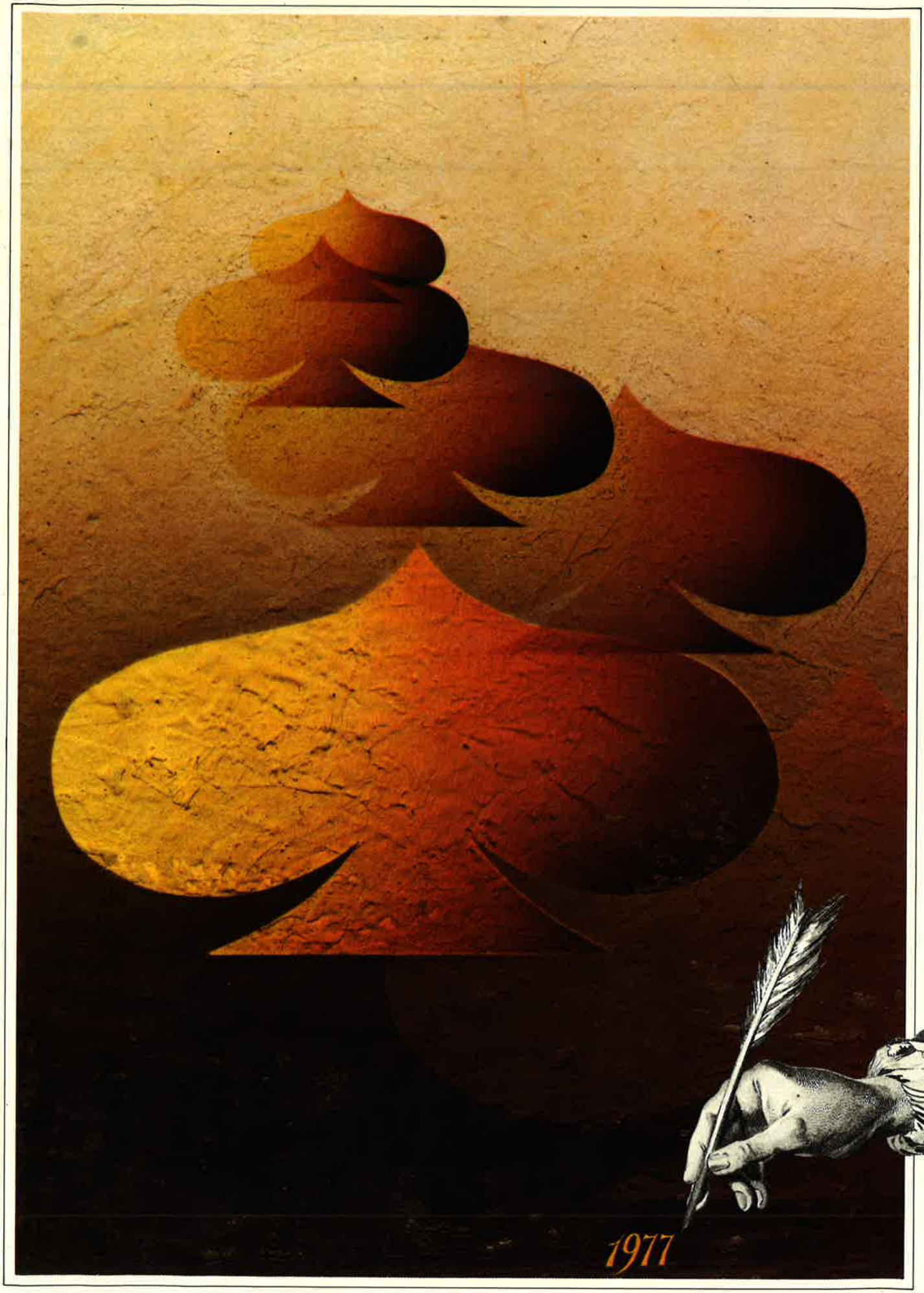

CAP GEMINI SOGETI

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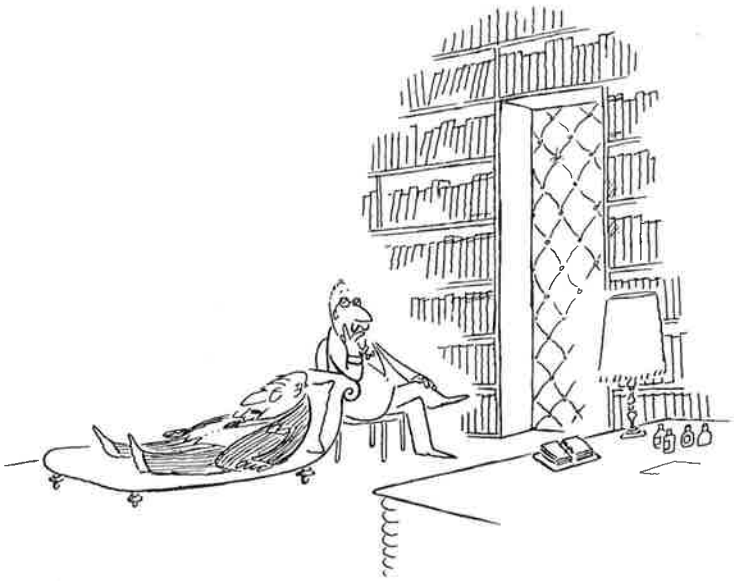

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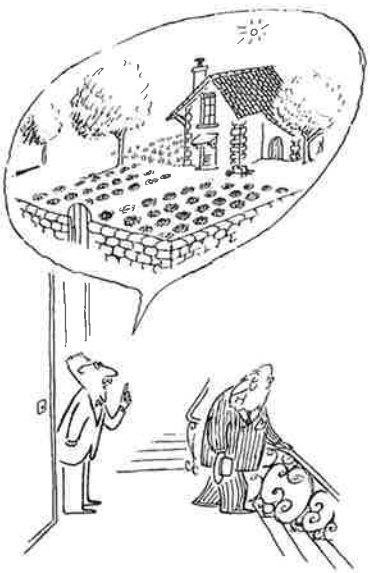

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cont. p.33

1977

Tenth anniversary of SOGETI,
which became CAP SOGETI, then CAP GEMINI SOGETI;
one office in Grenoble in 1967,
fifty branches in fourteen different countries
ten years later.

Tenth profitable financial year, 8000 customers,
the same Chairman,
now leading 2500 employees,
including more than 2000 professionals.

CAP GEMINI SOGETI
services thousands of public and private sector
organizations, contributing to the quality
of management, production and services
they in turn can offer.

FISCAL YEAR 1977	in millions of US $
CONSOLIDATED REVENUES	90
GROSS CASH FLOW	6.4
NET INCOME AFTER TAXES	2.3
SHARE CAPITAL AND RESERVES	12.5
TOTAL OF BALANCE SHEET	59
NUMBER OF PROFESSIONAL STAFF	*2 033*
TOTAL NUMBER OF EMPLOYEES AS AT 31 DECEMBER 1977	*2 440*

CAP GEMINI SOGETI

EXPLANATORY SUMMARY OF THE 1977 ANNUAL REPORT

In Western Europe, more than half of the employed people are working in the service sector rather than manufacturing or agriculture. This proportion is close to two thirds in the USA.

These services respond to a variety of needs (entertainment, education, transport, distribution,etc.) and are part of an even wider realm that includes such elements as universities and banks, hairdressers, art galleries, hotels, time-sharing companies, or management consultants.

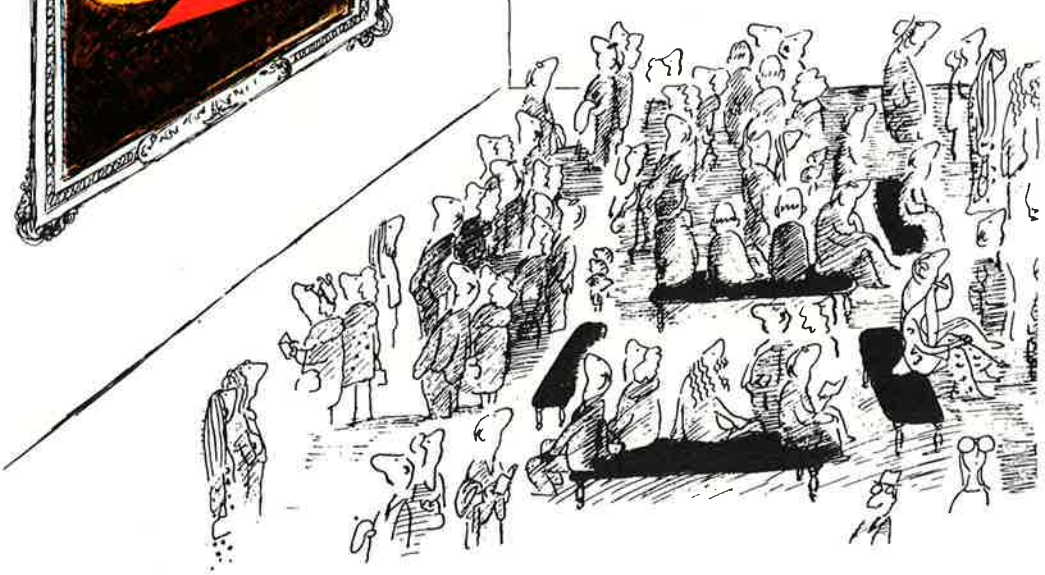
Very few statistics are available regarding the service sector, due to its diversity and its dependence on know-how that is difficult to quantify. Thus few recognize its importance to national economies. Perhaps we shall have to demand a Minister for Services before proper recognition can be achieved.

Within this diverse service sector, computer services have gradually gained visibility, for at least three reasons:
- they are dealing with what is called «advanced technology»;
- this field experiences a high growth rate - around 20% per year;
- worldwide, some computer service companies have a revenue over $ 200 million (CAP GEMINI SOGETI, the biggest European company, will reach about $ 100 million in 1978).

The objective of this annual report is to present a snapshot of this complex and fast-growing computer service industry, so the organization and the services of its companies might be more clearly understood and appreciated by its present and potential customers as well as the general public. This report focuses specifically on the «intellectual» sector - companies like CAP GEMINI SOGETI that mainly provide know-how based consulting and software services rather than machine-based services. This know-how may be difficult to quantify in a balance sheet but it is the most important asset for such a firm, and creates the basis for further growth of the sector, and for the overall efficiency of modern industry, commerce, and public services.

« WHY SHOULD A COMPUTER SERVICE COMPANY BE USED ? »

What technical, human and methodological resources available in the service company persuade the user to delegate tasks he might otherwise have to perform himself? What specialized knowledge and tools can be hired instead of acquired? A computer service company answers these questions by offering its clients:



« WHO USES COMPUTER SERVICE COMPANIES ? »

Each case is unique; each need is specific; nevertheless, with a little simplification we can identify three main categories of users, who usually need three very different kinds of services:

« WHICH COMPUTER SERVICE COMPANY SHOULD BE CHOSEN ? »

There are more than 1 000 computer service companies in Europe, and over 200 in France alone (excluding the computer-based services vendors). Choosing a data processing service company is as important as choosing a trustworthy employee, because the computer service company is a partner in organizing a vital function of a firm. What criteria then can help make this selection? We believe three are paramount:

« WHY CAP GEMINI SOGETI ? »

We believe that the ten year history of CAP GEMINI SOGETI demonstrates that we meet these criteria, and more. Thus, we have published this report to make people more familiar with the experience we have gained in a decade of rapid growth and the organization we have developed to handle continued growth. The final section of this report includes:

ADVANCED METHODS FOR SOFTWARE PRODUCTION

The products of computer service companies are less physical than intellectual: the SOFTWARE that allows every organization in the public or private sector to use its data processing hardware in a profitable and harmonious way for its own specific purposes. Producing software is thus the primary justification for the existence of computer service companies, as well as their major activity. This demands the ability to attract, train, and retain large numbers of people who are expert in software.

Like a nuclear power-plant manufacturer or a car-maker, a software company, to be effective, must develop know-how, methods, and tools specifically adapted to its own final product. Like jigs and dies for autos, software methods and tools must be built and maintained by experts.

In an automobile factory it is possible to measure the number of seconds each task in the production process will take as the car moves automatically down the production line. Building software, though, is different. Not only is each «product» different, but in addition, the human «machines» who are the primary element in software production cannot be measured so precisely. This tends to create an irritating uncertainty in four crucial aspects of software: the degree of completion, the delivery date, how well the user's real needs have been expressed and met, and how the resulting software will actually perform. CAP GEMINI SOGETI has created a set of methods and tools, scaled to the size and technical complexity of different kinds of software projects, to reduce this fourfold uncertainty to an absolute minimum.

Let us emphasize the need for methods and tools, because good methods alone cannot assure success in software production. Tools (which are themselves built up from software) must be added so that good methods can be used more easily and their proper use can be controlled.

The development of this CAP GEMINI SOGETI methodology - which has already demonstrated its effectiveness in helping meet every deadline and specification - has been firmly based on five principles:

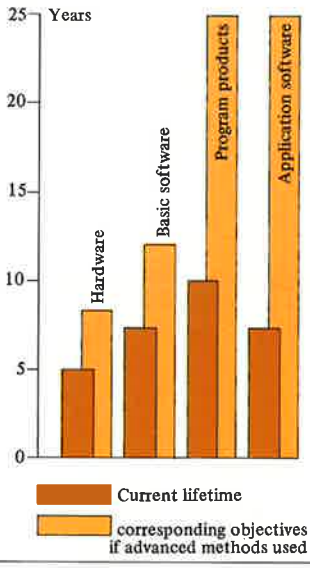
1/ Cutting a project up into independent phases that can be achieved in succession without having to double back.
2/ Availability of all the information relating to a project thanks to its filing on a single data processing medium accessible to everyone.
3/ Massive use of software tools at every step, particularly in the crucial phases of analysis and documentation.
4/ The ability to adapt the utilization of the methodology - and its cost - to the size of the project.
5/ Easy training of the people working on the project.

The user has the right to expect from his computer service company even more than production know-how that can reduce these uncertainties. It is also his right to demand that the software developed for his needs can survive inevitable changes in functional specifications or environmental modifications that may be imposed on him over time.

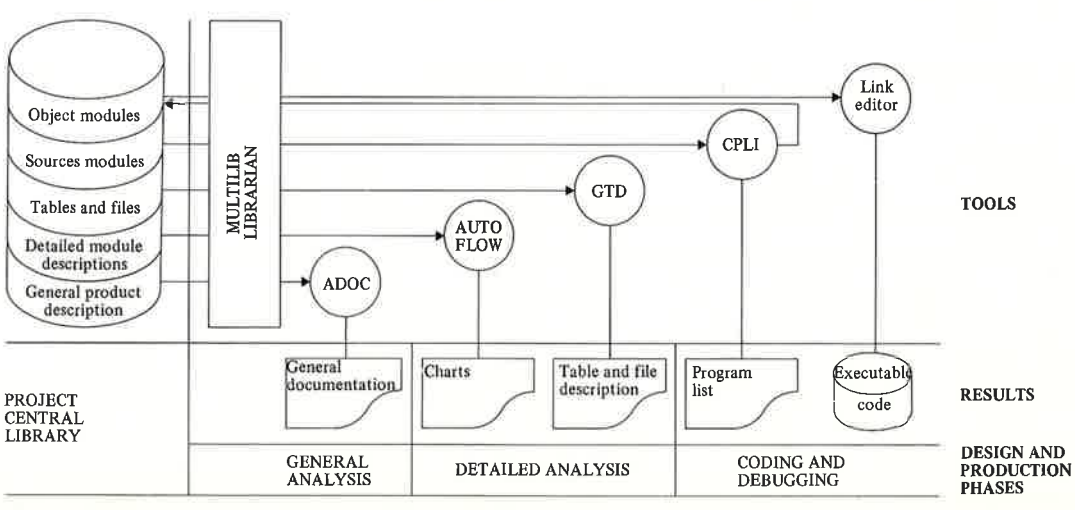
This is why the methods CAP GEMINI SOGETI uses take into account the objective of «long life software». This is achieved by applying three concepts to the systems architecture:

- **Portability** that permits the software to be run on a different computer at no additional costs.
- **Structural stability** that allows the software to evolve easily through unavoidable functional changes.
- **Location of interfaces** that lets the user change a hardware or software element without changing the whole system.

IMPACT OF ADVANCED METHODS FOR SOFTWARE PRODUCTION ON SOFTWARE LIFETIME



CAP GEMINI SOGETI METHODOLOGY: the use of tools in software production



A PROGRAM DOCUMENTATION AND MAINTENANCE SYSTEM

Change is inevitable. Changes in the outside world, or inside an organization, or in the hardware configuration, often demand that a program be changed to match. The introduction of Value-Added Taxes in European countries, for example, affected many thousands of programs, and each change in VAT demands more changes in the programs. But a program cannot be modified or updated unless the intermediate operations leading to its results are known. Users cannot afford to re-write their software completely every time a change is necessary.

Thus the two operations that permit a program to have a visible existence on the one hand, and a survivability and resilience in the face of change on the other, are **documentation** and **maintenance**. Documentation means developing a complete set of documents that describes the specifications, sets milestones for the analysis, and lists every instruction in the program. Maintenance amounts to the updating, repair, or adaptation of existing programs.

Maintenance is the service that allows a software product to LIVE, to ADAPT itself, to DEVELOP, year after year.
- Maintenance service finds out the causes for errors detected when the product is used (usually in extreme conditions) and makes the necessary corrections.
- Maintenance service adapts the product to every evolution of the computer configuration or the operating system.
- Maintenance service modifies the basic functions of the product as experience grows (improving the man-machine dialogue, for example).
- Maintenance service develops and integrates into the product new functions imposed by changes in the usage itself, such as modifications in the law, or extension of a system to a new category of users.

A computer service company, because it rapidly gains so much experience of the changes to which its programs are subject, normally designs them in such a way that they can be maintained as easily as possible. Then it documents them thoroughly as the production work proceeds. The next step is to develop standard ways to present the documentation effectively, as well as a set of tools and methods for easy maintenance, whether it is done by the user or the service company.

