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**BANCO CENTRAL DE LA REPUBLICA DOMINICANA**



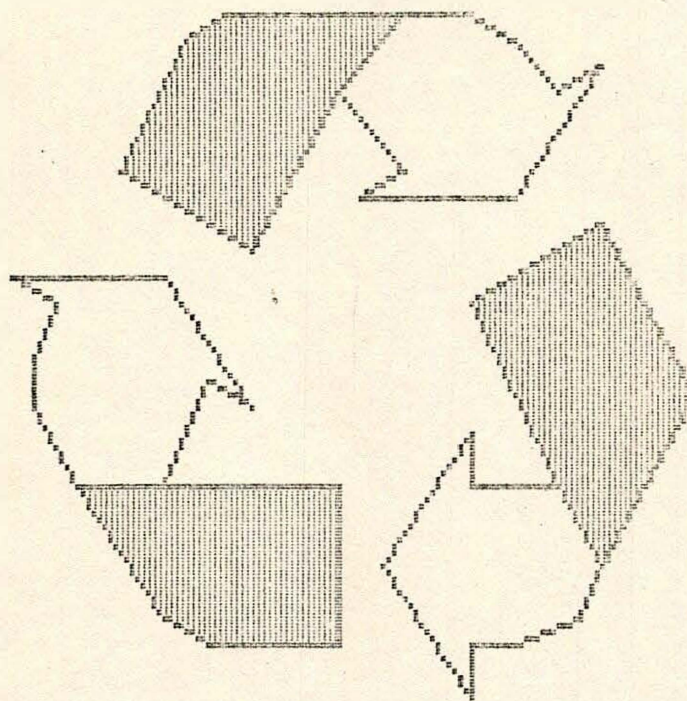
**XIII** REUNION DE SISTEMATIZACION  
DE BANCOS CENTRALES  
AMERICANOS E IBERICOS

**AUTOMATIZACION DE LA OFICINA**

**Rafael Almendros, IBM Corporation**

Del 25 de noviembre al 1ro. de diciembre de 1984  
Santo Domingo, República Dominicana

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AUTOMATIZACION  
DE LA  
OFICINA

RAFAEL ALMENDROS  
IBM CORPORATION

30 de Noviembre - Santo Domingo, R.D.

AUTOMATIZACION DE LA OFICINA  
TECNOLOGICA, INTEGRACION Y PLANIFICACION

PROPOSITO

Proveer un resumen general de lo que está y estará sucediendo en nuestro ambiente de trabajo- en nuestras oficinas - según nos adelantamos en la era de la información, y presentar las herramientas y equipos disponibles. Finalmente, la presentación sugiere una manera lógica y efectiva de enfocar el proceso de automatización del ambiente de trabajo.

CONTENIDO

- ° Antecedentes- presenta un cuadro de las circunstancias actuales y los desarrollos que han permitido llegar a donde estamos y viabilizan el camino hacia el futuro.
- ° Definición- la automatización de la oficina es un proceso dinámico y continuo que combina diversos factores tales como el personal, la organización, las tecnologías y otras herramientas, para lograr, con mayor efectividad, las metas y objetivos de la empresa.
- ° Ciclo de Procesamiento de Información- Captura, Procesamiento; Almacenamiento; Acceso y Análisis; Distribución y Comunicación.
- ° Equipos y sus usos- presenta los equipos más importantes en la automatización de la oficina y como cada uno contribuye al procesamiento de información. Entre los equipos principales están unidades de dictado, microcomputadoras, procesadores de palabras y texto, redes de comunicación, correo electrónico, microformas, copadoras y reproductoras y unidades modulares para muebles de oficina.
- ° La Planificación- discute una metodología ordenada y comprobada para el desarrollo exitoso de la oficina automatizada (O.A.)- la oficina del presente y del futuro.

## TECNOLOGIA Y EQUIPO DISPONIBLE PARA CADA CICLO

- Unidades de Dictado
- Equipos de reconocimiento óptico de caracteres
- Maquinillas/ Procesadores de Palabras y Texto
- Computadoras (Mini-Micro-Mainframe)
- Sistemas de Archivos
- Sistemas de Apoyo para Decisiones de Ejecutivos (DSS) Software

- hojas de trabajos (spreadsheet)
- modelos
- gráficas
- bancos de datos
- otros

- Equipos Reprográficos
- Redes de Comunicación
- Correo Electrónico
- Otros equipos

- muebles y espacio de oficina
- ergonomía

## INTEGRACION Y PLANIFICACION

- La clave del éxito
- ¿Qué es?

## ¿POR QUE DESARROLLAR UNA ESTRATEGIA?

- Implicaciones
- Alcance

## METODOLOGIA ESTRUCTURADA - 7 PASOS BASICOS

- Definir objetivos
- Analizar la situación
- Definir los requisitos
- Solicitar propuesta
- Evaluar propuestas y selección de sistema(s)
- Diseñar Plan de Implantación
- Implantación y Evaluación

# Why All the Fuss?

## DEMAND

Increased office workload  
Flattening of labor supply  
Rising labor costs  
Employee expectations

The need to improve  
office labor performance

## SUPPLY

Smaller / quicker logic  
Bigger / faster storage  
Broader / faster  
communications  
Improved software  
firmware techniques

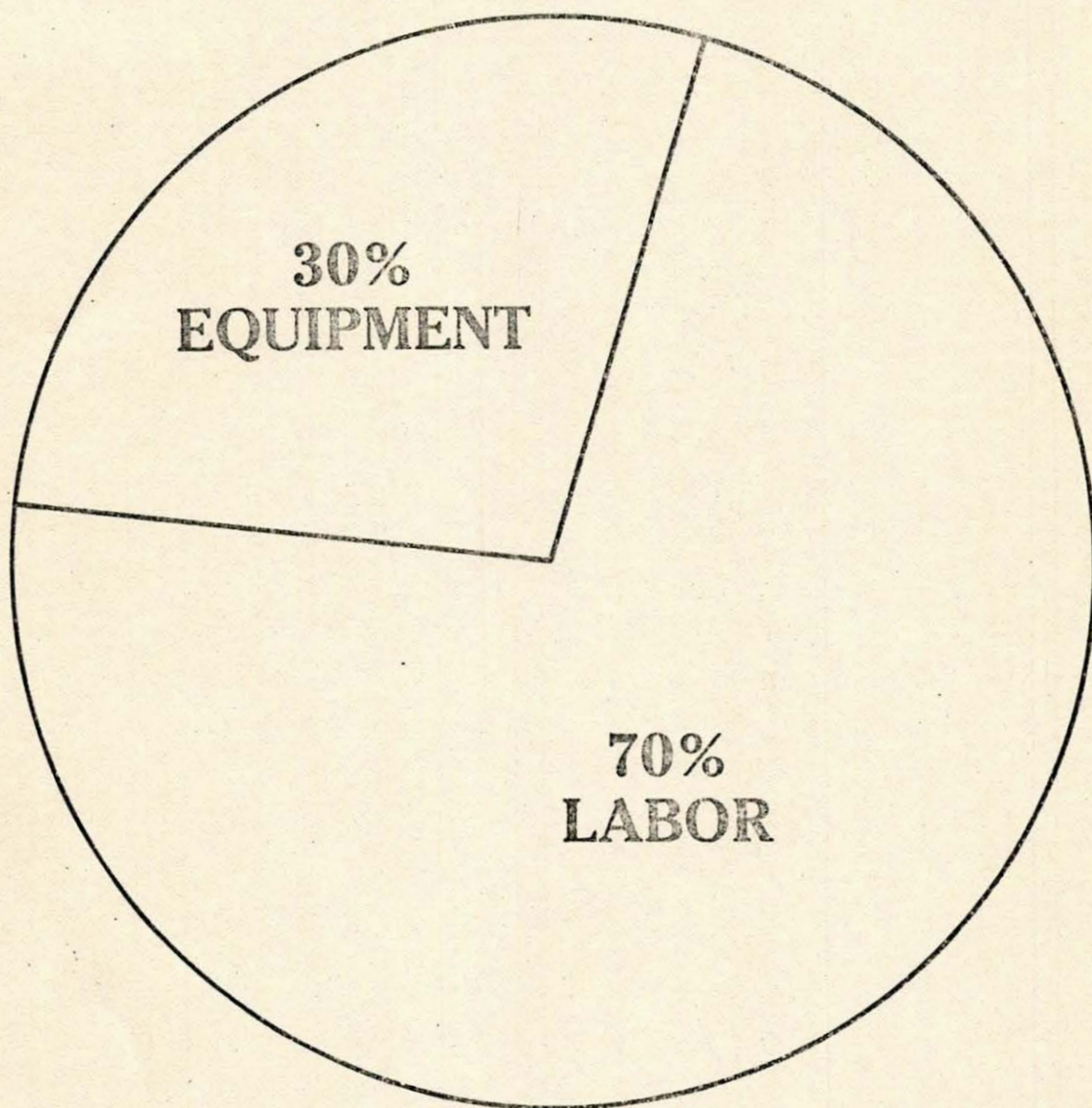
The ability to deliver  
computer support at  
a reasonable cost

