees and special distinctions. However, expertise in control of a discipline or science does not ensure operational insight or skills. The manager may enjoy respect from colleagues in the profession, while at the firm, operations and personnel are suffering.

- *Change orientation* — Is the function primarily interested in constructive, significant change?

Productivity efforts are sometimes embraced for political reasons or as experiments. In either case, there is little assurance that proposed changes will be given full attention — or that proposals for change will even surface. Yet few operations are so well honed that a fresh look at the business is not warranted.

- *Service perspective* — Does the organization have a strong interest in providing timely, high-quality support to clients or users? Is there evidence (measures, surveys, joint councils, etc.) of their interest?

Many functions assess their effectiveness by their levels of activity or from user/client complaints. Few organizations have good measures of effectiveness already in place. The *desire* to assess and improve service levels should extend well beyond lip service.

- *Strategic direction* — Is the function clearly aligned with and supportive of the parent organization's strategic direction?

White collar functions are often reluctant to engage in strategic planning. Viewing themselves as the "tail on the dog," they are reactive and fail to take a lead in shaping their destiny. Many find it difficult to discover, in the direction of the larger organization, implications for their own plans and tactics. Yet this vision of what the function could be, and agreement on how to achieve it, are important motivators for employees implementing changes.

Insights and Observations

- *Focus* — Does the function, particularly at the middle management level, recognize opportunities for *internal* improvements? Or do they assume that the potential lies in “fixing” everyone else?

Few white collar functions act in isolation. Their work is closely integrated with other functions or customers in the marketplace. Over time, these interactions are certain to be tested: frustrations emerge, barriers develop, and employees clash. A “we-they” scenario develops, with employees concluding that “we could do our job if only *they* would _____.” The function must be willing to abandon or at least submerge such unconstructive feelings. There needs to be a desire to improve their own operations before others can be expected to do the same.

2. Attention to “operational” issues will enable productivity improvements to take place.

Productivity efforts in white collar functions have varied considerably. Some focused on motivational systems. Others emphasized assessments of procedures and work flow. Many addressed specific problems and employee relations. However, few efforts have approached white collar functional groups as *businesses* with both operational constraints and opportunities.

Attention to services is analogous to a focus on “product lines” of the unit and provides a significant means of analysis and measurement.

White collar functions are not mere repositories of expertise. They have resources at their disposal, people to be managed, obligations to a clientele, and an opportunity to further the strategic direction of the entire organization. They have inputs and outputs, albeit often complex and intangible. And there are procedures — often a multitude of procedures — that can be adjusted for gains in productivity. Indeed, such tinkering can proceed nearly indefinitely before realizing the gain equivalent to a major change in the actual service.

Moreover, professional and support staff are more inclined to evaluate their own efficiency when they are assured that larger issues relating to organizational support for their services have been resolved.

3. Training and coaching are required to deliver services effectively.

The primary interaction between functions and their users/clients is one of providing professional expertise. Accountants, engineers, programmers, and others are expected to provide opinions and advice as the situation demands. They gain credibility by giving good answers and avoiding elaboration and detail unless requested.

Their service is typically a combination of tangible and intangible commodities. It may be a report, plus the advice and interpretation which inform the report's user. It may be test results, along with advice on using the data. It may materialize in the form of exercise facilities and the coaching required to make good use of the equipment. Regardless, the function and its personnel

cannot work solely on the tangible commodity, or even their expertise.

Yet the vision for the future of many of these support groups relies upon enabling the user to make independent decisions and choices — on educating and facilitating rather than harboring and controlling their areas of functional responsibility. Thus, white collar personnel must be practiced in collaborative decision-making, fostering “buy-in” and commitment, and educating the user/client to make decisions independently.

Personnel in these groups typically are not prepared for such a role change. They have been trained and rewarded for delivering their expertise — for defining both the problem *and* the solution. For many, the desire to facilitate and consult is present, but the skills are lacking. Most professionals are not trained in this regard; higher education typically does not provide such skills.

The functional group and the parent organization have the responsibility to characterize the service, provide training in the delivery of support, and coach and reward personnel who interface with users/clients.

4. Organization administrative systems and processes offer a major opportunity for productivity improvement.

The project methodology addressed issues and opportunities within and between functional groups — both areas that afford major productivity gains. A third area of improvement lies in organization-wide or division-wide administrative systems and processes — provisions that were implemented to ensure control and to promote efficiency but which may have become bureaucratic and cumbersome.

In the few pilots where these broad systems were tackled, major gains were realized. Capital and lease allocation request systems were revamped to produce more expedient approaches and a level of control commensurate with the size of the request, for example. Particularly in contract organizations, such as aerospace and defense firms, the ability to acquire resources quickly and productively can mean greater profit and future business.

5. Measurement of white collar work is both possible and desirable.

At the onset of the project, measurement was presumed to be possible in the many areas represented by the pilot groups. The assumption was based on other measurement activities at the American Productivity Center.

At the close of the project, with most pilot groups having completed the measurement phase, there is clear evidence that white collar productivity measurement is indeed possible in many different settings and all functional areas represented. Perhaps more importantly, the groups themselves are collecting the data and managing improvements in their operations.

The measurement efforts were successful because:

- The project was not “measurement driven”; measurement was approached as but one among many tools to address effectiveness.

Insights and Observations

- Measures were associated with major components of the business — services or outputs. Individuals were not threatened.
- The measurement phase came after objectives had been set; measures were developed with services and particular future emphases in mind. Employees had a knowledge of any thrust to complement corporate decentralization or a new product, for example.
- The people who provided the services developed the measures, collected and interpreted the data, and determined appropriate changes in the service.