CAP GEMINI SOGETI's tools for software documentation and maintenance are being used and have been developed according to the following principles:

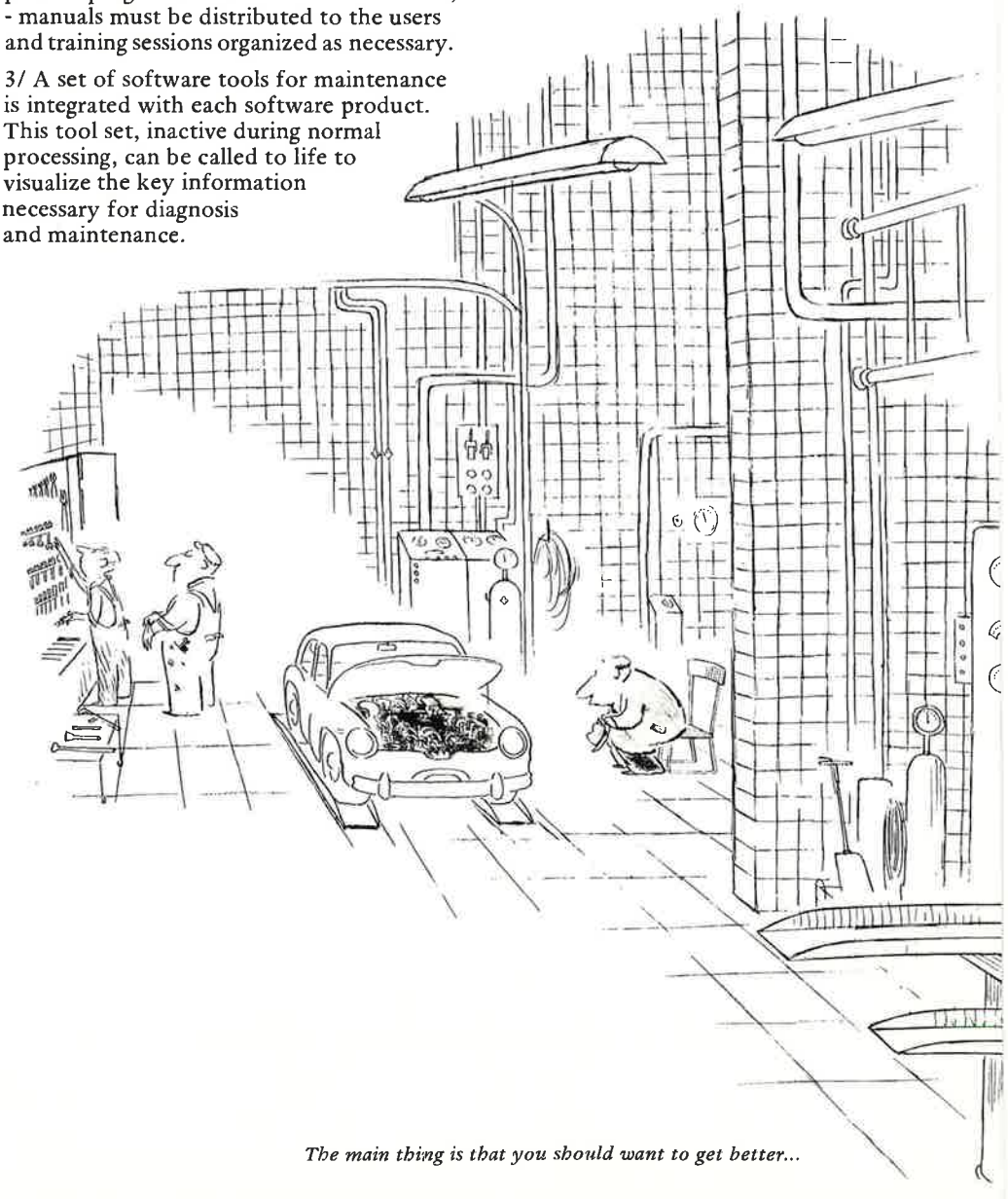
1/ The ADOC software system (developed by CAP GEMINI SOGETI) handles automatic composition, make-up, and updating of documentation.

2/ Maintenance must meet the following requirements:
- at every moment of its existence a program must match the specifications as documented, and the corresponding flow charts, tables, and maintenance files must be rigorously updated,
- safety procedures must be set up to protect programs and documentation alike,
- manuals must be distributed to the users and training sessions organized as necessary.

3/ A set of software tools for maintenance is integrated with each software product. This tool set, inactive during normal processing, can be called to life to visualize the key information necessary for diagnosis and maintenance.

4/ The software must be as independent as possible from the hardware and its operating system, so that the software can not only undergo normal maintenance but can also be modified to meet changes of configuration, operating system, and even central computer hardware.

CAP GEMINI SOGETI organizes this independence on two levels:
- **At the systems architecture level**, the designer must envisage his product as a logical ensemble that could be adapted to any equipment. The link with a particular hardware environment is achieved through a strictly defined interface.
- **At the programming level**, several precautions are required. On one hand, the development must take place in a high - level language, or better yet, in a language that is itself hardware-independent. On the other hand, the interfaces with the computer system must be done through specific modules. Finally, the classical functions such as table management must be accompanied by maintenance tools integrated into the software product.



The main thing is that you should want to get better...

A RECOGNIZED ABILITY TO MANAGE LARGE PROJECTS

Large computer-based projects would still be very risky ventures in financial, technological and human terms if experience, now relatively abundant in such applications as shipping, seat reservations, weapons, military command, transportation, or telephone switching systems and networks had not enabled large computer service companies to acquire the necessary human and methodological resources.

The main hazards facing any organization contemplating the acquisition of a large system are cost and deadline overruns leading eventually to a deterioration of the organization's own primary business and, finally, the need to divert top management to trouble-shooting problems in computer development.

Powerful software firms can eliminate these hazards because they offer technical resources and experience in large project management. Furthermore, they are able to guarantee that the project will be continuously monitored and controlled in logical, coherent terms, from the initial design phase - even before a decision on project implementation - until final acceptance.

To a software firm, a «large» project is one that has some (or frequently all) of the following characteristics:

- a budget of at least $ 2 million exclusive of hardware, corresponding approximately to a 15-man team over a two-year period;
- a technically complex system (e.g. several linked computers, high reliability requirements, low response time and high throughput, etc.);
- involvement of a number of suppliers and subcontractors;
- involvement of several technical disciplines other than data processing (e.g. a computer controlled laser cutting device to be used for producing aircraft parts);
- compilation and management of a large real time database (e.g. hundreds of millions of characters).

The methods used for project scheduling vary according to geographic dispersion, working-team integration, the number of outside parties to the transaction, and so on. Nevertheless, several basic principles must be followed, and as far as CAP GEMINI SOGETI is concerned, the following rules are applied under all circumstances*:

1/ A single qualified Project Manager must be vested with all necessary operational authority and is responsible to a mixed contractor/customer control board;

2/ Work breakdown analysis and cost accounting are the essential foundations for good project control; costs and progress are measured on a comparable basis so that the value added as a result of work done and money spent can be controlled throughout the life of the project;

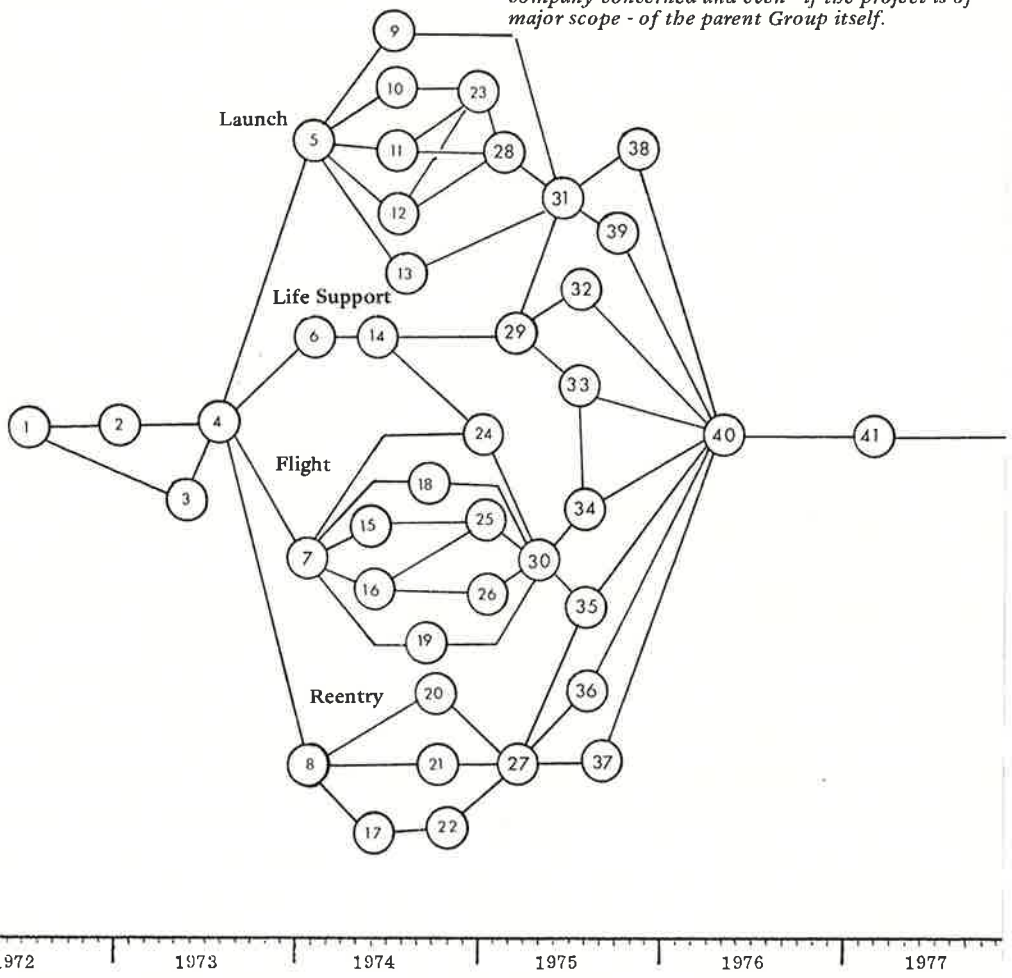
3/ The project monitoring team must be independent of the project management;

4/ Functioning subsets of the final system are designed, tested and delivered for the customer to use while the overall project is developing;

5/ Technical audit (see page opposite), also independent of project management, controls the quality of all individual items of work in accordance with formal standards and methods.

** It should be noted that a decision to become a prime contractor for a large project is submitted to the top management committee of the company concerned and even - if the project is of major scope - of the parent Group itself.*

Aerospace owes its success more to large project management techniques than to recent scientific discoveries.



SYSTEMATIC PROJECT AUDITING

The two most pressing requirements for successful software development are the productivity of the implementing team and the quality of the final product. To satisfy these simultaneously demands not only the use of effective and well-tested development tools and methods, but also the application of systematic and logical management. Auditing the technical, administrative, and financial aspects of a project is an important key to the success of a software project, and is a technique that could be employed profitably by many computer users.

Project auditing consists of a formal review and examination of all the records underlying a project, including product documentation, project organization, successive stages of progress, tangible results of the work so far accomplished, and the working methods and development techniques employed.

THREE TYPES OF AUDIT

The audit must be stringent and timely, yet it must also meet these objectives within the real-world constraints of available manpower and costs. Therefore CAP GEMINI SOGETI has defined three different types of audit to make sure the task and the resources used are well-matched:

1/ **The checking audit**, *usually limited to an examination of project records. It is aimed at risk identification and a report of issues which cannot be resolved immediately by the project auditors.*

2/ **The administrative audit**, *involving a review of every aspect of the project's management (including records, progress, methods used, resources, planning, etc.), concluding with a report as described on the opposite text.*

3/ **The technical quality audit**, *based on an analysis of specifications, designs, programs, and testing methods. This audit concentrates primarily on the product's quality control.*

CAP GEMINI SOGETI has developed its own audit system, PAMAS (Project Audit Methodology and Auditing Standards) to meet these needs. Last year 17 Project Auditors were trained in its use. Once a project reaches a given level of scope or complexity, or once a special problem emerges, a project is systematically audited. In every instance, the auditors are brought in from outside the operational unit that is doing the project.

The results of the audit are presented in a report that includes the following information:

- status of the project at the time of the audit, compared with both the contractual obligations and the customer's expressed expectations;
- the auditor's forecast of the completion date for the project, as well as its probable cost and quality, with performance compared to the initial specification;
- the development techniques and methods actually used;
- a survey of the controls applied to the project, with an identification of the sources (and estimated extent) of the contractor's exposure to risks of potential losses;
- a list of any critical issues requiring special management attention and action;
- conclusions that can be drawn for this project, and lessons to be learned for future projects.

Thus the audit results in a diagnosis of project status, a search for the causes of any cost or time overruns, and identification of necessary corrective actions. When the audit is carried out and documented stringently, it also yields a wealth of information to improve the computer service company's methods and management, with consequent benefit to its customers.

—Maybe it'll be easier to make up your mind when we get back: Florence, the kids, the house, that's security. Whereas with Annie, of course, it's the unknown.

SHARING TASKS AND RESPONSIBILITIES

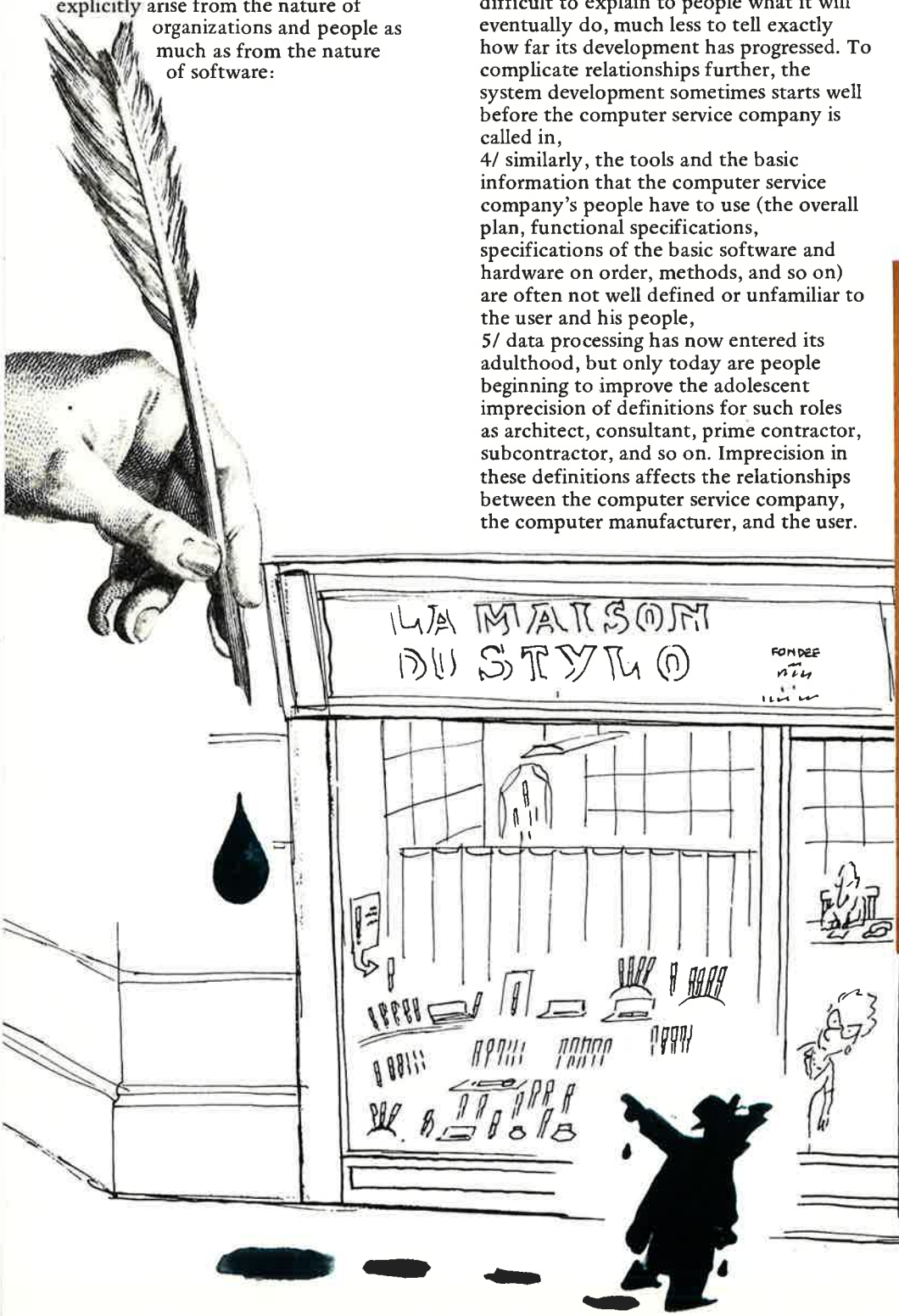
Whether he calls in the computer service company as a consultant or to develop software, the user usually wants to delegate as much and as cleanly as possible, so he can concentrate more of his attention on his primary tasks. Normally, he also wants each party's tasks, responsibilities, commitments, and boundaries to be defined clearly.

Defining these responsibilities and tasks is difficult, but the exercise of doing so carries a concomitant value for both the contractor and the client because it clarifies expectations and eliminates potential misunderstandings. Some of the difficulties in sharing responsibilities explicitly arise from the nature of organizations and people as much as from the nature of software:

1/ within an organization, data processing affects the intimacy of existing information channels and often impinges on the relationships between departments; thus it can sometimes heighten awareness of underlying problems or phenomena everyone had previously ignored,
2/ in the course of software development, people foreign to the data processing department often have to intervene, as consultants or even decision-makers (approving some design elements, for example). It is often difficult to guarantee their availability or forecast their reactions,
3/ usually the product being developed is virtually invisible. Furthermore, it is difficult to explain to people what it will eventually do, much less to tell exactly how far its development has progressed. To complicate relationships further, the system development sometimes starts well before the computer service company is called in,
4/ similarly, the tools and the basic information that the computer service company's people have to use (the overall plan, functional specifications, specifications of the basic software and hardware on order, methods, and so on) are often not well defined or unfamiliar to the user and his people,
5/ data processing has now entered its adulthood, but only today are people beginning to improve the adolescent imprecision of definitions for such roles as architect, consultant, prime contractor, subcontractor, and so on. Imprecision in these definitions affects the relationships between the computer service company, the computer manufacturer, and the user.