A CONVERGENCE OF DEMAND AND SUPPLY

BACKGROUND - THE GROWTH OF INFORMATION

- BUSINESSES (AND GOVERNMENT) CONTINUALLY DEMAND MORE
- TECHNOLOGY ALLOWS US TO CREATE MORE
- RECORDED INFORMATION DOUBLES EVERY SIX YEARS
- WE ARE INUNDATED IN A SEA OF INFORMATION
  - 30 BILLION ORIGINAL DOCUMENTS
  - 630 BILLION PAGES OF MAIL
  - 100 BILLION PAGES COPIED
  - 85% OF PAPER FILES ARE NEVER USED
- PROBLEM IS NOT HAVING INFORMATION, BUT HAVING THE RIGHT INFORMATION ON A TIMELY BASIS

# OFFICE COSTS

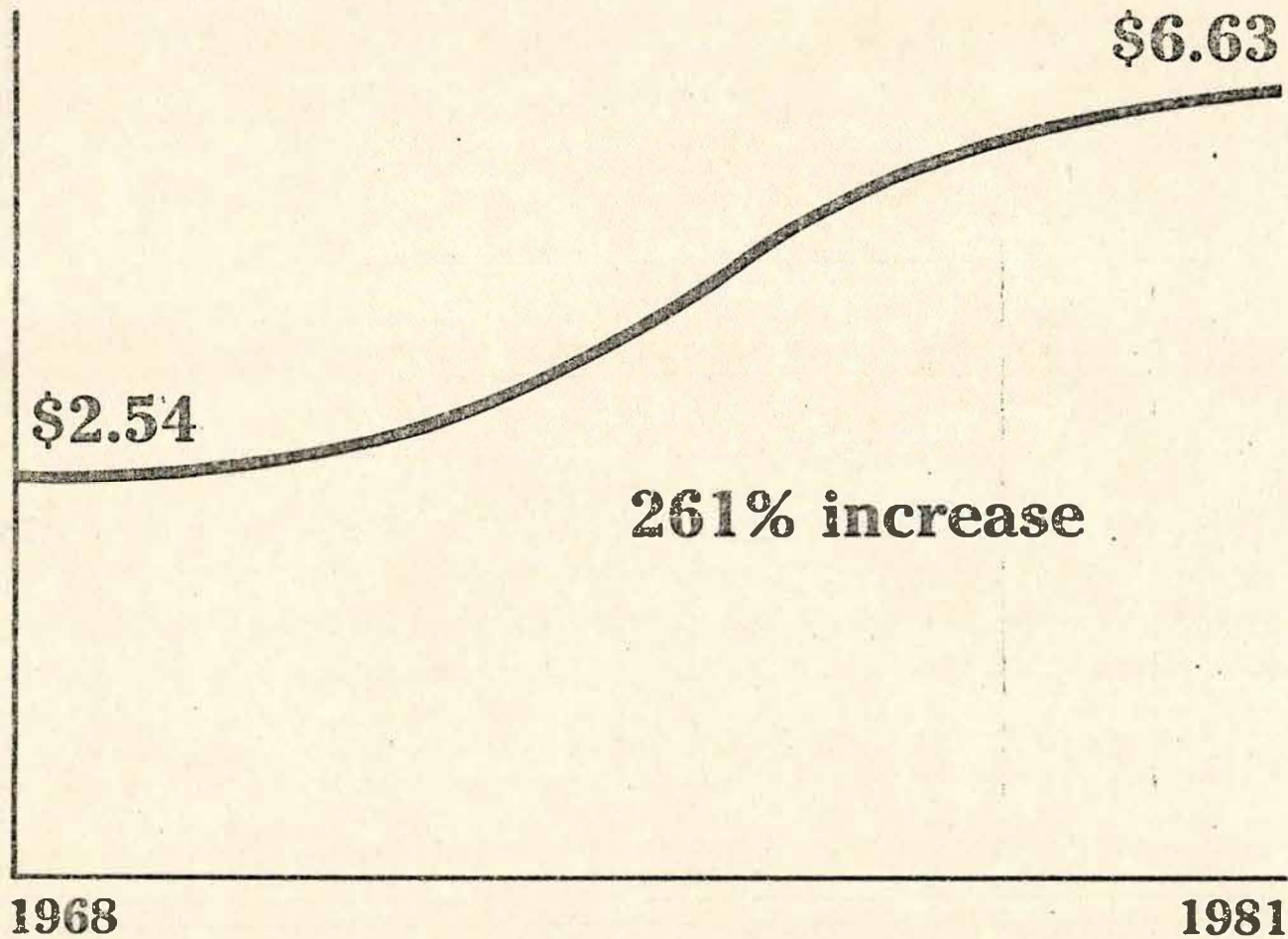


**77% - PRINCIPALS' SALARIES**  
(Executives, Managers, Professionals)

**23% - SECRETARIAL SALARIES**

**Source: Dartnell Corporation**

# COST OF A BUSINESS LETTER



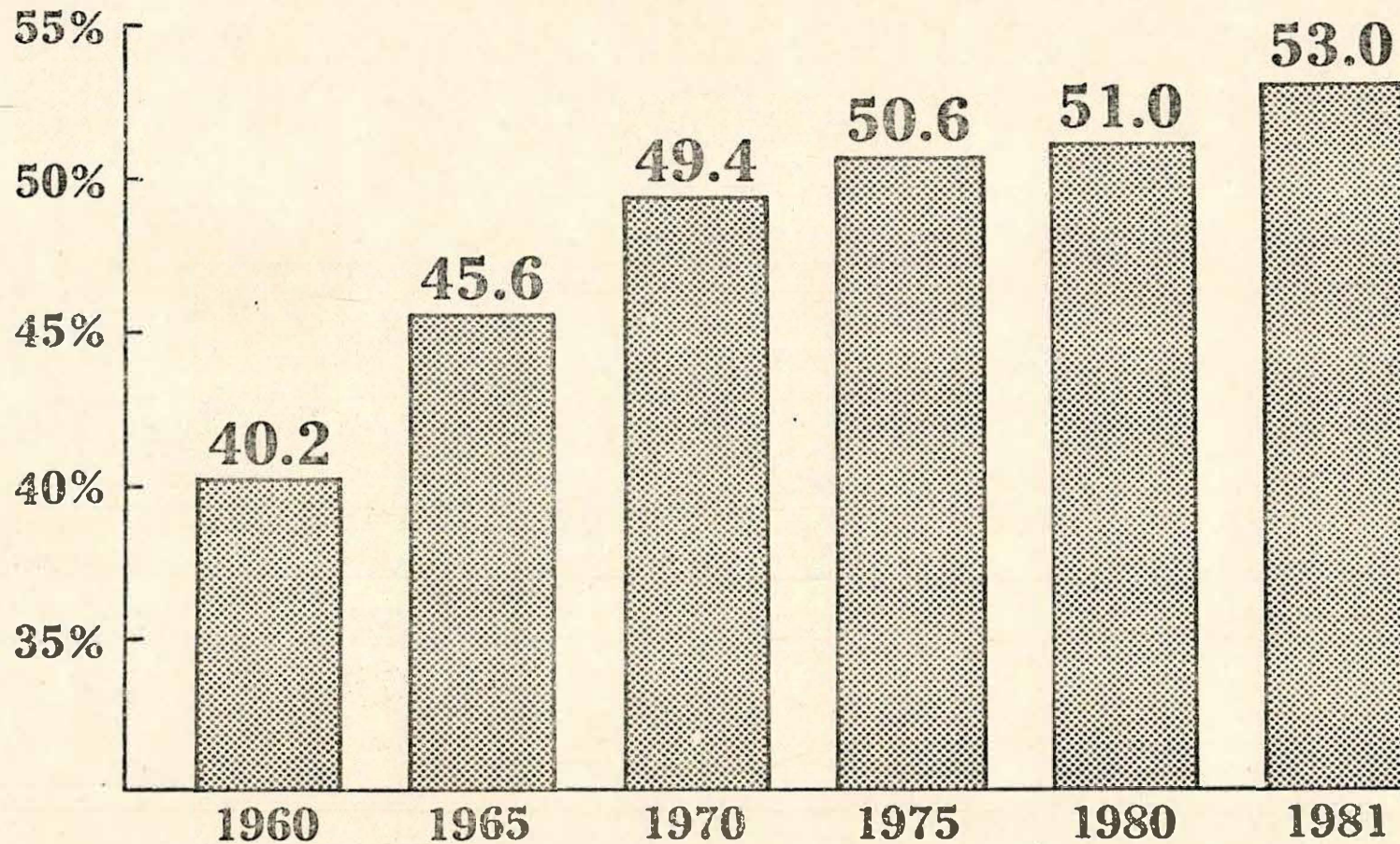
Source: Dartnell Institute

# **COST INCREASE:**

## **AMOUNT OF PAPER**

- **324 Billion Documents in U. S. Business**
- **72 Billion Documents Added Annually**
- **70 to 75% are Strictly Internal**
- **19 Copies in Average Life**
- **Nearly All are Filed Somewhere**
- **Only 5% are Ever Looked at Again**