6. Justification of technology is best linked to critical junctures or features of service development and delivery.

Cost justification of computer-mediated systems and office environmental designs is difficult at best. Comparisons between the “manual” approach and the technology are particularly unimpressive if the manual approach is considered to be awkward and bureaucratic to begin with.

Further, management now recognizes that promised technological capabilities may or may not have much payoff; the mystique of office technology is rapidly waning.

Office technology is often characterized as a “tool” to be used at the discretion of the employee. In a few instances, it is “automation” of a routine process or series of transactions. Often, technological applications are least clear where the opportunity to further the business is greatest. The opportunity is perhaps recognized by a manager or professional, but he or she has difficulty spanning the gap between technological capability and the unique business opportunity.

Once a function has determined its major services, established future emphases, identified critical points of service development and delivery, and corrected weaknesses in service design, applications of office technology readily surface. More importantly, the capabilities provided by the technology may be directly linked to critical junctures or features of services where measures already are being made.

7. Self-reliance is a key to on-going productivity improvements.

Reliance on outside expertise is natural and frequently necessary. However, the process of change and productivity improvement should be ongoing. Improvement should not depend upon the consultant’s presence. Rather, the move toward self-reliance can be aided by the consultant. Several provisions will help:

- Agreement that the functions’ managers are in the lead and are responsible for success or failure of the effort.
- Clear expectations of the kinds of changes that can be supported.
- Putting functional needs first, rigorous use of the methodology second.
- A group of managers, professionals, and support staff who represent key organizational areas and services to foster improvements indefinitely.
- A network of peers in other functions and even other firms to generate ideas and provide for ongoing inspiration.
- Training and coaching in the methodology; frequent follow-up and review of variations.
- Frequent feedback from and close association with users and clients.

8. White collar productivity improvement is dependent on seven critical success factors.

- A climate supportive of change, innovation, and risk-taking.
- A vision for the future of the function that is shared among all employees.
- Emphasis on service issues and opportunities.
- A flexible methodology, one the function can adapt to its own circumstances and business.
- Leadership by the function’s managers throughout the effort, not by the consultant or a lower-level employee.
- Technology directly linked to service leverage points.
- Input from and “buy-in” by most employees at all levels of the function.

Conclusion

Conclusion

White Collar Productivity Improvement: Sponsored Action Research was an investigation of practical issues and concerns. The project demonstrated that white collar work can be measured; worthwhile improvements are probable in most functions; and the managerial, professional, and support staff can lead the improvement process.

Numerous examples of creativity, innovation, and problem resolution emerged within the pilots. Implementation of the ideas resulted in significant changes in the functions' way of doing business and in their use of resources. The project provides evidence sufficient to dispel any doubts of the opportunity for productivity improvement in white collar functions. Sufficient models have been documented to demonstrate the approach.

The challenge to management within any firm or agency is clear: either productivity improvement can be tackled in an aggressive, committed manner or "business as usual" can continue into the future.

The firms sponsoring the Center's White Collar Productivity Improvement action research were encouraged to look beyond the experiences of their pilots and the scope of the project to continued use and further dissemination of the results. The more aggressive and successful firms have outlined plans for the future. Highlights of these plans include:

- Reports by pilot groups to different functions at new locations.
- Multiple, interrelated pilots in strategic components of the firms.
- In-house capability to train and coach new pilot managers.

- A senior advisory group to steer the development of white collar improvements.
- Internal computer conferences and networks for pilot managers.
- Integration of the approach with other productivity and quality thrusts.

Experience with the project and its findings encouraged the American Productivity Center to continue its work in the white collar area. The proposed follow-up — White Collar Productivity Improvement: Innovative Methods and Plans in Action (IMPACT) — is an improved version of the previous project and methodology. Over the course of 16 months, four pilot groups in each sponsoring firm will participate. The purposes of the project are to improve:

1. Operations within the pilot groups, leading to increased efficiency and effectiveness.
2. The working interface between pilot groups.
3. The utility and speed of firm-level administrative systems.

As before, the sponsors will actively participate in computer networks and face-to-face conferences. Center staff will provide direct assistance in the field and seek continued improvements in the methodology. Throughout the project, interested parties are invited to contact the Center.

Together, sponsoring firms and the American Productivity Center continue to pursue an elusive yet promising goal — productivity improvement within the challenging environment of white collar work.

About the Center

The American Productivity Center is a non-profit organization that works with business, labor, government, and academia to improve productivity, quality, and quality of work life.

Founded in 1977 by C. Jackson Grayson, former dean of the School of Business Administration of Southern Methodist University, the Center today has a staff of 50 professionals. Its membership includes more than 250 business, labor, government, and academic organizations representing the gamut of industrial sectors, economic strategies, and political persuasions. Their common aim, with the Center, is productivity improvement, coupled with enhanced quality of work life, as the means to continued U. S. economic competitiveness and vitality.

In addition to multisponsored productivity research projects, such as the White Collar Productivity Improvement

project, the Center provides private consulting, advisory services, and educational seminars in the areas of:

- Productivity and quality of work life management
- Productivity measurement
- Productivity gainsharing
- Labor-management cooperation
- Employee involvement

Additional Center resources include the nation's most extensive productivity and quality of work life library, research services, regional network meetings, ongoing computer networks on a variety of productivity issues, a wide range of publications, and national affairs representatives.

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