These difficulties are obviously not attributable to the entry of the computer service company. They are simply inherent in the use of data processing in human organizations. The contribution of the computer service company may be to help identify and overcome them.

It is CAP GEMINI SOGETI's policy that a written contract be developed before taking part in another organization's project so that each party has a clear awareness of the needs, objectives, and expectations of the other. Such a contract, spelling out the responsibilities and tasks, can help the user state his needs more precisely, schedule his software development sensibly, get a better estimate of the time and money involved in the project, install good control procedures, and more. Even if some tasks must remain imprecisely defined or changes take place as the project grows, the existence of such a contract ensures that the project starts more tidily and runs better.



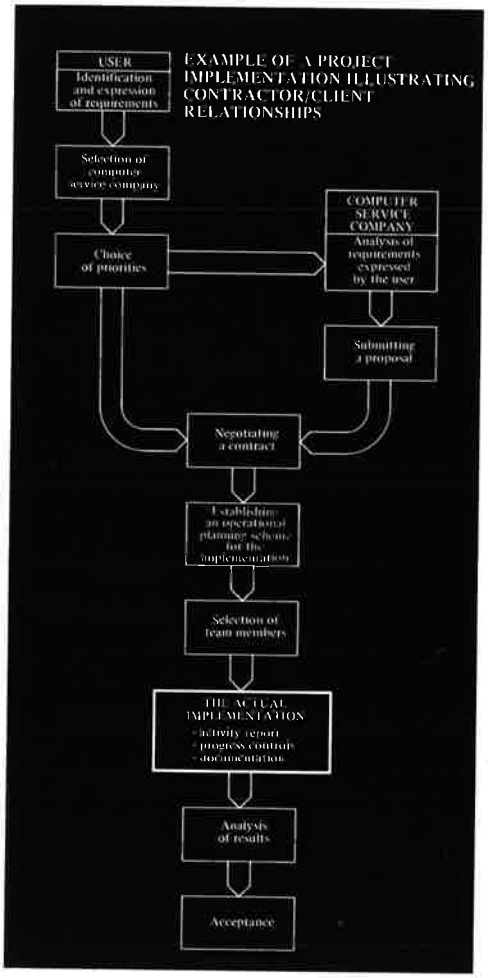
The content of a contract

Precise guidelines should always rule the entrance of a computer service company into a user's project. These should cover the following elements of the relationship:

- **definition of the job**: this might be achieving an overall EDP plan, designing and developing basic software, studying a new application, supplying a training course on systems structure, or some other task. The job is also defined by such papers as the specifications report, or standard terms of reference or an RFQ, or a detailed analysis report that is accepted by both parties.

In complex systems, the user sometimes deals with more than one computer service company or computer equipment manufacturer. In this case it is even more important to spell out the technical and legal limits, roles, and responsibilities for each party (consultant, prime contractor, subcontractor, manufacturer, etc.).

- **necessary tools**: developing software to meet the user's specific needs often necessitates the use of computer hardware and software (as supplied by the manufacturer, or program products the user has purchased). These must be identified clearly, and their location and availability should be spelled out.



- **delivery date**: both parties should estimate the delivery dates they expect and then compare them, discussing factors that could delay delivery such as technical contingencies, delay in equipment delivery, problems or changes in the manufacturer's operating systems, delays in decisions that must precede detailed design, and so on. These elements should be spelled out in the delivery clause (differently according to the type of contract) along with renewal and termination terms.
- **conditions of work**: this deals essentially with the physical conditions the computer service company employees can expect such as: site location; working hours; functional and technical link with the user (as the management, the social and the financial relationship of each expert remains with the computer service company); the extent and limits of the project leader's role; direct or indirect access and use of computer equipment; contingency plans for replacement in case of illness or accident; handling of professional and trade secrets; clauses to assure the non-hiring of the contractor's employees by the user; and so on.
- **progress and acceptance**: the computer service company must report periodically to the user regarding the activity of its employees on the contract, sometimes reporting for each individual (the normal period in CAP GEMINI SOGETI contracts is weekly). The demand for such activity reports, along with the means for their acceptance by the user, should be spelled out in the contract, as well as the conditions and procedures for acceptance of the work itself. The acceptance clause should state precisely how acceptance test data be prepared and handled.
- **price and payment terms**: services are usually billed on a monthly basis (which permits project costs to be monitored strictly). However, the type of billing varies according to the type of contract. Prices are of course subject to revision according to a cost-of-living index spelled out in the contract.

Because of their people-dependent nature, computer service companies spend more than 70% of their outgo in salaries, usually paid at the end of the month. Consequently they must require cash progress payments from their clients, and strict adherence to payment schedules.

- **legal aspects**: a conciliation clause may be included in such a contract, as well as a definition of each party's rights to sell, use, or copyright the product.

THE THREE TYPES OF CONTRACTS

1/ Time and Materials contract

A computer service company invoices its services according to the amount of time its professionals spend on the project. This type of contract is best for both parties under certain conditions: if the specifications for the work are still imprecise or difficult to enunciate clearly; if the project includes several tasks of different kinds in succession, such as a feasibility study followed by pre-programming work; if the hardware and operating systems, or standard applications software, are not yet installed or reliable; if there is likelihood that the project will be affected by changes in the organization, the budgets, the conditions of work, or any other factors that may impact the scope, the objectives, the planning, or implementation of the project. The T & M contract is particularly efficient when the client and the contractor have a frank and open relationship that allows them to contemplate working with maximum synergy.

2/ Fixed price contract

In this contract the final product is billed to the client at the price spelled out in the contract. Payments are due according to a schedule determined between them. (A first payment of about 30% is usually expected when the contract is signed). Contrary to the T & M case, this fixed price is based on the assumption that no changes will be made in the definition or in the conditions of development of the project. This perfect situation is sometimes difficult to achieve, especially when a project is dealing with «live» business applications. In a fixed price contract, therefore, the computer service company must anticipate in its price a certain amount of risk, and must manage the project with a minimum of risks. In particular, the service company usually has its teams working in its own offices, strictly following the project initial specifications.

3/ Guaranteed completion contract

Fixed price contracts often cause problems in the relationship between the contractor and the client. Some people argue that it organizes a permanent conflict between the two because the moment the contract is signed the client tries to get more work done for the agreed price, and the vendor tries to stay as close as possible to the original definition of the work. This problem has led to the invention of a third type of contractual relationship, the guaranteed completion contract combining the merits of the other two - from time and materials contracts the flexibility of the specifications, progress payments, and active participation in development; from fixed price contracts the guarantee of delivery and acknowledgement of project costs. At the same time, because it is based on a cost ceiling beyond which the project will not go without redefinition or renegotiation, the guaranteed completion contract enhances a climate of cooperation. In this case provisions are made for revisions in the specifications and development priorities defined at the beginning, along with revisions in the price, delivery dates, and schedule of payment. Because it depends on understanding and trust between the parties, the guaranteed completion contract is best used when the relationship has already been built, often by a previous T & M project, with a successful outcome for both parties.

A COMPLETE SPECTRUM OF QUALIFICATIONS

The men whose professions and qualifications are described on the opposite column have all the technical skills needed for the design and production of software, the implementation of sophisticated computer systems, and, beyond that, they have the breadth and experience for management consulting. In fact, as soon as computer service companies reach a certain size they are usually able to create teams that contain all the desired qualifications for any task, teams capable of working on any model of computer, through any operating system, with technical skills that range from general applications (such as inventory control, personnel administration, or production control) to the more specific knowledge needed for work in particular sectors (such as insurance, transport, distribution...), and the ability to use a variety of techniques for data processing and related technologies (such as communications, multiprogramming, databases, etc.)

However, the efficiency of teams from computer service companies depends at least as much on the personal qualities of the members as it does on their skills. These qualities should include open-mindedness — they must adapt constantly to new problems and situations; technical readiness — the ability to grasp new techniques and applications quickly; physical mobility — they must be willing and able to travel frequently; professional ethics — respect for trade secrets, proper use of their freedom of action, respect for and awareness of the structure and customs of the client firm, and so on.

These personal qualities and technical skills are the ones that computer service firms respect, search for, and try to develop in their employees. CAP GEMINI SOGETI, for example, seeks them in a number of ways :

- First, on recruitment, when tests and interviews are used to make sure that the candidate has adequate basic training.
- Throughout his career the employee has systematic discussions with his management, as well as periodic assessments of his work. At CAP GEMINI SOGETI, for instance, assessments and promotions in each company are discussed and decided by a General Management Committee. Twice a year this committee spends one or more days on the subject, according to the number of people in the company.
- The employee is given life-long training, above and beyond the realm of data processing techniques, either through courses and seminars or through practical training on in-house projects.

THE QUALIFICATIONS OF PROFESSIONAL COMPUTER SERVICE COMPANY PERSONNEL

Although there are slight variances in the names for different jobs from country to country, the following levels of know-how and responsability are generally recognized :

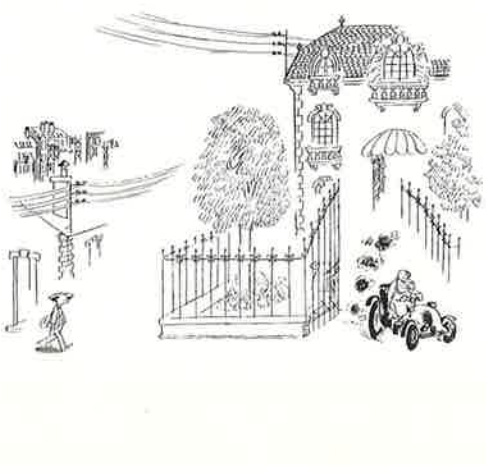
Managing Consultant :
He is expert in one or more computer system techniques, applications, or industries. On completion of a special assignment he is able to submit an appraisal report with his expert conclusions and recommendations. He also has qualities of leadership, including the ability to explain to people the structural or technical changes he has suggested and to gain their cooperation in implementing them.

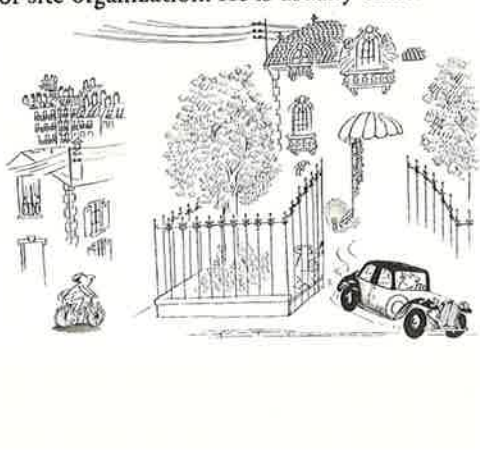
Chief Systems Engineer :
He is an engineer who may be considered an expert in data processing and in his own speciality, by virtue of his own research work, the success of large projects he has managed, or his reputation in a professional or applications or industry realm. He is usually advisor to his manager on technical and commercial levels, but he could also be the technical head of the computer service company's activities relating to a particular industry, or he could be given effective control of a large project.

Senior Systems Engineer :
He has a real aptitude for directing and co-ordinating work on several sites at one time. He can also work effectively with the directors of an important client firm. He might be in charge of a medium-sized project, or be acting as a consultant to other teams in his own speciality. He can be given an important commercially-oriented task, such as studying proposals to be submitted for a complex system.

Project Manager :
He is responsible for implementing a project. His job is to take charge of organizing and planning the project, using suitable techniques and methods for the particular challenge, dealing with the normal problems of data processing techniques, calling in expert resources as necessary, and controlling the teams he has assigned to the project.

Systems Engineer :
He is a technical specialist working under a project manager on functional analysis or site organization. He is usually either





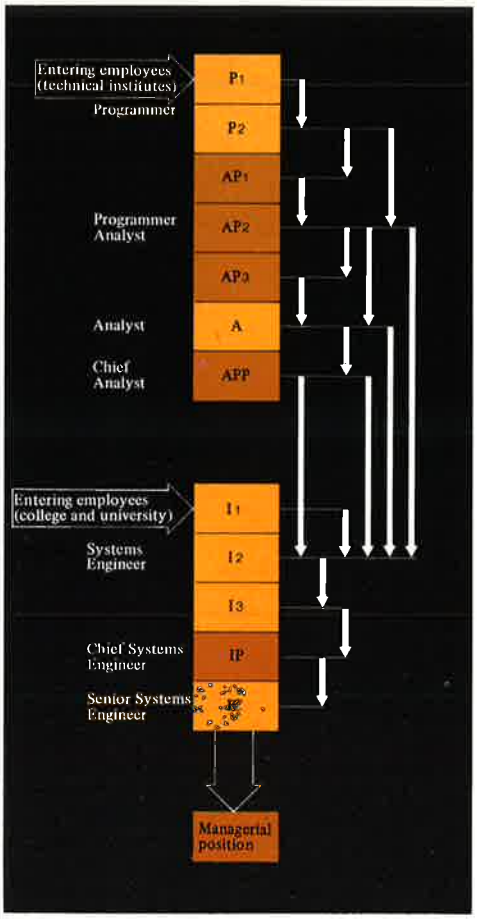
a chartered engineer or a technician who has been promoted because of his outstanding professional skills. In any case, he has a solid background in systems architecture, and in programming. He is also an expert in practical system design, with a good general education and a thorough knowledge of the client firm and its culture.

Systems Analyst :
He is, by definition, the dialogue man. He is a thoroughly experienced programmer with a good knowledge of operating systems, applications, and functional and detailed analysis. He carries out functional analysis from the user's specifications or from a simple definition of the user's objectives. He is capable of taking part in the design of information systems. He is also responsible normally for the program's linkage, for functional tests, and for putting the programs into operation. He may be required to take part in the programming work as well.

Programmer-Analyst :
He is capable of programming very complex sequences from a detailed analysis. He can also carry out the detailed analysis from a functional analysis. He is usually responsible for successful testing of the assembled programs corresponding to his analyses.

Programmer :
He has the necessary technical knowledge to write out and debug programs from an analysis, and, if necessary, to write them from general flowcharts. Either at college, with a user, or at CAP GEMINI SOGETI: he has gained command of at least one computer language and learned suitable programming techniques. He can organize his work, including operating flow charts, making up test data, creating compilations and tests, and immediately producing the corresponding documentation.

BUILDING A CAREER IN A COMPUTER SERVICE COMPANY



Contrary to the fairly widespread idea that young data processing professionals simply use service companies as springboards when they have gained sufficient experience, the stability of employment in firms like CAP GEMINI SOGETI demonstrates that it is possible to make a fascinating career in a computer service company.

The arrows on the diagram show, for example, the promotion channels that are possible within a typical French company, part of the CAP GEMINI SOGETI Group. As it can be seen from some of the arrows (the direct promotion from AP2 to grade 2 systems engineer, for example), outstanding people who are recognized by the Management Committee as capable of holding technical responsibilities can bypass certain grades. These «Quick promotion channels» are not confined to technical positions, but can also lead to responsible positions in commercial or semi-commercial areas.

Promotion opportunities naturally depend on the growth of the market for computer services, particularly software services. That growth, rather than slowing down as some had predicted, seems to have a bright future. In the next five years, according to a recent survey by EDP EUROPA, the software services market should grow at an average rate of 16% per year. The chart herebelow shows, in particular, that subcontracted software will grow at the highest rate (except for terminals and communications equipment) - a rate faster than central processing units and software developed by the user himself. In Western Germany, for example, subcontracting of software to computer service companies will from now until 1982 grow to 10% of total data processing expenditure, compared to about 7% today. The total expenditure itself will have increased almost 60% in the same period.

EDP USER EXPENDITURES, 1977 AND FORECAST 1982

EXPENDITURE CATEGORY	UNITED KINGDOM					WEST GERMANY					FRANCE				
	1977		1982			1977		1982			1977		1982		
	$ million	% total exp.	$ million	% total exp.	% growth 82/77	$ million	% total exp.	$ million	% total exp.	% growth 82/77	$ million	% total exp.	$ million	% total exp.	% growth 82/77
HARDWARE															
Cpu's & Peripherals	1.157	35,4	1.811	33,0	9,0	1.730	30,0	2.921	31,0	10,9	1.349	29,0	2.150	28,5	9,6
Terminals & Communications	95	2,9	214	3,9	23,7	231	4,0	566	6,0	18,7	159	3,4	377	5,0	18,8
Other hardware	121	3,7	165	3,0	6,3	173	3,0	273	3,0	9,5	93	2,0	151	2,0	10,0
Subtotal hardware	1.373	42,0	2.230	41,0	10,4	2.134	37,0	3.040	40,0	11,5	1.601	34,4	2.678	35,5	10,9
Consumables	248	7,6	439	8,0	12,1	328	5,7	500	5,5	8,7	329	6,9	482	6,8	10,2
SOFTWARE															
On-site developed	654	20,0	933	17,0	7,4	1.269	22,0	1.773	19,5	5,8	910	19,6	1.320	17,5	7,5
Outside developed	157	4,8	330	6,0	16,1*	392	6,8	865	9,5	17,2*	312	6,8	764	10,0	15,3*
Subtotal software	811	24,8	1.263	23,0	9,2	1.661	28,8	2.638	29,0	9,7	1.222	27,6	2.084	27,5	10,2
Other	306	11,2	825	15,0	17,6	550	9,2	773	6,5	8,9	651	14,0	1.207	16,0	13,0
Operations	471	14,4	713	13,0	8,5	1.144	19,3	1.647	17,0	7,0	837	18,0	1.132	15,0	6,2
Total expenses	3.269	100,0	5.488	100,0	11,0	5.768	100,0	9.100	100,0	9,5	4.650	100,0	7.543	100,0	10,2

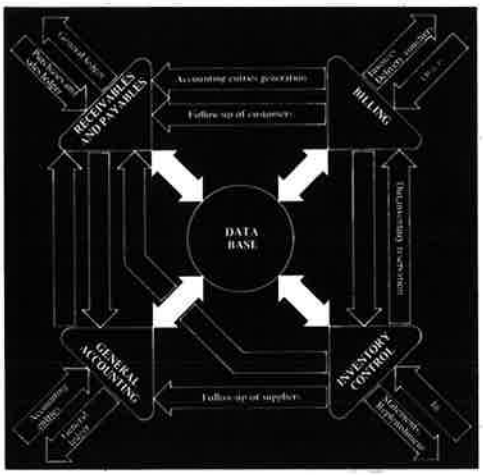
THE NEW USER

The new computer user is usually either a small or medium-sized firm, or else a decentralized unit (such as a warehouse, a factory, or a regional office) belonging to a larger organization.