# U. S. WHITE-COLLAR WORK FORCE



Source: U. S. Bureau of Labor Statistics

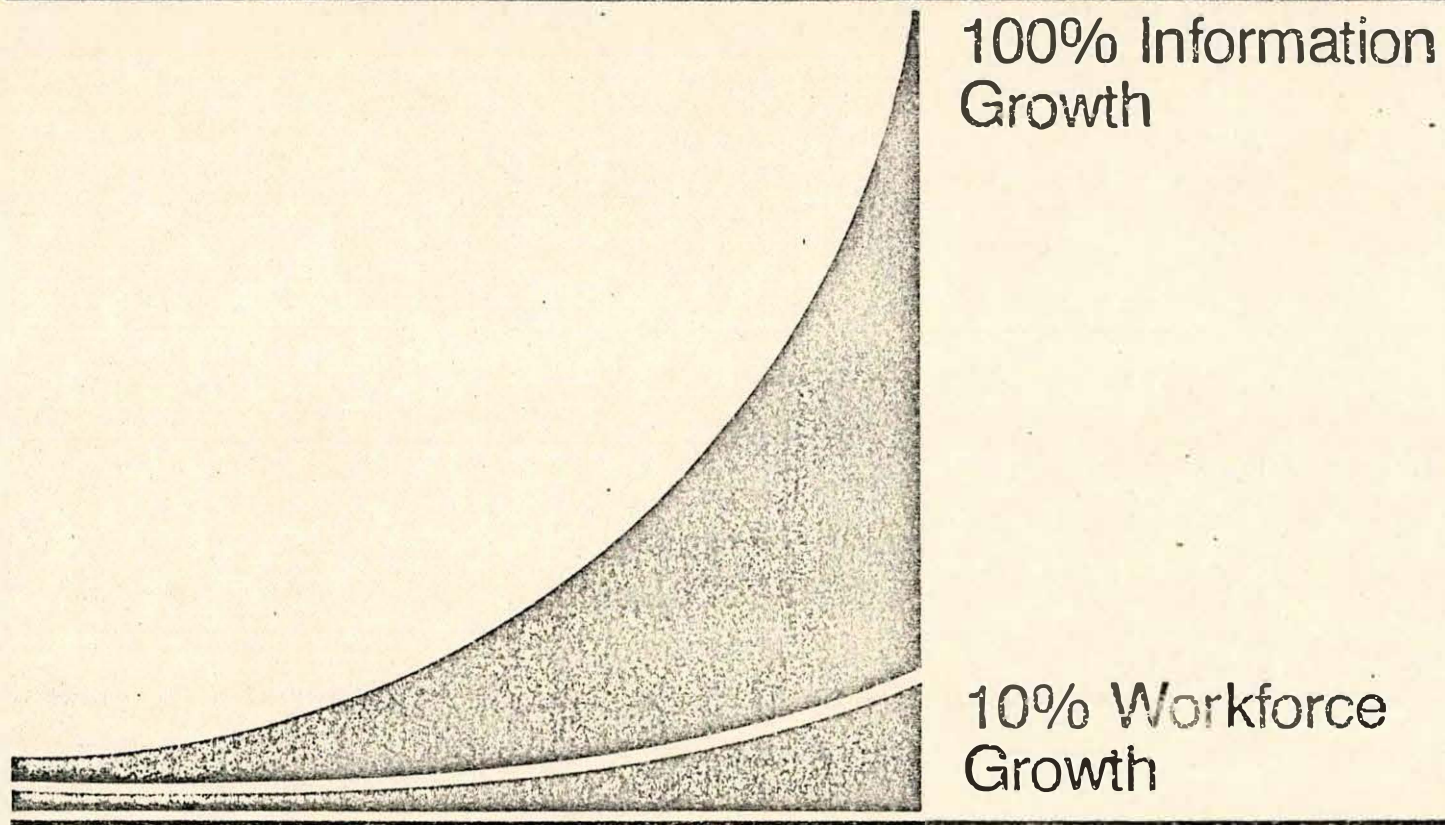
# EXPENDITURES VS. PRODUCTIVITY

CAPITAL EXPENDITURES		PRODUCTIVITY
Farm Worker	\$40,000	Up 55%
Production Worker	25,000	Up 90%
White-collar Worker	2,500	Up 4%

Source: U.S. Bureau of Labor Statistics (1968-1978)

## Trends: 1980-1990

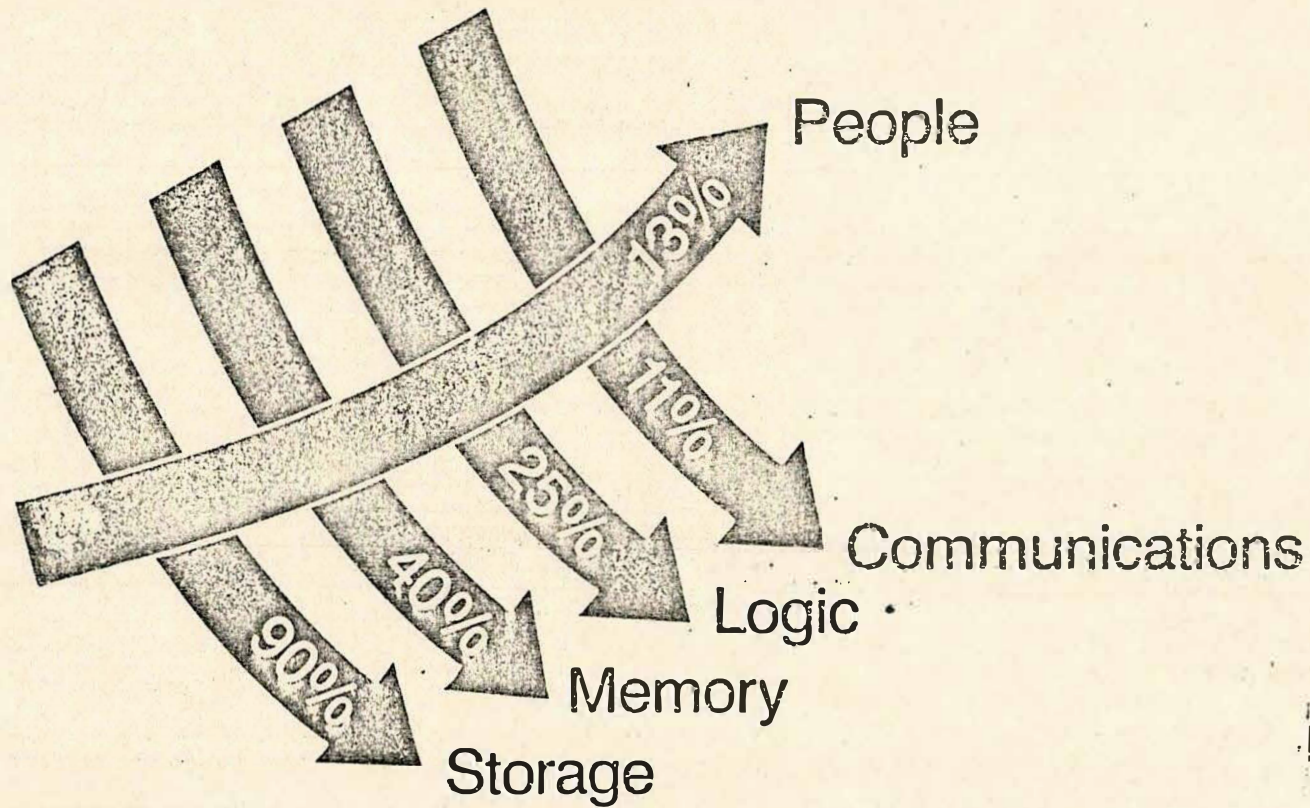
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Source: IBM