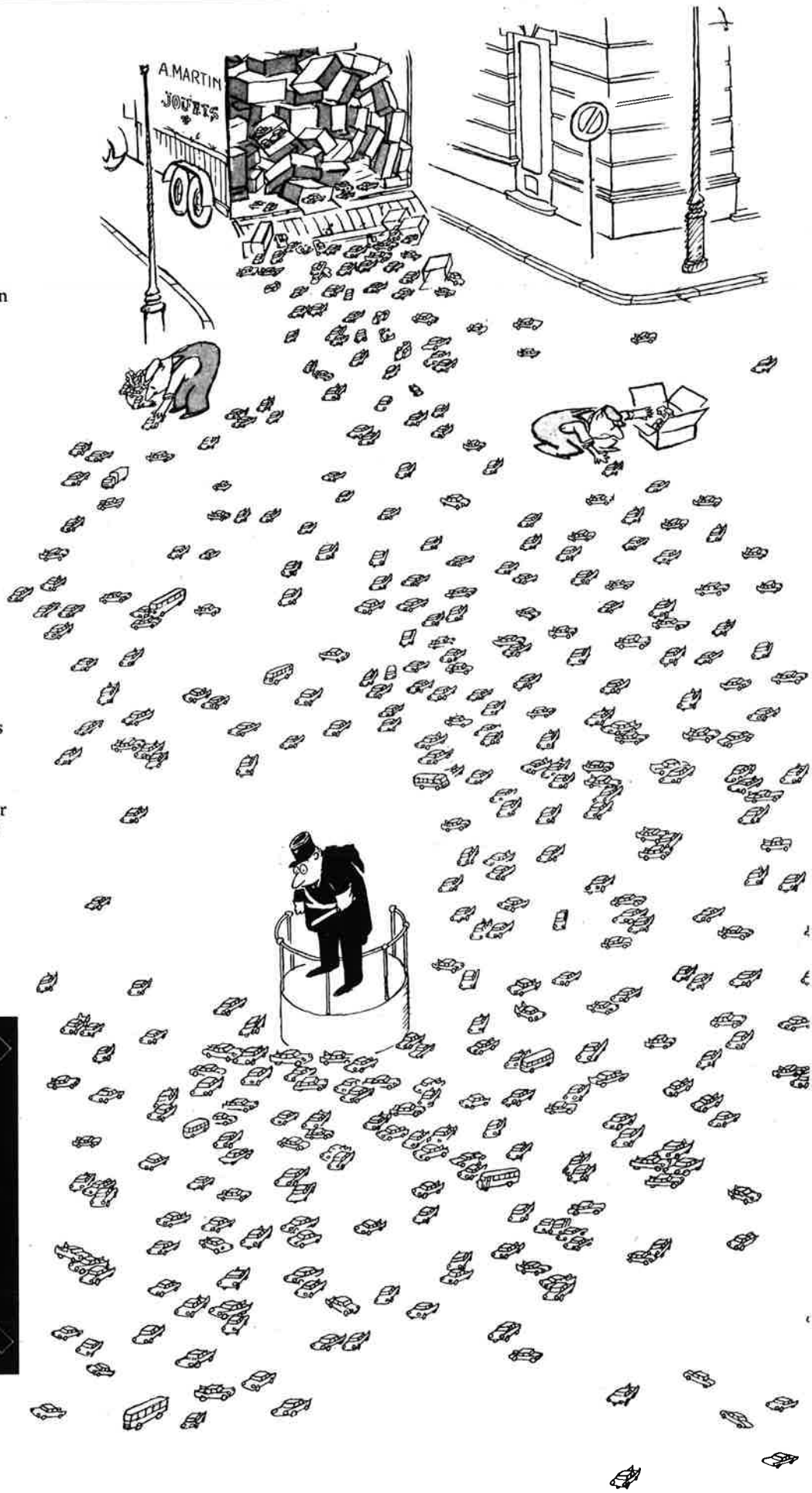
As we enter the era of microcomputers, and the general public becomes more aware of the impact of computers on their lives, the management of a firm or part of a firm that has not previously used computers often wants to know more about the possibilities computers have to offer. Managers have practical demands and expectations from this new tool. They want administrative information that is more coherent, easier to handle, and more up-to-date, so they can make better decisions. They want higher productivity and greater job satisfaction for their people in administration or accounting. And they want to be able to respond to their clients' or customers' requirements faster.

At the same time, though, these managers are naturally cautious about launching into a venture that might entail runaway costs. They are also afraid they might have to devote all their time and attention to the painful start-up of an unpopular computer, only to obtain results which may be inaccurate or difficult to use. They have all heard of such experiences.

Faced with these contradictory responses — both of which are justified if we bear in mind not only the advantages of computerization but also the risks attendant on selecting and implementing a system — the new potential user is normally well-advised to call in a computer service company. Such a company has the necessary experience in planning and following up projects, as well as skills in applications, hardware and software. Provided the computer service company is independent of hardware manufacturers (which is not always the case), it will be able to help the new user answer some important questions :



Nowadays, there are many packages for conventional business applications.



Should we computerize?

First the computer service company makes a detailed study of the requirements expressed by the management. Then it surveys the firm's procedures and pinpoints the type, volume and «value» of the data that it may decide to process. The computer service firm can then plan one or more approaches, each accompanied by an estimate of the likely costs, the time it would take to complete the task, the possible risks and the necessary conditions for success. There may be implications (e.g.,changes in working conditions for employees who would have to learn to use computer terminals) that necessitate management consulting on a scope that extends beyond computer techniques.

In any case, once he has a complete picture of the implications, the possible plans, and the financial and management resources that would be necessary, it is up to the client to decide whether or not to go ahead with his computerization project, after studying the computer service company recommendations.

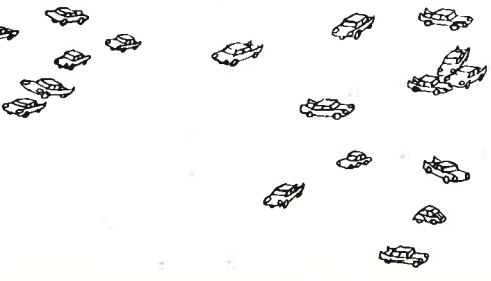
What should we computerize, and how?

It is comparatively easy to draw up a list of applications that justify the use of data processing. Computer service companies are familiar with the volumes of data different types of computers can cope with, and the difficulties inherent with each. This is particularly well known for traditional applications such as payroll, inventory control, accounting, or budgets.

Questions in these applications usually concern priority and planning, because it is rarely possible or advisable for a new user to implement all the possible applications in a single phase.

Consequently, the computer service company must cooperate with the client's top management team to carry out a functional analysis of the applications under consideration. This includes a survey of the human environment – Who supplies the information? Who uses it? What early training is needed? etc. – together with an assessment of the relative value of each application to the user. Determining the priorities means that the computer service company must not only work in close cooperation with the user but also have a thorough knowledge of the client's own industry.

The results of this functional analysis can, if need be, serve as the basis for preparing specifications and a request for quotation, that could be submitted to various suitable suppliers of computer hardware, software, and services.



What kind of computer resources do we need?

In this realm, the choice is often difficult because of the wide variety of possible solutions, and the number of potential suppliers.

In the first place, with respect to the **hardware**, three overall approaches are possible :

- to purchase or lease a computer or mini-computer, either custom-made (with a wide choice of performance characteristics and peripheral equipment) or «off the shelf». The hardware configuration, which is flexible in the first case, is usually fixed in the second case by the basic software constraints, or simply by commercial limitations imposed by the manufacturers.
- to have applications processed by a service bureau. In this case the data can be collected either by the user or by the supplier of the service.
- to buy or lease a terminal, which could be a simple teleprinter, a display screen with keyboard, a typewriter/card-reader combination, or a «heavier» terminal with a printer and a card reader. In this case the user can process his applications remotely through a telecommunications link to a service supplier, or to a parent company's computer center.

The processing itself can either be conversational (with immediate replies from the computer, to which the user can then put further questions), or the more common «remote batch» service.

A similar choice must be made for the **applications software**, which can either be custom-made (by the user or a computer service company) or bought ready-made. Most computer manufacturers have standard programs for widely demanded applications, and this is also true for some applications specific to certain professions. For example, CAP GEMINI SOGETI has made standard application software for such applications as car dealers, accountants' offices, or agricultural cooperatives.

Standard CAP GEMINI SOGETI software keeps sales statistics for a news agent company, so it can gear supply to demand. The programs account for unsold copies, which are returned to the supplier.

What criteria should govern the choice?

When a computer service company is helping a new user make his initial decisions regarding computerization, the service company is usually guided by four criteria :

1/ The cost of each solution : This is the total cost, and should include, for example, such aspects as the fact that the total cost of buying an in-house computer is several times higher than the specified rent, because it must incorporate personnel costs, premises and fittings, the cost of applications software, and so on.

2/ The suitability to the user's exact requirements : Cost comparisons would be nonsense if they failed to take into account the «quality» of each proposed solution. Custom-made applications software, for example, is better adapted to a firm's own procedures and customs than standard software, which may be an important factor for a first-time user, who might then want the better service he could get from custom-made.

3/ The effect of each solution on the employees : They supply the basic data to the computer, and will have to use the data from it. In a similar fashion, an assessment should be made of the effect which each proposed solution might have on the services or goods the user firm provides to its own customers.

4/ Availability of managers : Any computer installation, whether it be mini or «mainframe» consumes a great deal of management time. When the directors of the user firm have other, more urgent preoccupations (such as a difficult market, a recent change of structure, etc.) it is often preferable to start with a computer service bureau approach.

These criteria should be applied both before and after a request for proposals or quotes goes out to potential suppliers or the results of these tenders are assessed, except in those clear-cut cases (whose number is fortunately increasing) when selection and implementation are done in stages.

After the new user has chosen a solution, it has to be implemented. If the selected approach is to process the application on the computers of an outside service bureau, this firm can take over the start-up of applications development. If, on the other hand, a computer is to be installed in-house, or a terminal will be linked to an outside computer centre, the user usually asks the consulting company to help in planning, setting up the applications software (or adapting standard software), making executives in the firm familiar with what is to be done, and training the employees who will operate the computer or use the terminals. When the job is finished the computer service company has furnished complete documentation and maintenance manuals. It then remains available as necessary to carry out the maintenance and to help the system develop along similar lines to the user firm itself.

THE EXPERIENCED USER

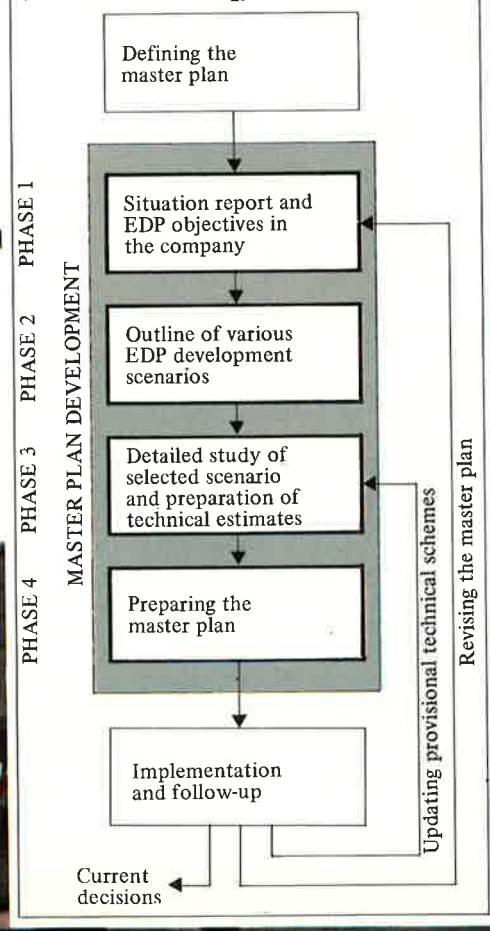
The experienced user has already installed several computers and a large number of terminals in his warehouses, shops, factories or offices. Thanks to his teams or systems people, programmers and operators, EDP plays a part in production, administration and decision-making at all levels. But this user constantly has to adapt his computing services to build in new applications, to take advantage of new computer techniques becoming available, to comply with new regulations and laws, or perhaps to modernize the services he gives to his clients or subscribers. The demands and reasons for change are myriad.

In the constant effort to adapt data processing services to changing conditions, such a user may benefit from the experience of a similarly sophisticated computer service company, by subcontracting to it the design and development of software systems, or by augmenting his own experts with outside consultancy at several levels :

- at the level of the master plan
- at the level of choosing techniques
- at the level of staff recruitment and administration

The user may call in the computer service company simply because it can furnish skills which he lacks. Or perhaps he may want to avoid interrupting his own team's scheduled work to take on a new job. Or he may want an independent point of view. Or he may be facing a serious problem (in cost, or performance, or time demands) that he is unable to solve alone.

The development of a master plan (RACINES methodology)



Design and development of software

Computer service company people spend most of their time designing and developing data processing applications, using methods and tools which guarantee that the end product will be reliable and easily maintained (this subject has been discussed in detail on pages 4 and 5).

The participation of the computer service company might be «global» — meaning that it takes complete responsibility for the task — or it might be partial. Specific elements that might be delegated, for example, include :

- **application survey** (feasibility study, or functional analysis) : To carry out this type of survey it is essential to know the applications thoroughly and also to understand the client's own industry. This is why CAP GEMINI SOGETI has structured its operational units according to industry groupings, and formed teams of experts in specific industries and types of applications.
- **the development itself,** from system design and functional analysis reports : the computer service company appoints a project manager to organize and lead the development team, and to cooperate with the user in deciding which methods and tools should be used.

- **systems architecture,** when the system in question stretches beyond software and involves a large number of parties such as computer and terminal manufacturers, network concentrator suppliers, and so on. The role of the computer service company in this instance, after design and description of the system, is to assist the user in preparing specifications to issue with requests for proposals. The computer service company may then participate in evaluating the proposals submitted, for example by determining criteria to be taken into account in assessing, and the relative importance of different criteria with respect to the specification.

Defining the master plan

The advisory functions of the computer service company, or at least the most important of them, often involve defining or revising a master plan for development of data processing in a company or government agency.

In this realm, for example, CAP GEMINI SOGETI in France took part in the preparation of the RACINES plan, developed under the auspices of the Ministry of Industry by the MIS (Mission pour l'Informatisation de la Société).

This methodology uses the type of progression shown on the opposite diagram. Apart from a preparatory stage, the master plan comprises four main phases :

1/ the first phase consists of :
- drawing up an appraisal of the quality of the present EDP service, both qualitative (types of applications, and their usefulness to the user) and quantitative (their volume and cost),
- identifying with the user his new needs,
- determining the EDP objectives in light of the goals of the company or department,

2/ the second phase includes preparation of several sizeable scenarios, presenting alternatives for data processing, in light of certain hypotheses such as :
- desired degree of decentralization,
- availability of resources,
- different priorities in the implementation of different applications:

The development of this variety of possible plans, together with the various hypotheses used, makes it easier for the experienced user to make final selection of the most suitable scenario.

3/ the third phase consists of the detailed analysis of the selected plan and its consequences, to enable an action plan to be drawn up, selection procedures to be developed, and choice of the means of implementation. Estimates of overall costs can usually be made at this stage, as well as definition of the databases that will be required, and definition of implementation conditions.

4/ Finally, the fourth phase is preparation of the master plan, which can be used with particularly good effect at this stage to inform all users and parties involved in the development of the directions that have been selected.

Naturally such consultancy services on a master plan might concern only one phase of its development, or a special aspect across several phases.

In any case, the computer service company teams bring their contributions to a study group which includes user representatives, but in no circumstances do they override the user or the firm's decision structure.

Consultancy on technical issues

The role of the computer service company, when it is consulting on technical issues, is to analyze the performance and quality of a system, and to give expert advice on the mutual consistency of the software, hardware and logistics, etc. For example:
- the range of coverage of the system defined in the specifications (in terms of service rendered to users),
- data collection procedures,
- installed hardware,
- performance of operational applications or software products already installed,
- guaranteed security level,
- existing documentation on operational systems in the firm,
- unit costs of processing,
- real system performance compared to objectives in the original specifications,
- the introduction of EDP into the firm, including its effects on organization structures and employees, along with short and medium-term development outlooks.

This survey concludes with a summary of actions recommended or remedies that can be applied.

Administration of EDP employees

Because of its experience with computer people, a computer service company can offer useful insights into successful organization and administration of people in a firm's EDP department. The consultant can, for example, help define working methods within a development group, or offer training and higher education in all disciplines.

It is interesting to note, in this respect, that CAP GEMINI SOGETI and BOSSARD INSTITUT have gained wide experience in the educational field, and are able to offer general courses in such subjects as programming languages, methods, use of equipment, non-EDP techniques such as accounts administration or distribution, etc. In addition they can offer special courses designed for the specific needs of a company, using the most up-to-date teaching methods.

When an airplane lands, the information system takes charge of initiating all required ground support, communicating the arrival time to the main airport displays, assigning the landing gate, arranging baggage transit, and so on.

THE COMPUTER MANUFACTURER OR SPECIAL SYSTEM USER

Although in principle software and hardware prices have been «unbundled» since IBM launched the practice in 1969, even today their respective prices do not reflect real costs. In fact, development and maintenance of operating systems and other basic software (as shown in the inset, opposite) represent to computer manufacturers a rapidly increasing portion of the cost price of EDP systems. Furthermore, the success of basic software - measured in lead time as well as in performance - is a condition for the successful launching of new series of computer hardware. In addition, the success of basic software determines the success of the service provided by certain large-scale special systems such as data communications networks.

Consequently, computer manufacturers and users of special systems often find that subcontracting production of certain basic software is a way of sharing the cost and time risks, and minimizing the demands for management attention. This must, of course, be based on the condition that the computer service company can furnish all the necessary guarantees as to its size, its experience, and the technical capabilities of its people (often including special expertise not available to the manufacturer).

CAP GEMINI SOGETI, for its part, has acquired a range of expertise unique in the realm of basic software, mainly due to the conjunction of two factors:
- first, the presence of dynamic national computer industries in several of the countries where CAP GEMINI SOGETI is firmly implanted (notably CII-HB, SEMS and LOGABAX in France, SIEMENS and NIXDORF in Germany, PHILIPS in Holland and ICL in the UK). The group has played an important role in each of these countries in developing software for the different ranges of computer systems produced by the manufacturers. (In the case of France, this supportive activity has even led to the creation of CAP SOGETI LOGICIEL, a company specialized in basic software).
- the second factor is the CAP GEMINI SOGETI decision in 1968 to go into the pioneering program product market. The first activities were mainly commercializing American products developed for IBM computers. Then the company began to develop and distribute its own program products adapted to hardware, applications, industries and problems specific to the European market.

The realm of basic software production

This primarily comprises:
- the manufacture of **basic software components**: *assemblers, compilers, utilities, teleprocessing monitors, database management systems, operating systems, and so on,*
- the manufacture of **program products**, *whether they be system program products or application program products,*
- the manufacture of **special systems** *that need basic software techniques: networks, reservation systems, real time systems (industrial or administrative), weapons or command systems, and so on.*

Software products, whether they be basic software for computer manufacturers or program products, are normally designed to be sold and installed in large numbers in many countries. Furthermore, for the computer manufacturers, the basic software is literally integrated into the hardware whose operation it conditions. As for special systems, these are usually designed to supply a service, often a service to the public (such as airplane reservations).

CPL COMPILERS AS AT DEC. 1.1977

Host computer / Target computer	IBM 360/370 DOS	IBM 360/370 OS	CII-HB IRIS 50 SIRIS 3	CII-HB 10070 SIRIS 7	CII-HB IRIS 80 SIRIS 8	CII-HB 66 GCOS	CII-HB 77 BS 1000	SIEMENS 4004 BS 1000	ICL 2900 VME	SEMS MITRA 125 MMT/2	DEC PDP 11 RSX 11M	INTERDATA 7/8/32 OS 32 MT	SAGEM ULP MONTRE
IBM 360/370 DOS	●	*	*	*	*	*	*	*	□		□	□	
IBM 360/370 OS	*	●	*	*	*	*	*	*					
IBM 360/370 DOS /CICS	●	*											
IBM 360/370 OS /CICS	*	●											
CII-HB IRIS 50	*	*	●	*	*	*	*	*	□		□	□	
CII-HB 10070	*	*	*	●		*	*	*	□		□	□	
CII-HB IRIS 80	*	*	*		●	*	*	*	□		□	□	
CII-HB 66	*	*	*	*	*	●	*	*	□		□	✪	
CII-HB 77	*	*	*	*	*	*	●		□		□	□	
SIEMENS 4004	*	*	*	*	*	*		●	□		□	□	
SIEMENS 330	*	*	*	*	*	*	*	*	□		□	□	
ICL 2900	*	*	□	□	□	□	□	□	●		□	□	
SEMS MITRA 15	*	*	*	*	*	✪	*	*	□	□	□	□	
SEMS MITRA 125	*	*	*	*	*	✪	*	*	□	●	□	□	
SEMS T 1600	*	*	*	*	*	✪	*	*	□	□	□	□	
SEMS SOLAR 16	*	*	*	*	*	✪	*	*	□	□	□	□	
DEC PDP 11	*	*	□	□	□	✪	*	*	□	□	●	□	
INTERDATA 7/8/32	*	*	*	*	*	✪	*	*	□	□	□	●	
UNIVAC 1100	*	*	□	□	□	□	□	□	□		□	□	
UNIVAC 90/30/60/70	*	*	*	*	*	✪	*	*	□		□	□	
SAGEM ULP	*	*											●
INTERTECHNIQUE MULTI 4/8/20	*	*	*	*	*	✪	*	*	□	□	□	□	
INTEL 8080	*	*	*	*	*	□	□	□	□	□	✪	✪	
MOTOROLA 6800	✪	✪	✪	✪	✪	□	□	□	□	□	✪	✪	
ZILOG Z 80	✪	✪	□	□	□	□	□	□	□	□	✪	✪	

LEGEND
● FULL COMPILERS
* CROSS COMPILERS
✪ UNDER DEVELOPMENT
□ DEVELOPMENT ON REQUEST

The computer service company called upon to develop basic software and special systems on this scale must thus, above all, be able to satisfy the following requirements:
1/ performance, to ensure that the product is as commercially competitive as possible, or that the service offered by special system users is as perfect as possible;
2/ reliability and ease of maintenance, to minimize the risk of trouble and errors, and to make sure the product can be updated through maintenance as quickly as possible, and distributed to all users at the lowest possible cost;
3/ longevity, so the investment in product development can be amortized over the longest possible period through the life of the product.

To achieve PERFORMANCE and RELIABILITY you need methods and tools (discussed in greater detail in pages 4 and 5), but these are not enough. Teams of specialists are also essential. There is no recipe or magic formula to achieve instant specialization without investment. It can only come as the result of past experience, and informed predictions of the probable development of certain techniques or applications, based on a thorough knowledge of present technology. With this kind of expertise it is possible to design basic software architectures that stand up best to the constant modifications that characterize today's environment.

DURABILITY is assured mainly by the use of portability techniques. The basic aim of portability is to be in the right place every time, instead of being forced to start again from zero. It allows you to re-use and even improve on new machinery the software investments made on previous computers. To achieve this re-use the first requirement is a machine-independent programming language. Because such a language or tool did not exist on the world market, CAP GEMINI SOGETI has developed its own language (called CPL 1), and associated techniques that guarantee the portability of programs:
1/ the first stage was to define a high-level **language** independent of the computer hardware which could be compiled efficiently on existing machines as well as future models;
2/ the second step, essential to real «mass production», was to develop a low-cost portable **compiler**. The CPL 1 system has thus been the basis for the development of a range of portability techniques. But this was not yet sufficient for the challenge;
3/ in fact, the existence of a single language and its associated compiler is only a precursor for portability. The problems resulting from the differences between the basic software used by the different programs had to be solved. These differences inevitably led to **interface** definitions to structure the software products, as well-defined interfaces limit the propagation of changes within the products.

This technique, now highly operational, has enabled CAP GEMINI SOGETI to convert program products to very different computer hardware, with no noticeable loss of efficiency. Thus, for example, the SYSIF program product (designed to interrogate databases and produce printouts) has been developed successfully for computers as different as IBM 370, CII-HB series 66, and UNIVAC 1100.

An information system automatically registers the betting tickets, and the reports on exact pari-mutuel odds are available immediately after each race.

AN ESTABLISHED AND STABLE PARTNER

Choosing a computer service company is as important as selecting a trustworthy executive and choosing a partner in such a vital and sensitive field as EDP usage – while maintaining a healthy independence in commercial relationships – is not always easy.

What are the primary criteria for the selection of such a partner ?

One should remember that the aim of selection is clearly to give the development job entrusted to the computer service company the greatest possible chance of success. The computer service company knows that if it is successful the client may retain it for other consultancy or development tasks, so its incentive to succeed is also high.

The user has the best chance for a successful project if he identifies the following five conditions in his potential partner :

The computer service company should be large enough

Size can be expressed in revenues (or better yet, in added value), or the number of professionals employed. Size is an important guarantee for the user because it enables him to :

- find the skills he needs in the computer service company (e.g.,in terms of applications and data processing techniques), not only for the project in hand, but also to be able to face any contingency which may arise or any modification of the specifications which may become desirable.
- communicate with a structure of directors, district managers, or sales representatives who understand user situations and are able to recommend suitable solutions.

What is a good size ? Without engendering arguments, let us give CAP GEMINI SOGETI as an example. Stability and a complete interface with the user on his own site are assured by a consolidated turnover in 1977 of close to $ 90 million, plus a staff of more than 2000 professionals and 150 managers and sales executives in Europe.

The service company must be well-managed

Size is not sufficient in itself, because it guarantees continuity only if the firm is healthy (i.e.,shows positive financial results). The two factors – size and profit – together are a sign of success and good management. For the user this means :

- that the computer service company staff manage their work well, that they are motivated by the success of a company in which they can build worthwile careers.
- that the service company executives leave nothing to chance in their commercial and technical actions, that they are thorough in their search for the best solution or the best-qualified expert in risk identification, time calculation, preparing documentation, and so on.
- that the computer service company is a suitable partner for a large project.

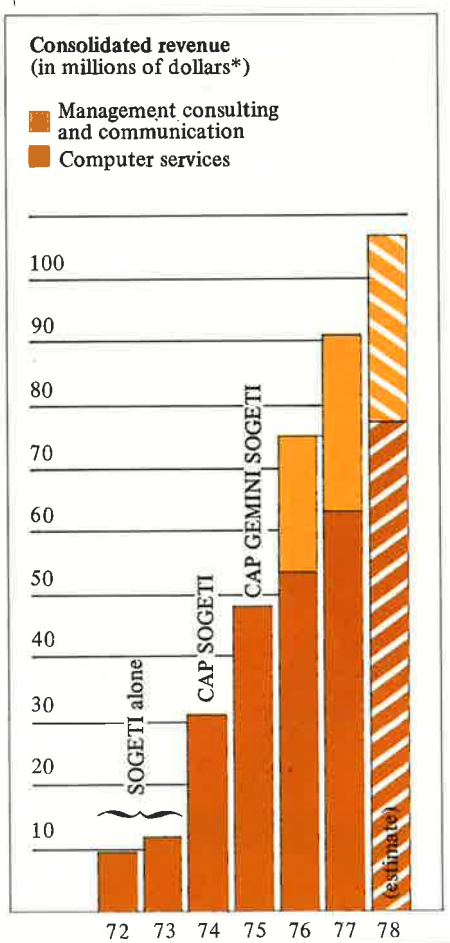
The historical CAP GEMINI SOGETI results (shown on the graph herebelow) are the outcome of dynamic and thorough management. Other evidences of this management style occur in previous annual reports, which contain descriptions of the computerized budgets, the market research, and the cost analysis tools used to maintain forward-looking control in a dynamic industry.

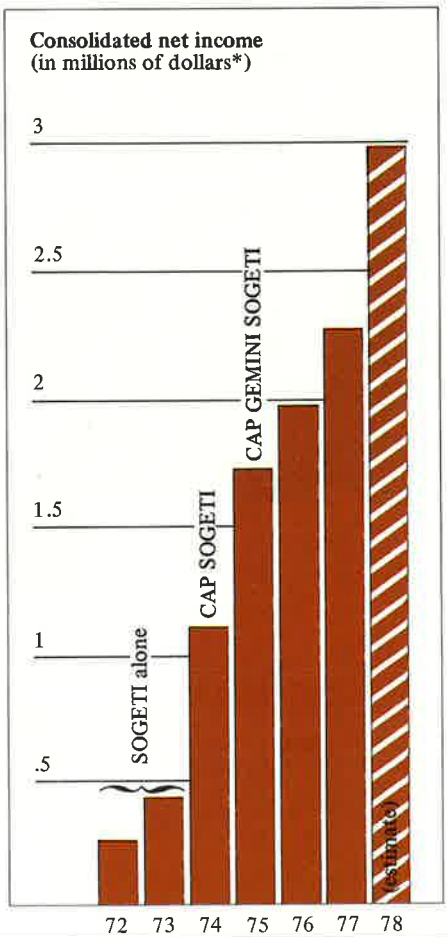
Percentage of consolidated net profit distributed to shareholders

SOGETI	1968	no dividend
	1969	
	1970	
	1971	
	1972	
	1973	
CAP SOGETI	1974	26%
CAP GEMINI SOGETI	1975	20%
	1976	19%*
	1977	22%
estimate	1978	21%

** instead of the estimated 23% (French government restrictions)*

CAP GEMINI SOGETI: 1972/1977 results





** converted from French francs at the rate of 1 US $ = 4.71 FF.*

The service company must have good references

It is not just stating the obvious to point out that if a computer service company can show many balanced references from reputable clients, it will probably give good service. In fact, a crucial question should be : « Has this computer service company worked on this application in my industry ? » Given such a collection of references, the answer will probably be « Yes ». And furthermore, if the size and management criteria are also satisfactory, the user can expect :

- that the wide experience of the service company will have led to an accumulation of know-how that guarantees productivity in the development of software, as well as realistic advice.
- that the computer service company will have explored the most advanced techniques and methods, so the user can benefit from its experimentation.
- that service company employees will already be trained to carry out the job punctually, with tact, imagination and efficiency.

This is what CAP GEMINI SOGETI companies offer a client. The company's 8000 references represent a wealth of work and experience, whose balance is carefully maintained by a manageable and well-focussed sales strategy. This strategy includes balance among different industries (as shown in the table hereunder), balance among different types of computers, availability of all the modern techniques, and constant search for new skills.

Breakdown of computer service turnover by industry sector in 1977

primary sector	10%
manufacturing(machinery, chemicals...)	19%
other manufacturing (including computer industry)	22%
banks and insurance companies	16%
other services	10%
public administration	23%

The computer service company must be stable

If he adds to the above characteristics the idea of continuity (as illustrated in the demonstrably long history of CAP GEMINI SOGETI results), the user can have in a computer service company with such qualities a stable supplier, firmly entrenched and therefore long-lived. Five or ten years ago people were concerned with the instability of the computer service industry. Today the user has a right to demand not just a guarantee that the vendor will survive, but also a guarantee that he will continue to furnish the same quality of service. In effect, the user has a right to demand :

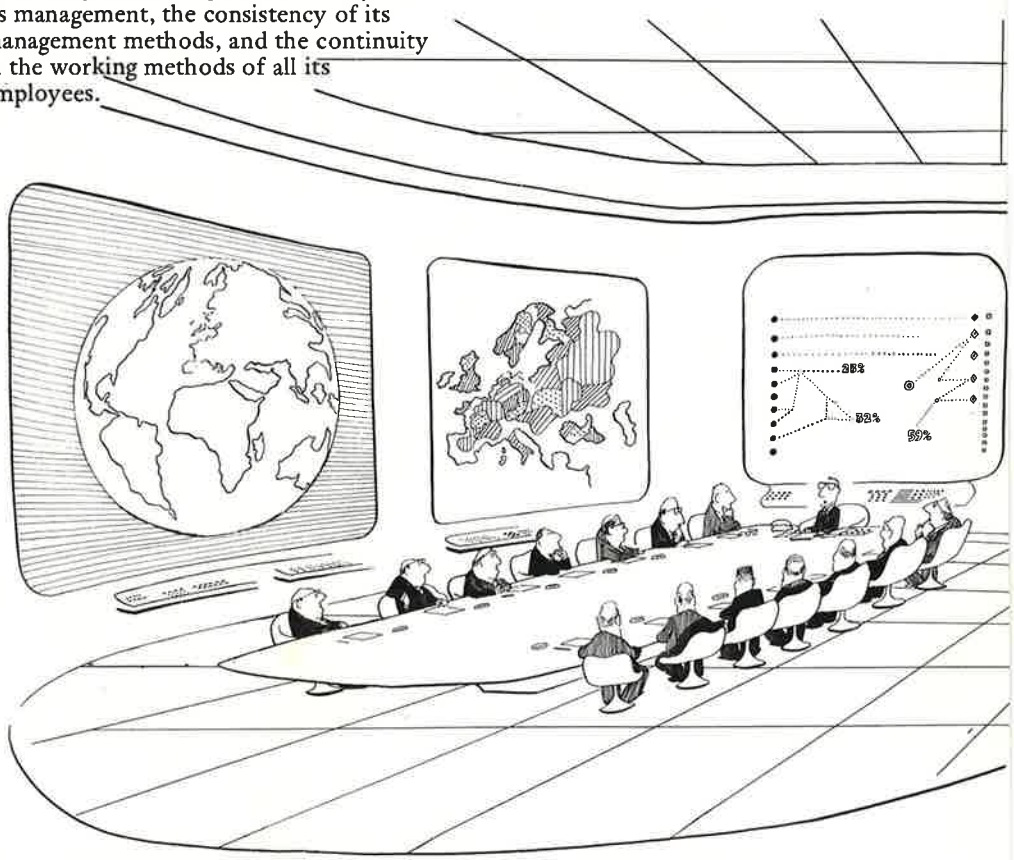
- the ability to deal with the same people and firm on the technical and commercial levels, for as long as possible ;
- the ability to give his successive projects to professionals who will not change their methods or working habits, apart from updating ;
- the ability to subcontract a long-term project with safety — projects lasting for several years are no longer rare ;
- a guarantee that the maintenance of his applications is handled by the same people who designed and programmed it, for at least the next five years.

Finally, the user doesn't want to risk losing the investment his choice of a computer service company represents, nor the confident and efficient relationship that builds up between them. The economic viability of that investment is also the primary concern of a computer service company like CAP GEMINI SOGETI, whose stability is demonstrated by, among other things, the same style of its management, the consistency of its management methods, and the continuity in the working methods of all its employees.

The service company must explain its accounts and management methods

More and more service company users attach great importance to understanding both the administration and internal operations of the partner. They prefer to deal only with a computer service company that can publish and comment on its financial returns, giving the names of its clients, describing its policies, making public the details of its cost accounting analyses, explaining how its managerial systems work, and announcing its estimates of market trends and growth.

This is what CAP GEMINI SOGETI has undertaken, in any case, for several years. The company will continue to publish its accounts and management methods to explain to EDP users the realities of a service company, to whet their curiosity, to maintain dialogue with them and, naturally, to retain their confidence.