## Changing Costs: 1980-1990

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Source: IBM

# OFFICE AUTOMATION

**BASIC APPLICATIONS :**

WORD  
PROCESSING  
RECORDS  
PROCESSING

LIST  
PROCESSING  
FORMS  
PROCESSING

ELECTRONIC  
MAIL  
ELECTRONIC  
DOCUMENT  
DISTRIBUTION

ELECTRONIC  
FILING  
ELECTRONIC  
PRINTING

VOICE MAIL

**ADVANCED APPLICATIONS :**

CONFERENCING

BUSINESS  
GRAPHICS  
PERSONAL  
OFFICE AIDS  
ACTIVITY  
MANAGEMENT

EXTERNAL  
INFORMATION  
RETRIEVAL  
ACCESS TO OTHER  
COMPUTER SYSTEMS

MANAGEMENT  
INFORMATION  
DECISION  
SUPPORT  
SYSTEMS

SPECIALIZED  
APPLICATIONS

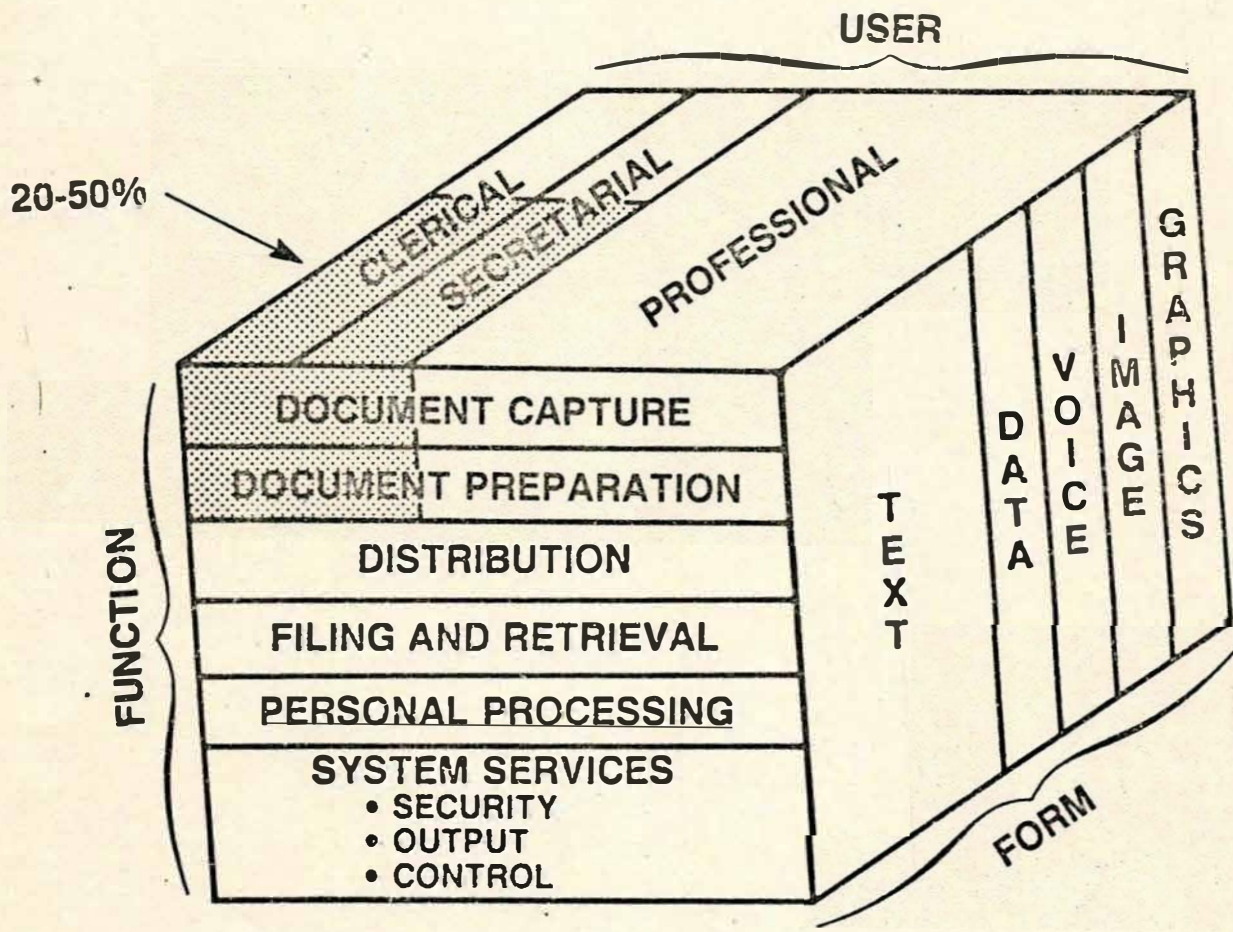
**COMPONENTS :**

COMMUNICATIONS  
PROCESSOR  
UTILITY  
PROCESSOR  
LOCAL AREA  
NETWORK

MULTI-FUNCTION  
WORKSTATION  
PROFESSIONAL  
EXECUTIVE  
ADMINISTRATIVE

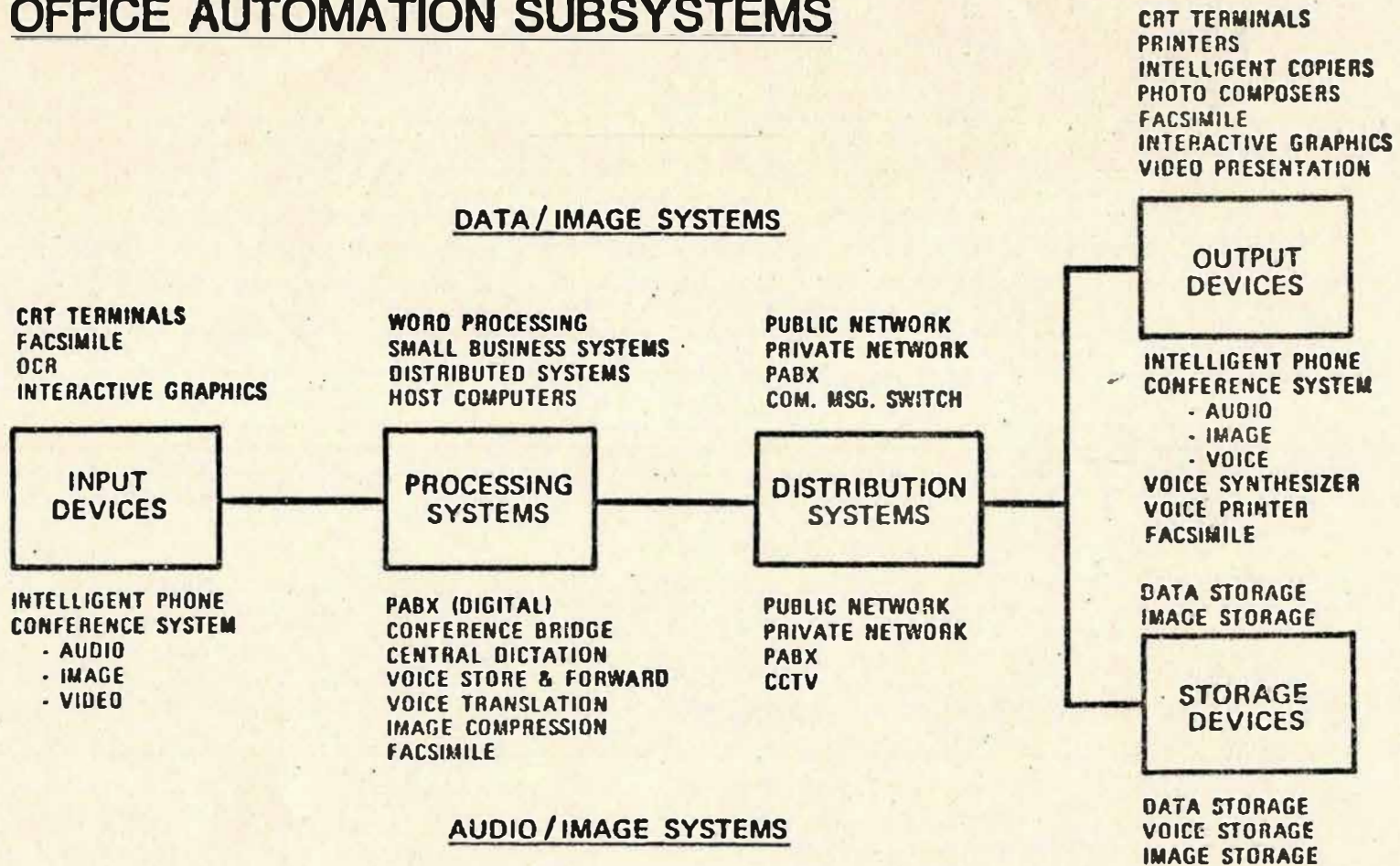
ELECTRONIC  
PRINTERS  
OCR  
COMPUTERIZED  
PHOTOTYPESETTING

INTELLIGENT  
COPIERS  
COMPUTERIZED  
MICROFORMS  
VOICE STORE  
AND FORWARD



SOURCE: IBM INTERNAL STUDIES

# OFFICE AUTOMATION SUBSYSTEMS



**STRATEGIC PLANNING**  
**FOR OFFICE AUTOMATION**

**WHY DEVELOP A STRATEGY FOR OFFICE AUTOMATION?**

- MYRIAD OF VENDOR OFFERINGS**
- OFFICE WORKER PRODUCTIVITY IS STATIC**
- CLERICAL LABOR COSTS ARE INCREASING**
- RAPID ADVANCES IN OFFICE AUTOMATION TECHNOLOGY**

# **INTEGRATED OFFICE SYSTEMS**

- **Data Processing**
- **Word Processing**
- **Photocomposition**
- **Micrographics**
- **Reprographics**
- **Records Management**
- **Teleconferencing**
- **Electronic Document Distribution**
- **Voice**
- **Image**

**PHASE I  
PLANNING & ANALYSIS**

**1  
OFFICE AUTOMATION  
STRATEGY  
DEVELOPMENT**

**2  
ANALYSIS OF  
OFFICE  
OPERATIONS**

**3  
DEFINE OFFICE  
SYSTEMS  
FEATURES**

**PHASE II  
REQUIREMENTS  
DEFINITION**

**4  
DETAILED  
SPECIFICATION  
OF REQUIREMENTS**

**5  
PROCUREMENT**

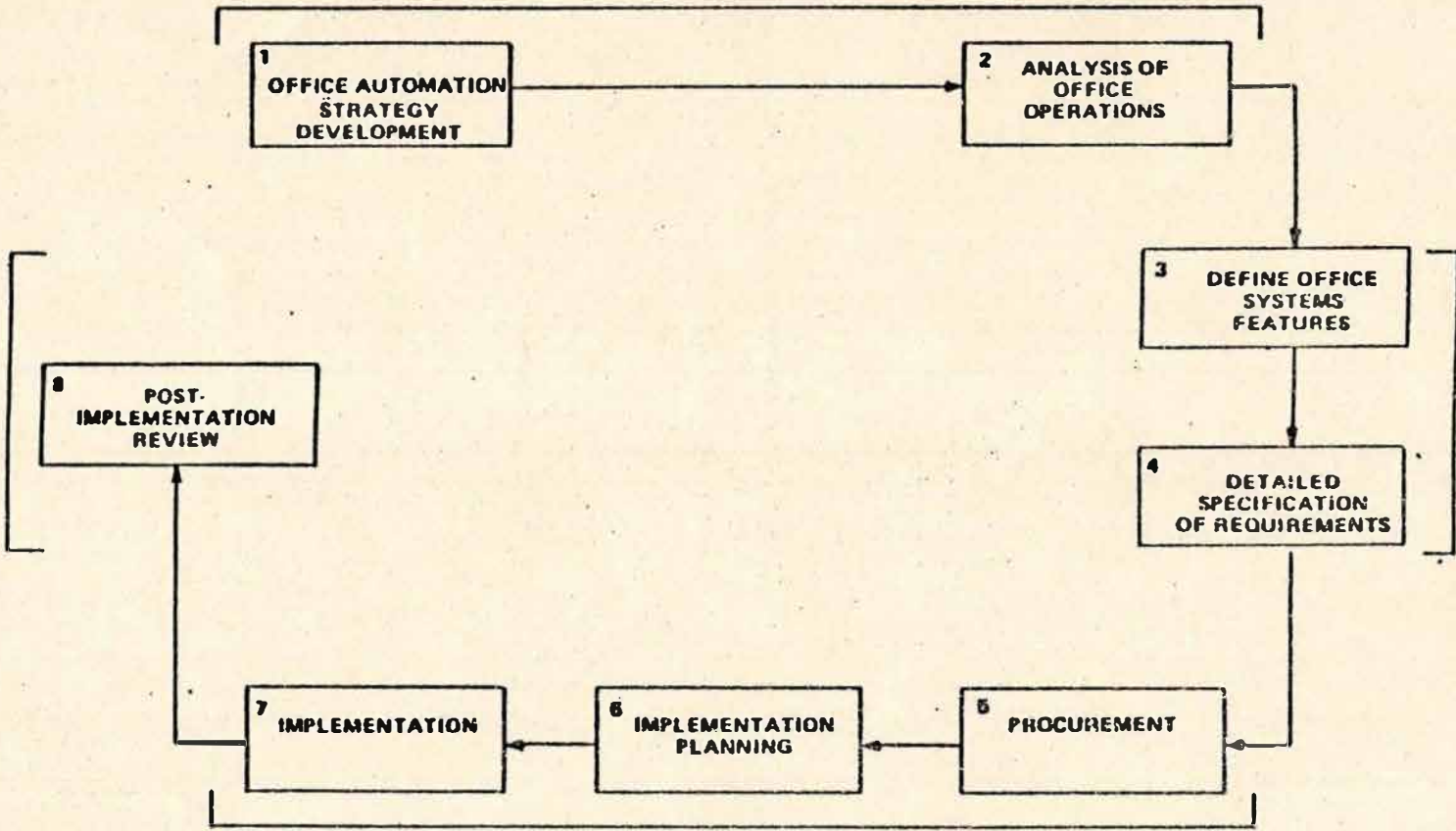
**PHASE III  
IMPLEMENTATION**

**6  
IMPLEMENTATION  
PLANNING**

**7  
IMPLEMENTATION**

**PHASE IV  
REVIEW**

**8  
POST-  
IMPLEMENTATION  
REVIEW**



# Tactics for Getting to the Automated Office

- Who will be in charge? (DP; Office Administrator; Telecommunications)
- Establish task force
  - Who should be included
  - Scope of study
  - Authority
  - Lifespan (3 months; 5 year)
- Get top management commitment
  - Education
  - Finances
  - Participation
- Investigate current and future office needs
  - Study the organization
  - Study the workers
  - Study the work
- Use needs to define system requirements
  - Prioritize according to applications

## Tactics for Getting to the Automated Office (Continued)

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- Identify pilot projects
  - High leverage areas (can be replicated over and over in company)
  - Right level of visibility (usually close to hdqtrs. location; professionals and/or lower or middle management — **NOT** executives)
  - High, fast payoff
  - Use pilots to evaluate first pilots and to fine-tune future systems
- Select hardware and software
- Cost justify as much as possible “hard-dollar” savings
  - Salary
  - Space
  - Hardware
- Cost justify “soft-benefits”
  - Higher quality and quantity of work
  - Timeliness of work for better decisions; information
  - Job enrichment
  - Competitive edge

# JUSTIFICATION-TEXT/DATA

- **Current system is base**
- **Verify current activity**
  - **Survey**
  - **Observation**
- **Evaluate job mix**
- **Create productivity matrix**
  - **Equipment**
  - **Job/user group**
- **Pick equipment**
- **Install pilots**
- **Measure results**

# **IBM's Commitment**

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**Varied product offerings to meet differing customer needs**

**Systems integration offering to tie them together**

**via an**

**Architecture**

**to provide**

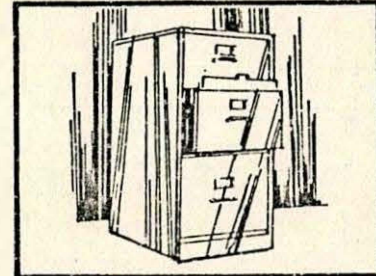
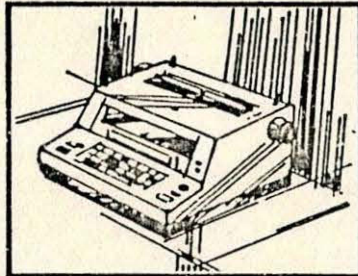
**a total office systems solution**

- **Text**
- **Data**
- **Voice**
- **Image**
- **Graphics**

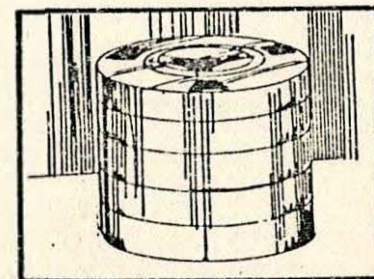
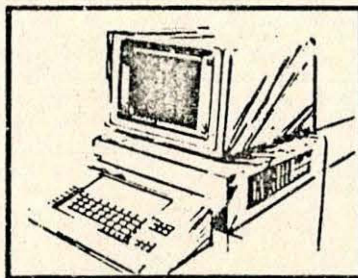
# Basic Elements of the Office

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Are Not Changed...