A BROAD INTERNATIONAL COVERAGE

There are certain qualities which reach full development only in the face of diversity. This is the case, for example, with tolerance or respect for others. Companies of a truly international scope also acquire and develop unique qualities thanks to their encounter with a diversity of languages, customs and ways of thought.

In the case of data processing services, this observation takes on a very special aspect which doubtless explains the notable scarcity of truly multinational computer service companies in Europe. The calling of these companies is to make tools as «universal» as computers (which do not change regardless of where they are used) as productive as possible for users scattered over a patch of the globe where - in contrast to the United States (and we sometimes forget that all Europe barely exceeds the USA in area) - it is hard to travel 500 miles without changing languages, currencies,tax regulations and national customs several times.

When the Norrköping manufacturer or the Toulouse wholesale grocer decides to use a computer service company, then, he appreciates dealing with people who are attuned to local practices, who are familiar with the laws governing his trade and who are in a position to engage in quick, effective dealings with the regional sales representative for his brand of computer. But he might consider this «neighborliness» - resulting from the software company's establishment of solid local representation - inadequate if it does not also offer him direct, easy access to a far-reaching network of people, expertise and resources... offered only by a computer service company established with a broad international coverage. From this standpoint, then, we might say that the user expects two basic qualities from his software expert: genuine approachability and a high capacity for interchange.

APPROACHABILITY

Users anticipating activities beyond their national borders or already active in a number of countries (the latter group particularly including computer manufacturers) value a computer service company which, thanks to an international presence and its resultant experience:

- has a full mastery of the legislation and managerial practices prevalent in the various countries, and is in a position to draw up functional specifications for Europe-wide application programs,
- is an authoritative partner (e.g., for drafting of a DP master plan or developing an application intended for the entire user Group) not only at the European-main-office level, but also at the end user's site, which might be a sales subsidiary, a laboratory, a plant or a warehouse;
- is capable of offering a permanent software maintenance service, employing uniform methods and coordinated by a central supervisory system, to any user Group anywhere in Europe.

Conversion of an international organization's DP applications

For conversion of an international organization's main applications on an English computer system (installed in Belgium) with German, Italian and French terminals, CAP GEMINI SOGETI formed a multinational team whose 25 members are German, Belgian, British and French. This makeup ensures that, during the 18 month project work, communication with the manufacturers' technical services and the end users of the applications being converted will be troublefree, from the standpoint of both language and detailed familiarity with the peripherals, circuitry, interface equipment, documentation and the exact applications involved.

A CAPACITY FOR INTERCHANGE

which might involve methods and/or people:

- methods:

the user of a large and genuinely European computer service company can gain access to an enormous scope of experience, methods and solutions... if his consultant is suitably organized. This is why CAP GEMINI SOGETI has set up REX, an information retrieval system which describes the Group's most noteworthy references, employing keywords for search and retrieval by economic sector, computer hardware and application types and, of course, customer and country.

Thanks to this organization (and to frequent meetings and working sessions held by CAP GEMINI SOGETI consultants), many problems find faster, better solutions because information, documentation and methodology are rapidly exchanged in spite of language differences. A garment manufacturer in Western France is thus able to solve a problem for optimization of pattern cutting as a result of similar work performed for customers in Manchester or Brussels; or a British insurance company can benefit from know-how in his field acquired by CAP GEMINI SOGETI consultants in Switzerland or Holland, and so on.

- people:

the capacity for interchange between the various subsidiaries of a truly «European» computer service company must also apply to its professionals themselves. The composition of multinational teams is often governed by the diversity of users or the geographical spread of a project, or is simply dictated by the nationalities of the best people for the job. This is why the software firm should strive to achieve an extensive pooling of professional criteria (qualifications, recruiting, training) and working and management methods among its component subsidiaries and nationalities. This means that every branch office and every subsidiary should be able to manage its own technical and commercial affairs while associating itself closely with a truly international network.

Each member company of the CAP GEMINI SOGETI Group - which provides services out of 50 branch offices located in 14 countries, and whose operational subsidiaries are managed and staffed by local nationals - is at once autonomous within its own country and a full-fledged participant in the Group. Both of these goals have been reached thanks to:

- the presence in each country of managers and professionals dealing with customers on the basis of local rules and customs;
- the use of uniform internal management methods (budgets, operating accounts, project progress monitoring, etc.) in all CAP GEMINI SOGETI companies;
- active participation in Group activities by all managers and chief engineers from all countries, who meet regularly to exchange information, discuss their common concerns and decide upon measures to reinforce their cooperation and professionalism. This is the case with:

- CAP GEMINI SOGETI's General Management Committee - in which seven nationalities are represented - which makes the major Group-level policy decisions;
- the Technical Coordinating Committees, whose regularly-held meetings are attended by representatives from all companies concerned, and which play a decisive role in drafting of technical guidelines and technical decision-making, in the transfer of know-how and the standardization of procedures, tools and methods;
- the yearly «Rencontres», which bring together 200 CAP GEMINI SOGETI managers and experts for several days of discussion and exchanges of experience revolving about concrete problems. The tenth «Rencontres» was held last year in Amsterdam; the next - scheduled for Munich this year - will concentrate on large-project management.

CAP GEMINI SOGETI + BOSSARD MAIN LOCATIONS

ANTWERP
BASEL
BORDEAUX
BRUSSELS
CASABLANCA
COPENHAGEN
DÜSSELDORF
GENEVA
GÖTEBORG
GRENOBLE
HELSINKI
KARLSKOGA
THE HAGUE (Rijswijk)
LAUSANNE
LONDON
LYONS
MADRID
MALMÖ
MANCHESTER
MARSEILLES
MILAN
MUNICH
NANCY
NANTES
ORLEANS
PARIS
RENNES
ROUBAIX
ROUEN
STOCKHOLM
SUNDSVALL
TOULOUSE
UTRECHT
WASHINGTON, D.C.
ZÜRICH

A MATURE MANAGEMENT CONSULTANT

Until recently there was a strong tendency among EDP experts to tackle problems related to management and organization without the benefit of outside assistance. There were at least two obvious reasons for this tendency:
- as the most experienced EDP experts carried out projects, they noted the emergence of many organizational problems and - rightly or wrongly - they came to consider the methods for dealing with them as familiar and accessible,
- EDP projects (and, more precisely, the services performed by EDP) often embrace or even create problems - notably organizational problems - that differ markedly from the problems of EDP technology itself.

In a number of difficult situations, it is nonetheless true that the user would prefer to seek the help of a «management consultant», whose abilities differ from those of the software house. This is the case, for example, when:
- detailed design of the EDP solution moves through a preliminary organizational phase such as: company overall structure modification, complete administrative reorganization, change of product ranges or lines, development of new job categories, qualitative measurements of sales results, and so on,
- the system being implemented encounters (or runs the risk of) user opposition and, once installed, remains unused or underused,
- the company's EDP service is not «accepted» by its other departments,
- a major project is under development (such as setting up factories, installing communications networks, producing telephone directories, and so on) in which there is a computer subsystem.

The user is able to place more confidence in a computer service company to handle the EDP problems arising in these situations if the software firm is itself closely linked with a management consultancy or vice versa. Of course, these two agents must work autonomously, and maintain full independence of judgment and decision.

CAP GEMINI SOGETI maintains such a close link with the BOSSARD Group, a 51% - owned subsidiary that nonetheless remains autonomous and responsible in the exercise of its own «professions».

The BOSSARD Group's activities in marketing and advertising have made it one of France's biggest agencies. In addition, the Group provides users with three main kinds of service:

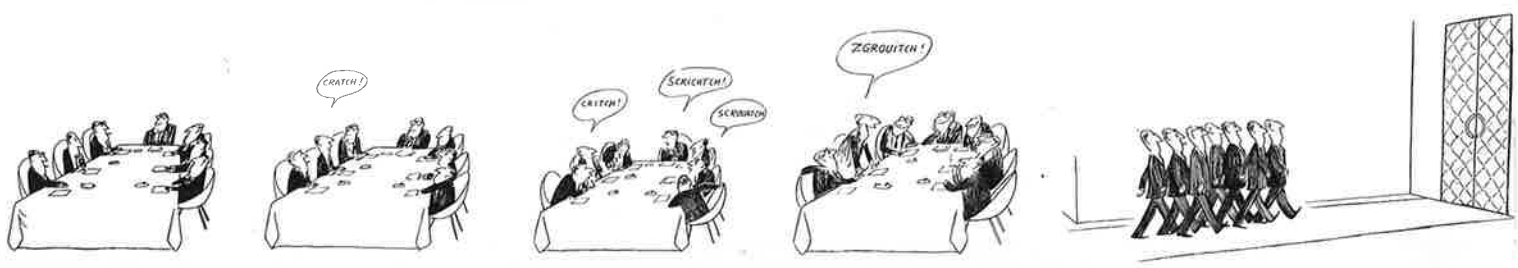
1/ Organization: this involves not only administrative or sales organization, but also the organization of production, consultancy for development and reconversion, research into new products and markets, and so on. Generally speaking, the purpose of this kind of consultancy is to help streamline administrative machinery, reduce its costs, improve the performance of distribution networks, enhance the productivity of sales departments, monitor and control cost prices, upgrade product lines, and so on.

The activities of the management consultant are reflected in recommendations for a wide range of actions: restructuring on the basis of profit centers, launching campaigns pointed towards industrial productivity, establishing cost accounting and budget control models, reorganizing procedures for purchasing and inventory control, developing systematic prospection, setting up sales commission plans, investigating new «technological opportunities» (one BOSSARD Group company, I.D. Conseil, maintains a large, up-to-date file on technological opportunities), and so on.

BOSSARD CONSULTANTS tackles a project

The site: a machine-tool and metalworking company. The problem: tooling shop costs were too high, and deadlines were being missed. The situation was aggravated by the fact that this shop was the final link in the chain for launching new products, and had to be able to react rapidly, and on very short notice.

BOSSARD CONSULTANTS proposed and implemented a plan of action involving:
- complete reorganization of the administrative scheduling and production management systems, to streamline paperwork and permit better follow-up of shop activities,
- reorganization of the master work schedules and training company people to enable them to carry on this overhaul without further assistance,
- setting up standard product explosion (on the basis of a morphological parts classification) to simplify job preparation and permit more certain selection of the most economically efficient product scheduling.



2/ Labor relations and personnel management: the BOSSARD CONSULTANTS affiliate has developed an approach to corporate industrial relations based on an analysis of the synergies and antagonisms in a unionized environment. This is essentially a matter of:
- establishing and controlling each function's structure while keeping an eye toward the human balance required in the new organization,
- giving this human synergy priority over any other kind of communication or organizational channel that the work involves.

This novel approach ensures that the human balance is constantly respected, and that the productivity gained by «methods» goes hand in hand with the substantial increase of productivity possible in a group whose members work together in harmony.

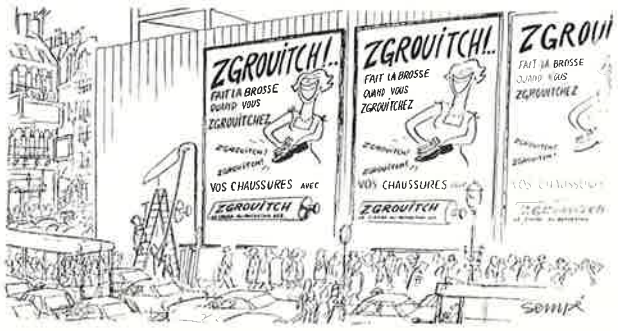
Through a specialized subsidiary (ORES), the BOSSARD CONSULTANTS division also offers management consultancy in the areas of:
- organization of human resources, including allocation of duties and definition of functions, career planning, streamlining and adapting structures to a development strategy, systems design, payment structures, and so on,
- executive recruiting to yield the greatest possible number of candidates with qualifications that match the positions to be filled.

3/ Large project promotion and management: besides the basic technology involved, these activities embrace general engineering, project management, and personnel training. Naturally they may also include EDP sub-units.

BOSSARD INTERNATIONAL (B.I.A) and BOSSARD INGENIERIE have been set up to promote and implement certain kinds of large projects:
- in such activities as siting industrial facilities or vocational schools, Olympic Games organization, planning regional development, designing irrigation systems, planning and building highways, bridges, buildings, and ships;
- with budgets ranging from $ 20 million to $ 100 million;
- involving complex management, in which the mastery of both organizational techniques and EDP techniques is a decisive factor for success.

The major phases of implementation for such large projects are usually as follows: identifying the project (redefinition is often necessary before further steps can be taken); defining and prospecting for required finance from national agencies or international funds; establishing partnerships with those who manifest relevant technologies; doing a preliminary project study; carrying out commercial negotiations; performing project management in the three dimensions of engineering, management, and training; and transferring responsibility from the implementing team to the user's trained personnel.

The planning system for the design and construction of the Georges Pompidou Center for Arts and Culture in Paris - which stretched out over a period of five years - was implemented by the BOSSARD Group.



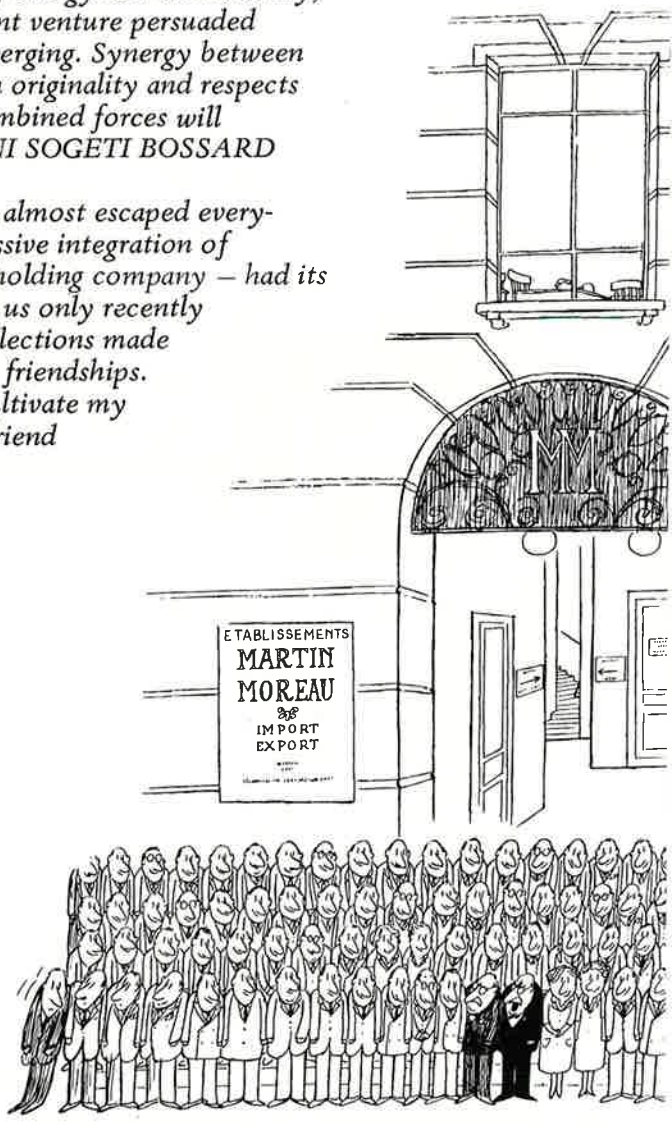
THE CHAIRMAN'S LETTER

I used to find it a little vain and ridiculous trying to sum up in a few lines a whole year of work. Marked by thousands of decisions and hesitations, of successes and failures, of breakthroughs and inconveniences, its report can only be a caricature roughly sketched in financial results and the reports from the Board of Directors. Money is not everything ; profit is not the only measure ; we also have to be concerned about the quality of service, the happiness of people, the improvement of our methods and development capabilities, and so on.

I am told nevertheless that tradition demands that the Chairman use this space to point out the main events of last year, and I do not want to shirk this duty, as it is a pleasant one. I perhaps only have to mention three memories 1977 has given me that testify to our Group's health and maturity :

- *In the first place, CAP GEMINI SOGETI this year again followed an old SOGETI tradition: meet the target. The results have been excellent ; we closed the fiscal year at 98 % of the consolidated revenue that we predicted one year ago ($ 90 million including the BOSSARD revenues or $ 62 million on the old basis). Furthermore, we achieved also 100 % of the net profit we forecast. This achievement is even more impressive if we remember the economic and political uncertainties and their effect on investment programs last year. Our European division was unable to meet its target but the French companies surpassed themselves once again to make up the difference.*
- *The second event was that the merger a year ago between CAP GEMINI SOGETI and BOSSARD did not bring any allergic reaction nor any dilution of energy. On the contrary, at the end of the first year of cooperation, the success of this joint venture persuaded those who still had doubts that the objectives were actually converging. Synergy between the two organizations is growing rapidly, yet each retains its own originality and respects the other's way of thinking and working. We predict that the combined forces will achieve revenues over $ 105 million in 1978 putting CAP GEMINI SOGETI BOSSARD in a class with the largest international competitors.*
- *The third event I remember (in my opinion the most important) almost escaped everybody's notice : debaptized twice (to take into account the successive integration of CAP, then of GEMINI), the former SOGETI – which became a holding company – had its 10th birthday on last October 1st. Respect for those who joined us only recently and a certain amount of competition from the French national elections made us decide to note the anniversary quietly in the simplicity of old friendships. If anyone thinks that after 10 years I might wish to retire and cultivate my garden, I suggest he look again at the drawings by our talented friend Sempé on the inside cover pages.*

Serge Kampf



Members of the Board of Directors

Serge Kampf
executive chairman
José Bourboulon
Yves Bossard
Cisi s.a.
Philippe Dreyfus
vice chairman
Michel Jalabert
Michèle Kampf
Patrick Nollet
Jean-B. Renondin
vice chairman
Daniel Setbon

Members of the "Executive Committee"

Serge Kampf
Michel Berty
Michel Jalabert
Alain Lemaire
Jean-B. Renondin
Daniel Setbon
Christer Ugander

I'm going to give him the axe, that'll simplify everything!