But They Are Enhanced



Career Opportunities

Progressive Equipment

Customized Media Storage

## WORD PROCESSING

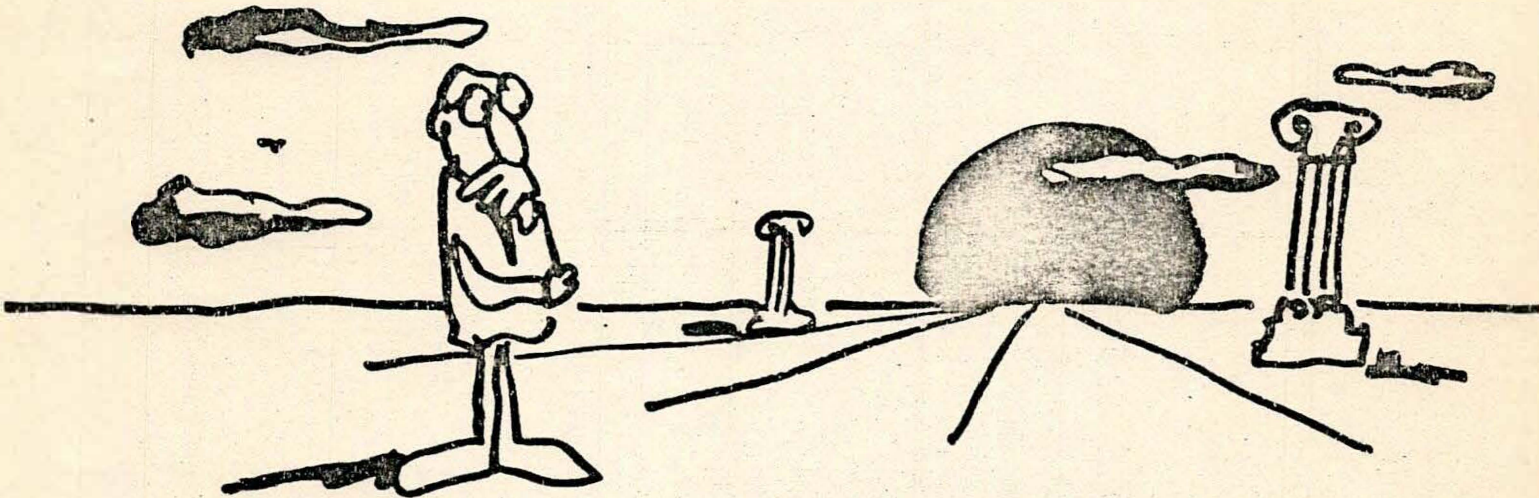
- WORD PROCESSING PROVIDES THE ABILITIES-
  - TO EFFICIENTLY TYPE, STORE/RETRIEVE, REVISE AND PRINT PAGE(S) OF TEXT
  - TO PRINT TEXT IN A VARIETY OF FORMATS
  - TO SIMPLIFY THE PROCESSING OF TWO MAJOR TYPING APPLICATIONS:  
MULTIPAGE DOCUMENTS WITH REVISIONS AND REPETITIVE/DOCUMENT ASSEMBLY
  
- SOME BASIC WORD PROCESSING FUNCTIONS ARE-
  - ADJUST
  - CENTER
  - COLUMN ALIGNMENT
  - DELETION
  - INSERTION
  - INTERACTIVE HYPHENATION
  - PAGE NUMBERING
  - PARAGRAPH INDENT
  - STORED FORMATS
  - BACKGROUND PRINT
  
- SOME ADVANCED WORK PROCESSING FUNCTIONS ARE -
  - AUTO HYPHENATION
  - BLOCK MOVE/COPY/DELETE
  - FIND/GLOBAL
  - FOOTNOTES
  - JUSTIFY
  - MATH
  - SPELLING
  
- A COMPARISON CHART OF WORD PROCESSING OFFERINGS FOR DISPLAYWRITER, DATAMASTER AND PERSONAL COMPUTER IS INCLUDED IN HANDOUT. THERE IS ALSO A CHART HIGHLIGHTING 5280 TEXT CAPABILITIES.

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# Making the office more productive

Five ways to identify and analyze your office requirements  
Joseph E. Gallagher

## 3



With the shift of the work force to white collar, escalating salaries, and the increasing amounts of information that executives need to manage, many organizations are now focusing on the office as a prime area for productivity improvement. Productivity in the office means getting more value per dollar expended on employees (salaries, training, fringes), facilities (space, furniture, fixtures), and equipment (typewriters, computers, photocopiers).

There are two basic types of "solutions" that can result from office productivity improvement efforts. The first is non-technological. This can include changes

in organization, redesign of workflow, redistribution of workload and improvements in operating procedures. The second is the automated solution. Properly applied, automated systems are efficient tools that can increase output volumes, eliminate work steps, reduce task time, standardize work products and reduce office space requirements. Automated solutions may address repetitive clerical tasks as word processing addresses typing, micrographics addresses filing and photocopying addresses duplicating. Or, automated systems can be designed specifically to provide management with analytical tools to aid in the decision-making process.

## 5 Ws of needs analysis

None of these solutions can be arrived at intelligently without first identifying and analyzing needs through a planned, systematic approach. The five Ws of what we will call "needs analysis" remain the same no matter where the focus of the office improvement effort.

### What are these five Ws?

They are simple to state but rather more complex to work out successfully. Placed in question form they are:

1. **What** exactly is a needs analysis? What are the objectives?
2. **Why** should the company spend money for a study of needs?
3. **Who** should management choose to conduct the needs analysis? And what are the advantages and disadvantages of those choices?
4. **When** is the best time to perform this kind of study?
5. **Where** does it take place?



### What?

What exactly is the needs analysis or requirements definition study? And what is the objective?

The objective is to quantify the amount and nature of special requirements that characterize the office functions. This type of study includes detailed analysis of existing procedures, work distribution and document processing requirements.

These needs or requirements are translated into systems features. The outputs of the study include both manpower management recommendations and cost benefit analysis of key system features.

It is not only important to know what a needs analysis is but also how it should be applied. In the conduct of a needs analysis one must know what the objectives are, where they want to focus, and what methods and techniques should be employed to get the best possible results. If a step is missed or a key area is not addressed, the system and interrelationships of its components will not be fully understood.

A needs analysis is not a feasibility study and is not an organizational study. It is a study that identifies what actions must take place and what resources must be available for the organization to achieve its goals. By identifying what you need to operate at present levels you can project what will be required to operate at the level that is desired.

### The needs analysis process

The process of performing a needs analysis is a phased approach which primarily consists of identifying scope and objectives, collecting information, analyzing the data, and converting it into systems features.

The needs analysis addresses all of the components of a system and is not strictly technological as any system consists of people and facilities as well as equipment.

Therefore, it not only identifies the need for word processing equipment, but also the human resource requirements and spatial arrangement or layout of the operation.

It is not uncommon to find that an organization has done a very detailed analysis of their equipment requirements but little identification of the people (organization and staffing) and facilities (layout and environment). The consequences of this range from delays in complete implementation to total rejection of the new system.

## First W What—setting objectives



### Why?

Why do a needs analysis? Why identify what we need and then analyze it? That seems like a waste of time and money to some people. A manager might ask, "Why do we have to hire a consultant to tell us that if there is a long line for the photocopier, we should buy more machines?"

### Finding the best solution

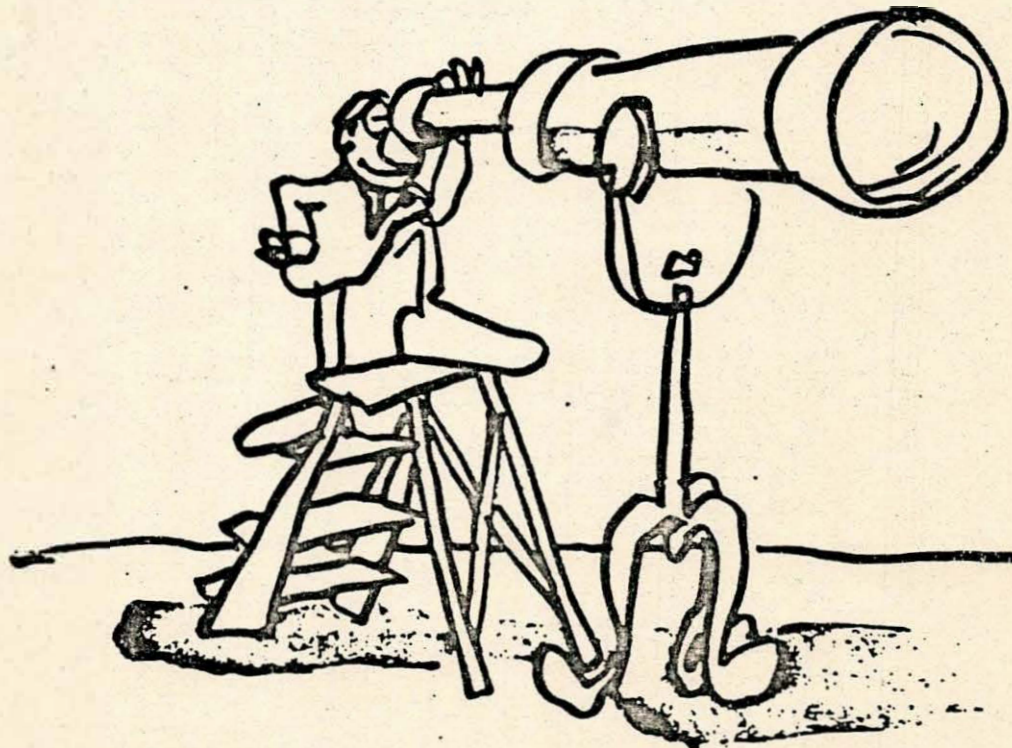
The answer is that the obvious solution is not always the best solution. One must understand the environment, the requirements, the interrelationships of different functions and the impacts they have. In

this example, buying more copiers may mean that you are replacing the costs of having personnel waiting in line with the cost of new equipment. In one case the long lines might have been actually caused by an ineffective central file function. Because employees were unable to locate file copies when needed, they started making and keeping copies for their personal file. A needs analysis would detect this condition and make the corrections where they could be most effective in the central file room.

The copier example is a simple one, but the approach of applying the quick solution may have an unfortunate impact if it prevails throughout the organization.

There are companies with storerooms of uncrated equipment that will attest to the benefits of first understanding your needs. The needs analysis allows a company to understand its own uniqueness—how it differs from others—and to understand its particular requirements and idiosyncrasies so that it can apply the best tools to the task. Without a planned, proven approach to identifying requirements, the process of matching features to needs is reduced to guesswork.

66 Second W  
Why—the obvious  
solution is not  
always the best  
solution 66





## Who?

Who are the likely candidates to perform the needs analysis? Usually, there are three options—each has advantages and disadvantages. The first is to assign the task to the manager of the department to be studied. The second choice is the internal analyst or consultants within the organization. The third option is to contract the services of a professional consulting firm.

### The department manager

The department manager is most familiar with the department operation. Therefore, the time spent in preliminary fact finding normally required by persons unfamiliar with departmental operations can be reduced. The manager also may be the most effective at getting staff cooperation because he or she has the authority to schedule people's time and assign responsibility for tasks required for the project. However, there may be more disadvantages than advantages in choosing the manager as the sole source for performing the study. One reason for this is that it is unlikely that the departmental manager can be totally objective in analyzing his or her own department's performance. When was the last time you read a report from a manager that identified his or her informal management methods as the primary reason for low productivity?

Getting honest ideas from employees can also be difficult because employees may fear retribution as a result of providing information critical of their supervisor's ability to manage. This kind of

arrangement is sometimes restrictive and, therefore, not always an effective way of identifying needs.

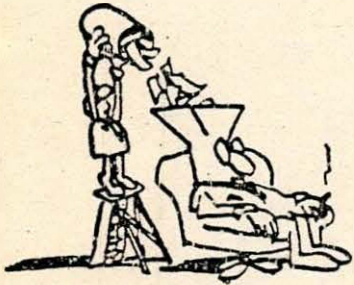
Given that the manager will continue to be responsible for the day-to-day operations of the department, in addition to the heavy demands of time that the study would require, it is difficult to imagine both being done effectively.

One last important consideration is the amount of experience that the manager has in performing needs analysis studies. Those instances where organizations have attempted to cut costs by having the department manager perform his or her own needs analysis have frequently resulted in the study having to be redone by experienced persons. So in all likelihood, the department manager may not be the best choice as the sole source for a needs analysis study. However, this does not exclude him or her from being a valuable and usually necessary participant in the study process.

### Internal analyst & consulting departments

Internal analysts or consulting departments have been growing in size and number within the last five years. Once included mainly in methods improvement and data processing applications, they have become numerous in the larger corporations primarily as an outgrowth of office automation. Thus, the second choice or alternative is to use the resources within the organization, if they exist for you.

The advantages are usually greater than with the department manager. The internal analyst has knowledge of the organization, its strategies, policies, and procedures. Where the manager will look at needs strictly from his own departmental perspective, the analysts can view the department's needs with an eye on how it relates to the needs of the entire organization. This is often very practical in terms of standardizing procedures and coordinating equipment-purchasing decisions.



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The analyst's primary function or role in the organization is to collect data, analyze it and make recommendations. Analysts spend all of their time in these types of activities. They are not only skilled at it, but also they are not hampered by requirements that compete for their time, as would be the case with the manager.

Some shortcomings have been experienced in choosing this option, however. One is that the availability of these resources may not always be as timely as desired. In reality the analyst is not sitting in the office waiting for you to call. He has a workload of projects that often runs into the next calendar year. In other words, it is first come, first served and the wait could be substantial.

A second shortcoming may be expressed in the old adage that says "When the only tool one has is a hammer, one tends to view everything as if it were a nail!" In the office systems environment, many analysts have gained their experience by concentrated exposure in a single technology or office function. For example, the analyst may have been the key person in the word processing system implementation. Having become trained in its operation and knowledgeable of the steps of the installation, he or she may have been recruited by management to repeat this process in other departments or branch offices of the company. As will be discussed later in greater detail, the office consists of six functional areas and the information input or "capture" function that includes word processing is only one function in the total process. It could be a mistake to assume that the analyst used in this example is qualified to perform a needs analysis in other areas of office activity.

A final concern is the political environment within which the internal analyst must work. Such an environment may unconsciously affect the decisions and recommendations that the analyst makes. Take, for example, the pressure on the analyst who reports to the vice president of operations, and must identify the problems and determine the needs of a de-

partment whose manager also reports to the same vice president. Does he or she report objectively no matter what the potential results, knowing that he or she will have to work every day with the people about whom he or she may give critical evaluations?

### **The professional consultant**

The third choice is to hire the services of a professional consulting firm. Usually such arrangements are contractual with the parties committed to a schedule with stated work products and an agreed fee. Therefore, the completion of the study is likely to occur in a more timely manner than possible with the first two choices.

One major advantage is that the consulting firm has no axe to grind. A lot has to be said for the fact that when you hire a professional consulting firm to study your operation you are asking for an objective, unbiased third-party opinion.

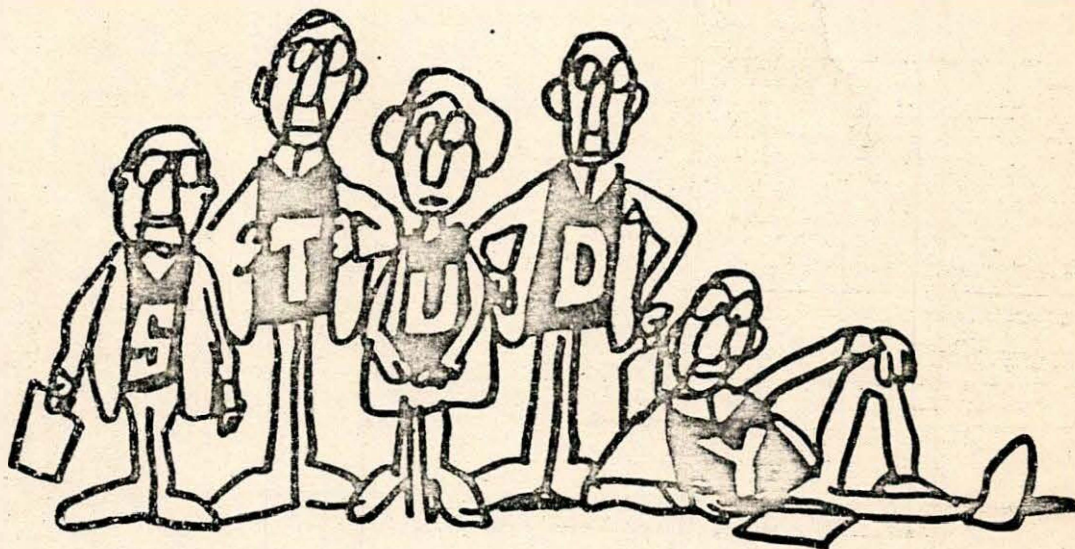
The greatest benefit one receives from the professional consultants may be the broad range of experiences and resources that these firms can bring to the task of analyzing your needs.

The most mentioned disadvantage of using external consultants is cost. While consulting firms will tell you that you get more value for each dollar, the perception is often that they are expensive. In addition, employees may view the consultant as an "outsider" and management must often do a good selling job to employees in order to get their cooperation.

### **A combination of talents**

The selection of the person or persons performing the study is critical because the wrong choice might lead to higher costs and poor results. Very often the best choice is a combination that takes advantage of the strengths of the department manager, the internal analyst and the outside consultant. The managers are familiar with operation and may be most likely to get staff cooperation. The use of internal analysts for the labor-intensive data collection steps is often the wisest

●● Third W  
Who should perform  
the analysis? ●●



choice for the task. The objectivity, project management, and broad experiences brought by the professional consultants should also be employed.

The optimum combination will be determined by factors of budget and timeliness.

always be useful whether making productivity improvements, redistributing workloads or identifying future requirements. There are, however, some key times when it would be more useful to have the information, or maybe even damaging not to have it. Listed below are three cases in which a needs analysis may be necessary.



#### When?

Is there a best time for such an analysis? The answer may vary with the circumstances, but any time is a good time to begin because the documentation can

#### Case 1 When the company moves

When planning a major departmental or company move, where the entire office will be uprooted and moved to another location, a needs analysis may be necessary. Because you don't want to implement a new system in the existing facility and then in a relatively short period of time "rip it out" and reimplement it in the new facility, in most instances planned procedure changes, purchasing decisions and the implementation of new equipment will be postponed until the move has taken place. Therefore, it follows that prior to moving you will want to have a good idea of what your needs are.

Moving means that files will be culled—with many documents, records and materials discarded in the process. It is important to know what is crucial to keep and what you can live without.

In the new facility, the office layout will usually be different from the existing one. The architectural design of modern office buildings may cause you to situate people and equipment differently than in your existing facility. An understanding of the functional interrelationships of people, work units, groups and departments is critical in designing the best layout and workflow. We recommend working with the design architect in planning office layout and equipment configuration requirements. With requirements such as wiring, air conditioning and logical adjacency identified and integrated into the facility design, workflow is optimized and modification costs are kept to a minimum.