ORGANIZATIONAL CHART AS OF MAY 1ST, 1978

CAP GEMINI SOGETI (1)


Serge KAMPF*
Executive Chairman


Philippe DREYFUS*
Vice Chairman


Jean-Baptiste HENONIN*
Vice Chairman


Michel JALABERT*
Vice President


Daniel SETBON*
Financial Director

Guy H. Broadfoot
Gérard Dubois
Pascal Giraud
Philippe Hennequin
Hervé Marin
Lars Olof Norell
Jean Ronceray*
Bo S. Soderberg
Jean Vacheron*

GROUPE BOSSARD (2)

Jean BOSSARD — Yves BOSSARD — Michel JALABERT — Jean-René FOURTOU

BOSSARD COMMUNICATIONS


Jean BOSSARD*
Chairman

BOSSARD INTERNATIONAL (B.I.A.)


Yves BOSSARD*
Chairman

BOSSARD CONSULTANTS


Jean-René FOURTOU*
President

DIVISION "OVERSEAS"


Leonard JACOBY*
President

CAP GEMINI U.S.A.


Gerald F. HICE
General Manager

DIVISION "CONSEIL EUROPE"


Christer UGANDER*
President


Robert THORAL*
Operational Control


Harry KOELLIKER
Financial Director

CAP GEMINI NEDERLAND


Chris Van BREUGEL*
General Manager

CAP GEMINI BELGIUM


David G. UFFER
General Manager

CAP GEMINI DEUTSCHLAND


Herbert BRECHTEL
Manager


Werner H. WIESEHAHN
Manager

PANDATA (HOLLAND)


Aad UIJTTENBROEK
General Manager

GEMINI U.K.


Peter W.M. DODDS*
General Manager

BRA (SWEDEN)


Sam MOLANDER
General Manager

CAP GEMINI SUISSE


Werner ZULLIG
General Manager

DIVISION "CONSEIL FRANCE"


Edouard BAZEILLE


Michel BERTY


Alain LEMAIRE

CAP SOGETI LOGICIEL

Edouard BAZEILLE*
President


Jean-Paul FIGER*
General Manager


Gilbert ELOIRE*
Deputy General Manager

CAP SOGETI SYSTEMES
CAP SOGETI FORMATION

Alain LEMAIRE*
President


Francis BEHR*
General Manager


Jean-Jack LOUDES
Deputy General Manager

CAP SOGETI PRODUITS


Philippe de BEAUCHAMP
Manager

CAP SOGETI GESTION
CAP SOGETI LGD

Michel BERTY*
President


Jacques BERTHELOT
Division Manager


Serge COLLIGNON
Division Manager


Daniel DELEERSNYDER
Division Manager


Robert DUNAND
Division Manager


Hervé JAHAN
Division Manager


Patrick LUCAS
Development Manager

D.T.E.S. (3)


José BOURBOULON*
President


René CLARET
Vice President

SORINFOR

José BOURBOULON
President


Jacques FLEURY
Sales Manager

CAP SOGETI EXPLOITATION


Rémi DONNEAUD
President

CAP SOGETI SAISIE


André PONCHARD
General Manager

S.E.S.I.

Marc BRUNIER
President

(1) *Capital owned by :*
- *Serge KAMPF 58 %*
- *Other Managers 8 %*
- *CISI (Compagnie Internationale de Services Informatiques) 34 %*

(2) *Capital owned by :*
- *CAP GEMINI SOGETI : 51 %*
- *Jean BOSSARD : 24,5 %*
- *Yves BOSSARD : 24,5 %*

*MEMBER OF THE GENERAL MANAGEMENT COMMITTEE.

(3) *Division Traitement Exploitation-Saisie (computer-based services)*

THE 1977 CONSOLIDATED FINANCIAL STATEMENTS

The presentation of the consolidated financial statements for the 1977 fiscal year is affected by the following two major changes : the introduction of new methods of consolidation and the consolidation of the BOSSARD Group.

These changes should therefore be taken into consideration in any comparison with previous years.

For the same reasons, and as a temporary measure, no statement of changes in financial position is presented for 1977.

Finally, all amounts shown below are expressed in US dollars, translated from the consolidated financial statements expressed in French francs by applying the exchange rate at December 31, 1977 of US $ 1 = FF 4.71.

I/SUMMARY OF ACCOUNTING POLICIES

In view of the international character of the activity of the Group, the consolidated financial statements have been prepared in accordance with the accounting standards issued by the International Accounting Standards Committee (I.A.S.C.).

The Group has been advised as to its accounting principles and policies by McLintock Main Lafrentz who have not reported on the accounts of all of the individual companies concerned and who do not express any opinion on the consolidated financial statements. The accounts of the companies forming the CAP GEMINI SOGETI Group have been verified by their respective auditors.

Appropriate adjustments have been made to the financial statements of the companies forming the CAP GEMINI SOGETI Group in order that they might conform with the accounting policies described below.

A/Basis of consolidation

The consolidated financial statements include the accounts of CAP GEMINI SOGETI and those of its subsidiaries in which the Group owns a controlling interest. Companies in which CAP GEMINI SOGETI owns an interest in the equity ranging from 20 % to 50 %, and in which it has either an option to acquire a controlling interest or a substantial degree of management control, have been consolidated on the equity basis. All other interests in affiliates have been treated as unconsolidated investments.

B/Translation of foreign currencies

The financial statements of foreign subsidiaries have been translated into French francs at the year-end rates before translation into US dollars.

C/Income taxes

The adjustments to the accounts of the consolidated subsidiaries carried out this year for the first time, together with the differences between financial and fiscal reporting, have given rise to a deferred taxation account in the consolidated financial statements.

This account represents principally the effects of items of expense or income which are allowed or assessed for tax purposes in periods different from those in which they enter the income statement (in particular, in France, the provision for vacation pay and for employee profit sharing).

D/Property, plant and equipment

Property, plant and equipment are stated at cost less depreciation computed on the straight-line method, based on estimated useful lives :

- buildings	30 years
- equipment	7 years
- vehicles	5 years
- fixtures & fittings	10 years

Fixed assets acquired on a long term hire purchase contract have been recorded for their market value at contract date and depreciated on their estimated useful life.

E/Intangible fixed assets

- « Other fixed assets » include program products, either acquired or manufactured by companies of the Group, and stated at cost. Program products performed under contracts signed in France with the «Délégation à la Recherche Scientifique et Technique» are amortized over the duration of the contract, for the part financed by this organization.
Other program products are amortized over a period not exceeding 5 years.
- Goodwill represents the difference at date of acquisition between the purchase price of investments in consolidated companies and the Group's share of the net assets of those companies. It has been determined by taking into account the valuation of intangible fixed assets at the date of incorporation of the Group. Goodwill is amortized over a period not exceeding 40 years.

F/Inventories

Inventories and work in progress are stated at cost, this being lower than net realizable value.

G/Contracts operating over several fiscal years

Income and expense relating to contracts operating over several fiscal years are accounted for in accordance with works performed. Their outstanding balance is shown under the heading « Prepaid expenses ». Unfavourable variances expected on final performance of works are accounted for when they are known.

II/CHANGES IN BASIS OF ACCOUNTING IN 1977

As a result of the Company's decision to conform with the accounting standards issued by the IASC with effect from the current financial year, the main following changes have been made to the Group's basis of accounting :

A/Goodwill and amortization of goodwill

Whilst net assets and 1977 net income were not materially affected by stating under the same heading the items shown in 1976 under the separate headings of « Goodwill » and « Goodwill on consolidation », the retroactive amortization recorded for the first time in 1977, based on the various acquisition dates of consolidated companies, had the following effects :

- to reduce retained earnings at December 31, 1977 by	$ 403 609
- to reduce 1977 net income by	211 253

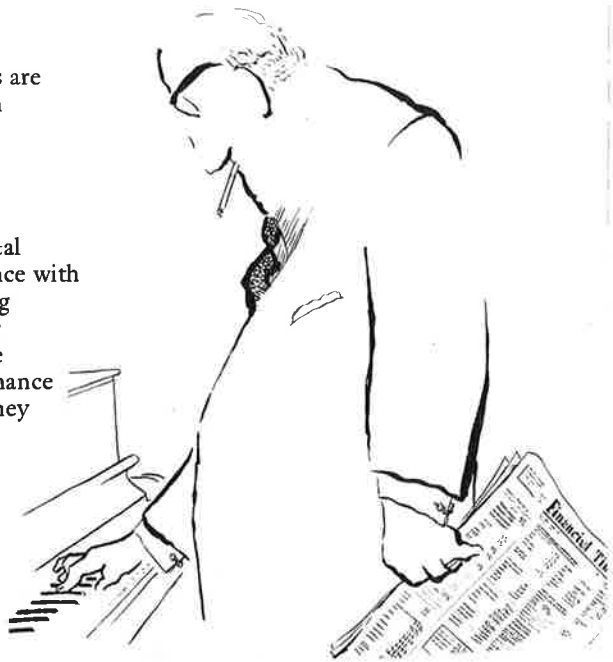
B/Restated items

The restated items relating to :
- contracts with DGRST
- provisions for vacation pay and profit sharing
- tax losses carried forward

had the following effects :

- to increase retained earnings by	189 384
- to increase 1977 net income by	242 038

Note on the "1977 Consolidated Financial Statements" continued p. 28



CONSOLIDATED BALANCE SHEET *(in thousands of US dollars)*

December 31,

ASSETS	1977			1976
	Gross amount	Depreciation or Provisions	Net	Net
Cash	2 654		2 654	2 344
Accounts and notes receivable	23 548	473	23 075	14 254
Inventories	1 414		1 414	487
Prepaid expenses	7 287		7 287	4 645
Other current assets	7 812	547	7 265	3 798
CURRENT ASSETS	42 715	1 020	41 695	25 528
Goodwill	7 932	615	7 317	7 398
Equity investment in affiliates	369		369	
Investment in subsidiaries not consolidated	936	117	819	924
Other non current assets	1 501	401	1 100	623
Property, plant and equipment	7 558	2 233	5 325	4 797
Other fixed assets	4 161	1 563	2 598	1 397
NON CURRENT ASSETS	22 457	4 929	17 528	15 139
TOTAL ASSETS			59 223	40 667
Guarantees given by third parties			1 496	

LIABILITIES AND STOCKHOLDERS'EQUITY	1977	1976
Current portion of long term debt.	635	1 314
Accounts and notes payable	21 407	11 761
Accrued liabilities	10 619	6 082
Income taxes	3 418	2 158
CURRENT LIABILITIES	36 079	21 315
Long term debt	6 151	5 010
Employee profit sharing	1 534	1 231
Other	679	530
NON CURRENT LIABILITIES	8 364	6 771
MINORITY INTERESTS	2 030	1 961
STOCKHOLDERS' EQUITY		
Common stock 340.000 shares (1976, 135 170 shares) of FF 100 each	7 219	2 870
Retained earnings at beginning of year	3 234	5 754
Net income for the year	2 297	1 996
TOTAL STOCKHOLDERS'EQUITY	12 750	10 620
TOTAL LIABILITIES AND STOCKHOLDERS'EQUITY	59 223	40 667
Commitments and contingent liabilities	2 333	

$ 1 = FF 4.71

AUDITORS' OPINION

ON THE CONSOLIDATED FINANCIAL STATEMENTS OF CAP GEMINI SOGETI

We have examined the consolidated financial statements of CAP GEMINI SOGETI for the year ended December 31, 1977.

The bases of consolidation adopted by the company conform with the statements of standard accounting practice issued by the International Accounting Standards Committee and are in accordance with the policies set out in the notes to the financial statements ; these policies conform with generally accepted accounting principles.

Following our examination of the financial statements of CAP GEMINI SOGETI and of the methods of consolidation, we confirm that, in our opinion, these policies have been properly applied.

Grenoble, April 17, 1978.

Jacques BOURGUIGNON
Commissaire aux Comptes
VENON

38610 GIERES

Bernard PUGNIET
Commissaire aux Comptes
90c, cours de la Libération

38100 GRENOBLE

To the Board of Directors
Cap Gemini Sogeti S.A.

In accordance with your instructions, we have assisted and advised the company as to accounting policies adopted by it for the first time for the purpose of the preparation of the consolidated financial statements for the year ended December 31, 1977.

We confirm that the accounting policies set out in the notes to the consolidated financial statements and in the accounting manual of Cap Gemini Sogeti S.A. conform with the statements of standard accounting practice issued by the International Standards Accounting Committee and in force at the relevant time.

We would add that the consolidated financial statements expressed in U.S. dollars have been translated from the consolidated financial statements expressed in French francs by applying the exchange rate at December 31, 1977 of U.S. $ 1 = French francs 4.71.

In order to facilitate an appreciation of these consolidated financial statements, this same exchange rate has been applied to both 1976 and 1977.

April 26, 1978.

Mclintock Main Lafrentz & Co

III/PROPERTY, PLANT AND EQUIPMENT

	1977*	1976*
Land	299	262
Buildings	2 186	2 083
Equipment	2 628	1 500
Fixtures & fittings	2 445	2 064
	7 558	5 909
Accumulated depreciation	2 223	1 112
	5 325	4 797

** (in thousands of US dollars)*

IV/OTHER FIXED ASSETS

These include the following program products for a net value of :

- products performed for DGRST contracts 715 074
- program products - France . 643 312
- program products - International. 1 144 798

V/INVESTMENT IN SUBSIDIARIES NOT CONSOLIDATED

These include :

- Shareholdings above 50 % (dormant companies) 171 338
- Shareholdings ranging from 20 to 50 % (with neither an option to acquire a controlling interest nor a substantial degree of management control) 479 830
- Shareholdings equal to or below 20 % 284 501

935 669

- Less amortization . . . . . (116 985)
- Net amount 818 684

VI/PREPAID EXPENSES

These include an amount of 6 467 303 dollars relating to work performed under contracts operating over several fiscal years and not yet billed at December 31, 1977. This amount represents 7.2 % of total turnover, as compared to 7.5 % as of December 31, 1976.

VII/COMMON STOCK

As proposed by the Board of Directors, the Shareholders' meeting of December 5, 1977 increased the capital stock from $ 2 869 851 to $ 7 218 683 by capitalizing an amount of $ 4 348 832 detailed as follows:

- Merger premium 1 982 484
- Share premium 1 910 828
- Special reserve 455 520

Common stock is now made of 340 000 shares of FF 100 each ($ 21.23), fully paid.

CONSOLIDATED STATEMENT OF INCOME

(in thousands of dollars, converted from French statements at the rate of $ 1 = FF 4.71)	Year ended December 31, 1977 Amount	%	December 31, 1976 Amount	%
INCOME				
Fees from services rendered	85 177	94.72	50 351	94.85
Interest and other	4 743	5.28	2 734	5.15
TOTAL INCOME	89 920	100.00	53 085	100.00
OPERATING EXPENSE				
Purchases	17 638	19.61	1 071	2.02
Wages and salaries	48 450	53.88	34 383	64.77
General and administrative expenses	15 858	17.64	12 662	23.85
Interest expense	2 060	2.29	1 460	2.75
Depreciation	1 752	1.95	1 064	2.00
TOTAL OPERATING EXPENSE	85 758	95.37	50 640	95.39
NET OPERATING INCOME	4 162	4.63	2 445	4.61
NET INCOME after income taxes, profit sharing and exceptional items	2 775	3.09	2 029	3.82
Minority interests	(478)	(0.53)	(33)	(0.06)
NET INCOME	2 297	2.56	1 996	3.76
GROSS CASH-FLOW before income taxes of	6 336 / 1 522	7.05 / 1.69	4 769 / 1 108	8.98 / 2.09

LIST OF CONSOLIDATED COMPANIES

Shareholdings owned by:	%
CAP GEMINI SOGETI S.A (direct)	
CAP EUROPE	100
CAP SOGETI EXPLOITATION	100
CAP SOGETI FORMATION	100
CAP SOGETI GESTION	100
CAP SOGETI L.G.D	100
CAP SOGETI LOGICIEL	100
CAP SOGETI PRODUITS	100
CAP SOGETI SYSTEMES	100
S.E.S.I	100
SORINFOR	98
CAP SOGETI SAISIE	90
GEMINI COMPUTER SYSTEMS Inc	78
GROUPE BOSSARD S.A	51
CAP GEMINI SOGETI S.A + CAP EUROPE	
CAP GEMINI SUISSE	70
CAP EUROPE	
CAP EUROPE OPERATIONS	100
CAP GEMINI NEDERLAND	100
CAP GEMINI BELGIUM	99
B.R.A	80
GEMINI COMPUTER SYSTEMS Inc.	
CAP GEMINI DEUTSCHLAND	100
GEMINI U.K	100
PANDATA	100
GROUPE BOSSARD S.A	
AGEUROP	99
B.I.A	99
COGI	97
ISP ASSOCIES	82
SPERAR	63
BOSSARD CONSULTANTS	51
BOSSARD CONSULTANTS	
BOSSARD INGENIERIE	100
O.B.M	100
S.C.I.C	99
AUDEPAR	97
BOSSARD INSTITUT	94
ORGADEV	93
ORES	92
I.D.CONSEIL	91

VIII/LONG TERM DEBT

Long term debt includes exclusively loans in French francs granted by French financial organizations. At December 31, 1977, the average rate of interests was 10.11 %.

Maturity dates	Long term debt	Current portion of long term debt
1978		635 244
1979	1 229 724	
1980	2 218 683	
1981	756 475	
1982	636 942	
1983	636 942	
Subsequent	672 186	
TOTAL		635 244

The above loans are secured on fixed assets amounting to 2 309 766 dollars.

IX/ACCRUED LIABILITIES

These relate to charges concerning the current fiscal year but not yet payable as of December 31, 1977, and include :

- Provisions for vacation pay . . 1 818 683
- VAT accrued in respect of trade receivables (tax payable on collection) 2 217 834

X/CONTINGENT LIABILITIES - GUARANTEES RECEIVED

- Contingent liabilities, excluding secured loans . . . . . 2 205 945 (see VIII above)
- Guarantees received 1 495 754

XI/CHANGES IN GROUP STRUCTURE DURING 1977

The following main changes occurred in 1977 in the consolidated structure of the Group :

- The consolidation of GROUPE BOSSARD SA and its subsidiaries.
- Increase in the shareholding in the GEMINI Group from 59 % to 78 %.
- Increase – through the sub-holding company CAP EUROPE – of the shareholding in BRA (from 20 % to 80 %) and in CAP GEMINI Belgium (from 76 % to 99 %).