### **Case 2 When the budget is planned**

Another key time to perform the needs analysis is prior to the budget process. In preparing a budget or forecast, it is important to know what you are going to need in terms of resources, facilities and equipment over the next budget period. Once needs have been identified, they can be translated into system features. These features can often be directly translated into dollars.

### **Case 3 When technology changes manpower needs**

The third good time for a needs analysis is right after a technology or system has been implemented. In many cases increased productivity will have been realized and there may be available staff time which could be used to address other needs that might have been of lower priority up to this point.

In some instances, the newly implemented system may be causing unforeseen problems. For example, in one organization the implementation of a word processing system increased hourly typing output by 300%; however,

the proofreading department was still proofing at the same rate. The documents were being typed faster but a backlog was created in the proofreading department, causing the waiting time for that service to increase dramatically. From the users' point of view, document processing time had not improved, which meant that the new system was providing no additional benefit. This example clearly illustrates why an identification of needs in other areas affected by or related to the typing function is necessary.

Again with respect to new technology, you may want to expand an application on a system. Many word processing systems, for example, have the capability to perform data processing, communications, or records processing functions. Companies typically use word processing as the introductory technology to office automation. Once the word processing application is successfully implemented, other functional area needs can be addressed to see if the automated features offered by the word processing system software can cost-effectively fill those other needs.

### **The time factor**

The question of time is also raised in planning the study. How long should a needs analysis take? The answer to this question depends on many factors that include the scope of the needs analysis, the functions to be addressed and the size of the area. How many people are going to be involved in this study? When is management expecting the report? Planning here includes creating a schedule that has all the required work steps and assigning responsibility for the timely completion of those steps. It is important that the study conclusion be well timed so that the data can be used while it is still fresh and reflects current conditions. It is critical that this study be performed in as short a period of time as practical. However, one shouldn't skip any key work steps in order to meet a deadline. On the other hand, if a deadline is missed one may have a lot of data that has limited practical use.

“Fourth W  
When—key  
occasions to make  
a needs analysis”



### Where?

While a needs analysis can be conducted for any department or function, we will focus here on the office in general, dividing it into six functional areas comprising document processing and information flow. They are:

1. **Creation**—which includes document processing activities such as dictation and typing.
2. **Storage and retrieval**—relating to filing, records retention and file management.
3. **Reproduction**—including photocopying, duplicating, graphics and printing.
4. **Distribution**—as it relates to the internal flow of paper and mail systems.
5. **Communications**—either by telephone, facsimile, TWX or telex equipment.
6. **Decision support**—consisting of systems addressing the information needs of management as they relate to timely, well-informed decision making.

### Setting priorities

It is much easier in terms of project management to study a specific function as opposed to an entire office. However, it would be a mistake to view a single function in a vacuum. Each of the functional areas of the office impacts and interrelates with the others. While a needs analysis can focus on one function, it should be done with an awareness of the others.

A study that attempts to identify very detailed needs for an entire office operation may be a herculean task. Each function can require volumes of data and analysis. A better approach may be a study that broadly addresses each function in an attempt to identify which requires the greatest need for concentration, the priority or order in which each should be addressed and the potential benefits from improving each area.

The goal is to identify which functions should be addressed in more detail and determine what the immediate and potential improvements in each function will mean in terms of benefits of savings to the organization.

In conclusion, a needs analysis is the vehicle by which the business comes to know itself. Having acquired this knowledge, plans to increase managerial and clerical productivity can be implemented and substantial dollar savings realized.

### A NEEDS ANALYSIS STUDY CHECKLIST

The following checklist provides the steps required in chronological order for conducting the needs analysis.

- Identify the scope of the needs analysis
- Select and organize the study team
- Develop a workplan and study schedule
- Orient those who will be studied
- Use more than one data collection technique
- Use multiple analysis techniques
- Feedback findings to management
- Convert the identified and analyzed needs to system features
- Prepare an office improvement plan

**3● Fifth W**  
Where—the office  
with its six functional  
areas ●●

BUSINESS OFFICE SYSTEMS REQUIREMENTS  
AND EVALUATION CRITERIA

WEIGHING  
VALUE

- 3.25 INSTALLATION EASE - INSTALL EQUIPMENT WITH NO VENDOR INVOLVEMENT.
- 3.50 TRAINING - ON-SITE, SELF-STUDY MATERIAL TAILORABLE FOR ELEMENTARY AND ADVANCED FUNCTIONS. PREFER COMPUTER ASSISTED TRAINING.
- 3.25 DOCUMENTATION/REFERENCE MATERIAL - DOCUMENTATION SHOULD BE DIRECTED TO SPECIFIC AUDIENCES (USERS, SUPPORT PERSONNEL, ETC.) AND IT SHOULD BE EASILY REFERENCED AND COMPREHENDED.
- 5.00 CENTRAL SITE MANAGEMENT AND SUPPORT - THIS INCLUDES: PROBLEM MANAGEMENT; CHANGE MANAGEMENT; COMMUNICATIONS MANAGEMENT; PERFORMANCE MANAGEMENT; AND CAPACITY PLANNING.
- 3.25 ARCHIVING, BACKUP AND RECOVERY - PROVIDE AN EASILY MANAGED FACILITY TO ASSURE DATA BASE INTEGRITY, SYSTEM AVAILABILITY AND GOOD "HOUSEKEEPING" PRACTICES.

- 3.50 COST-EFFECTIVENESS - MUST PROVIDE A BROAD RANGE OF USER FUNCTION AT A REASONABLE COST FOR BOTH, HARDWARE/SOFTWARE, AND COMMUNICATIONS WITH GROWTH FLEXIBILITY.
- 4.25 CAPABILITIES/FEATURES - PROVIDE FOR THE INTEGRATION OF TEXT, DATA, VOICE AND IMAGE.
- 4.00 ELECTRONIC MESSAGE DISTRIBUTION - PROVIDE THE CAPABILITY TO EXCHANGE MESSAGES AND DISSEMINATE INFORMATION.
- 3.75 MANAGERIAL AND PROFESSIONAL SUPPORT - PROVIDE FACILITIES FOR MANAGERS AND PROFESSIONALS TO ACCESS THE INFORMATION AND FUNCTIONS NEEDED TO PERFORM THEIR WORK WITH GEOGRAPHICAL INDEPENDENCE. THIS IMPLIES CONNECTIVITY TO OTHER SYSTEMS FUNCTIONS AND INFORMATION.
- 3.50 MIGRATION TO FUTURE PRODUCTS - PROVIDE INCREMENTAL GROWTH CAPABILITY (GRANULARITY) IN BOTH PROCESSORS AND PERIPHERAL PRODUCTS WITH EASE OF MIGRATION. EQUIPMENT SHOULD MEET USER NEEDS FOR A FIVE-YEAR PERIOD.
- 3.75 RELATIONSHIP TO DP DIRECTION - PROVIDE A GOOD "FIT" WITH OTHER INFORMATION PROCESSING SYSTEMS AND EQUIPMENT. CONFORM TO THE APPROVED COMPUTED RESOURCE ARCHITECTURE.

- 3.50 COMMUNICATIONS WITH OTHER IBM OFFICE AUTOMATION PRODUCTS - PROVIDE INTERCHANGE WITH OTHER DISTRIBUTED AND HOST-BASED PRODUCTS.
- 2.75 COMPUTER APPLICATIONS - PROVIDE THE LINKAGE TO ACCESS AND USE INFORMATION FROM REGIONAL AND HOME OFFICE INFORMATION BASES.
- 3.00 IBM SUPPORT - PROVIDE COMMON SUPPORT INTERFACE, REGARDLESS OF PRODUCTS INVOLVED. EASILY ACCESSIBLE TECHNICAL SUPPORT AND APPLICATION ASSISTANCE IS ESSENTIAL.
- 2.75 USER PROGRAMMABILITY - PROVIDE THE CAPABILITY FOR CUSTOMER APPLICATION PROGRAMMING.
- 4.00 SUPPORT REQUIREMENTS - INCORPORATE SUPPORT WITH EXISTING ORGANIZATIONAL UNITS WITH MINIMAL RESOURCE IMPACT. EQUIPMENT SHOULD REQUIRE NO ON-PREMISES DATA PROCESSING SUPPORT.
- 2.50 ERGONOMICS - EQUIPMENT SHOULD MEET ERGONOMIC DESIGN FACTORS.

WEIGHING VALUES

- 5 = CRITICAL  
 4 = VERY IMPORTANT  
 3 = IMPORTANT  
 2 = SOMEWHAT IMPORTANT  
 1 = NEGLIGIBLE IMPACT

POINTS

TEN POINTS TOTAL PER FACTOR ALLOCATED TO EACH SYSTEM, BASED ON RELATIVE STRENGTH/WEAKNESS RATING.