COMPARATIVE STATEMENTS OF INCOME - 1977/1976 - ON EQUAL STRUCTURE BASIS*

In order to compare the 1977 and 1976 consolidated statements of income on the basis of the same operations, we show hereunder the 1977 consolidated statement of income (as well as the 1977 and 1976 statements printed on the previous page), **excluding Groupe BOSSARD**, *which was not consolidated in 1976.*

This comparison shows that between 1976 and 1977, (all statements being converted for this purpose at the rate of $ 1 = FF 4.71) the total revenue of CAP GEMINI SOGETI increased by 17.2% whereas:

- *wages and salaries increased by 19.2%*
- *general and administrative expenses increased by.....4.6%*
- *interest expense increased by 11.9%*
- *total operating expense increased by 16.4%*
- *operating income increased by 34.1%*

COMPARATIVE STATEMENT OF INCOME *(in thousands of dollars, converted from French statements at the rate of $ 1 = FF 4.71)*	1977 Consolidated		1977 Consolidated (excluding BOSSARD)		1976 Consolidated (not restated)		Variance 77/76
	Amount	%	Amount	%	Amount	%	
INCOME							
Fees from services rendered	85 177	94.72	58 768	94.48	50 351	94.85	
Interest and other	4 743	5.28	3 434	5.52	2 734	5.15	
TOTAL INCOME	89 920	100.00	62 202	100.00	53 085	100.00	17.2%
EXPENSE							
Purchases	17 638	19.61	1 497	2.41	1 071	2.02	
Wages and salaries	48 450	53.88	40 978	65.88	34 383	64.77	19.2%
General and administrative expenses	15 858	17.64	13 239	21.28	12 662	23.85	4.6%
Interest expense	2 060	2.29	1 634	2.63	1 460	2.75	11.9%
Depreciation	1 752	1.95	1 575	2.53	1 064	2.00	48.0%
TOTAL EXPENSE	85 758	95.37	58 923	94.73	50 640	95.39	16.4%
NET OPERATING INCOME	4 162	4.63	3 279	5.27	2 445	4.61	34.1%

**This table does not belong to the consolidated financial statements*

PEOPLE AND JOBS

An analysis of the employee structure of the CAP GEMINI SOGETI Group, as summarized in the table below, gives a basis for a number of comments.
- to begin with, we might recall that, with a total of 2,400 employees (to which some 40 holding-company employees should be added), the Group is by far Europe's largest in the computer service field of activity. By contrast, there are four or five larger groups in the United States, the largest of which employs in the neighborhood of 7,000 people.

- of these 2,400 employees:

88% are employed directly in computer services
12% - only - are engaged in management consulting and communications

73% are employed by companies chartered under French law
27% belong to companies outside of France

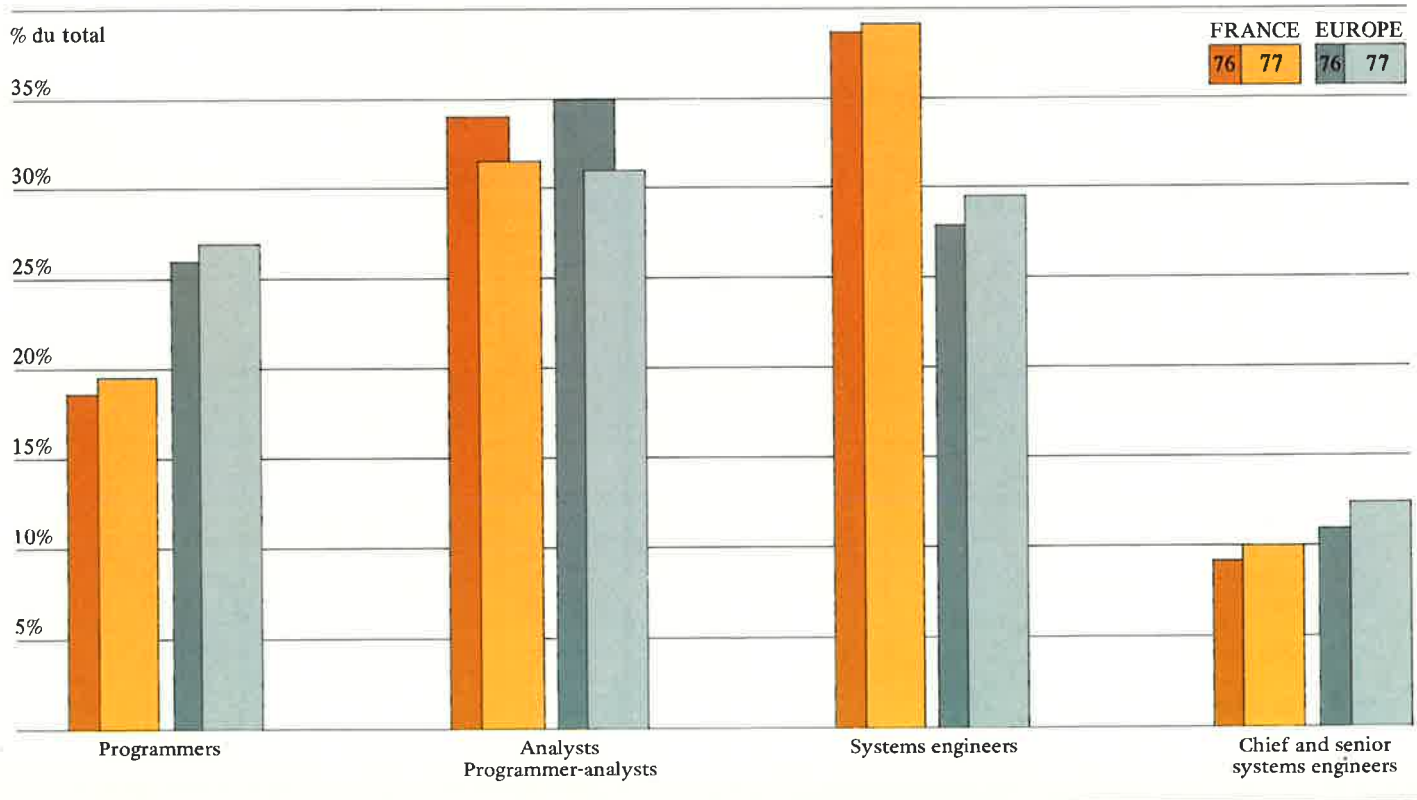
85% are «invoiceable» professionals
15% make up the marketing, administrative and management teams.

With regard to this ratio of «non-productive» to «productive» employees, it should be noted that it is virtually identical from one company to the next, but is higher in Sweden and also in the management/communications activity, and generally lower in France - where the companies are larger - and, particularly, in the computer-based activity (including service bureau, data entry services and assistance to computer operations).

EMPLOYMENT BY CAP GEMINI SOGETI OPERATING COMPANIES AS AT 31/12/1977 (exclusive of holding companies)

Activity	Country	Professionals	Sales & administrative	TOTAL	
1/ Computer services					
• Software services (including all «intellectual services»: consulting, technical assistance, software design and implementation, large projects, master plans, turnkey systems, training, etc.)	Belgium	62	11	73	total «outside France»: 656 (27%)
	West Germany	54	11	65	
	Holland	161	31	192	
	Sweden	71	22	93	
	Switzerland	65	12	77	
	UK	89	16	105	
	Others (USA, Iran, products, etc.)	36	15	51	
	France	913	149	1 062	total France 1 745 (73%)
Subtotal, software services		(1 451)	(267)	(1 718)	
• Computer-based services	France	364	39	403	
2/ Management,consultancy and communications	France	218	62	280	
TOTAL, operating companies		**2 033**	**368**	**2 401**	

COMPARISON OF EMPLOYEE CATEGORIES ENGAGED IN SOFTWARE SERVICES ACTIVITY



- of the 1,815 professionals
working in the EDP service sector itself, the distribution between those employed in software services and those forming the «computer-based» division is exactly 80:20.

- of the 1,451 professionals
engaged in software services, the distribution among the four major categories of computer professionals is as follows:

Category of professionals	France	«Europe»	Total
Programmers	20%	27%	22%
Analysts and Programmer analysts	31%	31%	31%
Sub total	51%	58%	53%
Systems engineers	39%	30%	37%
Chief and senior systems engineers	10%	12%	10%
Subtotal all systems engineers	49%	42%	47%

Here again, two observations may be made:
- nearly one-half of all «productive» employees (49% in France, 42% in the «Europe» division) are systems engineers, or above, clearly indicating the technical sophistication of this profession or, in any case, the manner in which CAP GEMINI SOGETI practices it,
- differences observed between France and the «Europe» division are essentially related to the fact that the European subsidiaries are of more recent origin, and that France has a larger basic software market with the computer manufacturers. At the same time, it should be noted that these discrepancies are tending to dwindle as shown in the diagram below, illustrating the 1976-1977 development of employee structures in the French (CAP SOGETI) and «European» (CAP GEMINI) companies.

Two essential components of CAP GEMINI SOGETI policy are the controlled evolution of the employee structure, offering increasing room for high level qualifications, together with the incentives extended to employees to take full charge of their own training. This policy helps the Group maintain teams of competent, highly motivated people, without whom no development is possible in an industry that subsists almost exclusively on brainpower.

THE USES OF NON-INVOICED TIME:

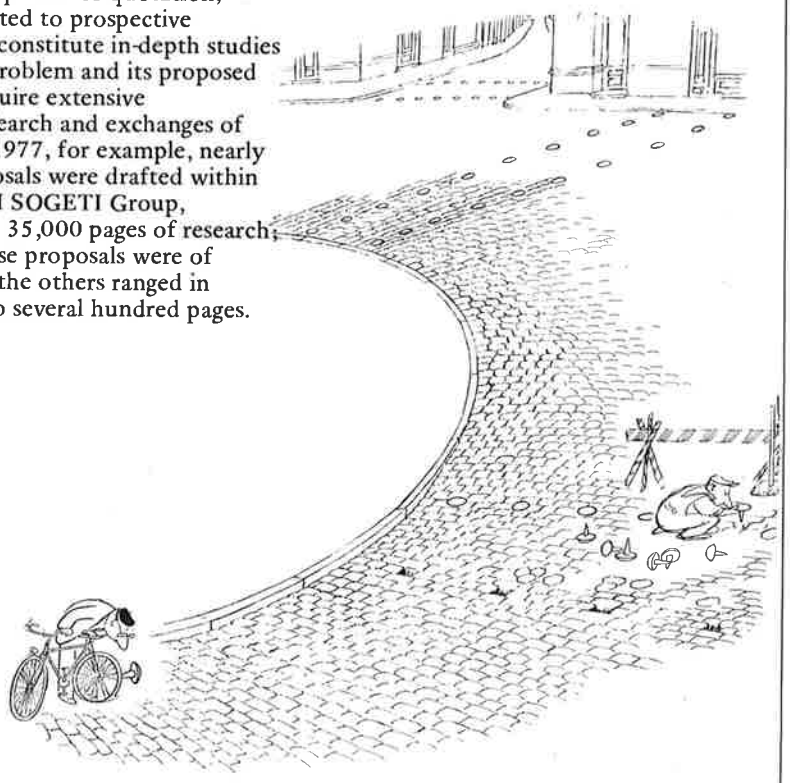
The very nature of CAP GEMINI SOGETI's activities presupposes that a substantial portion of productive employees'time will not be invoiced: in 1977, for example, the average invoicing rate was on the order of 74% of total salaried time. This percentage,which might seem «normal», nonetheless means that, at any given moment, 520 (!) out of a total 2,000 employees are engaged in non-invoiced activities.

Just what are they doing?
- 170 are on paid vacation
- 60 are absent for various reasons: sickness, special leave, union activity, etc.
- 140 are undergoing training, or working on contracts for which the company is not invoicing (e.g., overlap of two assignments, overruns on fixed price contracts), or simply awaiting reassignment.

And the remaining 150?
They are busy with a whole range of duties which may be broken down as follows:
1/ design, development and maintenance of tools and methods;
2/ basic study (languages, hardware, data communication techniques, marketing etc.);
3/ development and drafting of technical proposals: in view of the increasing complexity of requests for quotation, proposals submitted to prospective customers often constitute in-depth studies of the contract problem and its proposed solution, and require extensive documentary research and exchanges of information. In 1977, for example, nearly 2,000 such proposals were drafted within the CAP GEMINI SOGETI Group, representing over 35,000 pages of research; two-thirds of these proposals were of modest size, but the others ranged in length from 30 to several hundred pages.

At any given time, then, out of a total workforce of 2,000, 150 CAP GEMINI SOGETI professionals are engaged in research and development activities. This investment is obviously an economically-efficient one, as these studies contribute to enhancing the Group's technological ability and to establishing an image of quality.

Above all, however, the investment is a human one, insofar as each individual, at this level of professional competence, may be assumed to be responsible for his own training, regardless of the subject (data processing, management, working methods, etc.). Obviously, this training is not genuinely constructive and enriching unless it is acquired «on the ground», based on concrete problems that attract the participation of all parties concerned. Moreover, the teamwork situation - whether for an invoiced contract or an «internal» mission - offers an added advantage: interpersonal communication becomes an educational experience and, thanks to the changes in the makeup of working groups, there is a constant: confrontation of fresh ideas, experience and knowledge.



PRINCIPAL LOCATIONS

Holding company

CAP GEMINI SOGETI	Grenoble	6 boulevard Jean Pain BP 206	38005 GRENOBLE CEDEX	33 (76) 44 82 01
	Lyons	241 rue Garibaldi	69422 LYON CEDEX 3	33 (78) 60 43 10
	Paris	17 avenue George V	75008 PARIS	33 (1) 723 61 85

Cap Gemini Sogeti companies

BELGIUM	CAP GEMINI Belgium	Brussels	49 rue du Châtelain	1050 BRUXELLES	32 (2) 649 96 40
		Antwerp	Mechelsesteenweg 137	2000 ANTWERPEN	32 (31) 30 07 02
DENMARK	BRA (see Sweden)	Roskilde	Vindingevej 9	4000 ROSKILDE	45 (3) 36 99 90
FINLAND	BRA (see Sweden)	Helsinki	Henry Fordinkatu 5c	00150 HELSINKI 15	358 (0) 63 42 45
FRANCE	CAP SOGETI EXPLOITATION	Paris	126 rue Réaumur	75002 PARIS	33 (1) 233 10 47
	CAP SOGETI FORMATION	Paris	92 boulevard du Montparnasse	75682 PARIS CEDEX 14	33 (1) 320 13 81
	CAP SOGETI GESTION	Paris	20 rue Leriche	75738 PARIS CEDEX 15	33 (1) 539 22 25
		Bordeaux	74 rue Georges Bonnac	33000 BORDEAUX	33 (56) 96 02 30
		Grenoble	6 boulevard Jean Pain BP 206	38005 GRENOBLE CEDEX	33 (76) 44 82 01
		Lyons	241 rue Garibaldi	69422 LYON CEDEX 3	33 (78) 60 90 03
		Marseilles	22 rue Léon Paulet	13008 MARSEILLE	33 (91) 76 52 91
		Nancy	10 rue Raymond Poincaré	54000 NANCY	33 (28) 35 07 56
		Nantes	10 rue Mondésir	44000 NANTES	33 (40) 71 08 37
		Orleans	19 rue de la République	45000 ORLÉANS	33 (38) 87 86 50
		Roubaix	62 avenue Jean Lebas	59100 ROUBAIX	33 (20) 70 15 54
		Rouen	Palais des Congrès, rue des Carmes	76000 ROUEN	33 (35) 88 27 88
		Toulouse	118 boulevard Déodat de Séverac	31300 TOULOUSE	33 (61) 42 71 57
	CAP SOGETI L.G.D.	Paris	5 rue des Morillons	75015 PARIS	33 (1) 539 22 25
	CAP SOGETI LOGICIEL	Paris	5 rue Louis Lejeune	92128 MONTROUGE CEDEX	33 (1) 657 13 31
		Grenoble	6 boulevard Jean Pain BP 206	38005 GRENOBLE CEDEX	33 (76) 44 82 01
	CAP SOGETI PRODUITS	Paris	20 rue Leriche	75738 PARIS CEDEX 15	33 (1) 539 22 25
	CAP SOGETI SAISIE	Paris	21 rue Leriche	75738 PARIS CEDEX 15	33 (1) 539 22 25
		Bordeaux	74 rue Georges Bonnac	33000 BORDEAUX	33 (56) 96 02 30
	CAP SOGETI SYSTEMES	Paris	92 boulevard du Montparnasse	75682 PARIS CEDEX 14	33 (1) 320 13 81
		Rennes	1 place du Maréchal Juin	35100 RENNES	33 (99) 79 05 80
	SESI	Lyons	241 rue Garibaldi	69422 LYON CEDEX 3	33 (78) 60 77 43
		Grenoble	21 bd des Déportés du 11 Novembre 1943	38100 GRENOBLE	33 (76) 87 87 17
		Marseilles	376 avenue du Prado	13008 MARSEILLE	33 (91) 71 25 68
	SORINFOR	Paris	36 rue de Vouillé	75015 PARIS	33 (1) 533 78 80
NEDERLAND	PANDATA	Rijswijk	366 Sir Winston Churchilllaan	RIJSWIJK ZH	31 (70) 94 93 25
	CAP GEMINI Nederland	Utrecht	Kaap Hoorndreef 62	UTRECHT	31 (30) 62 03 44
SWEDEN	BRA	Stockholm	Bredängstorget 1	BOX 2054, 12702 SKÄRHOLMEN	46 (8) 88 03 00
		Göteborg	Artillerigatan 25	41502 GÖTEBORG	46 (31) 25 03 40
		Karlskoga	Küngsvägen 33	69100 KARLSKOGA	46 (586) 503 80
		Malmö	Södra Tullgaten 4A	BOX 4179, 202 13 MALMÖ	46 (40) 11 44 80
		Sundsvall	Torggatan 9	85231 SUNDSVALL	46 (60) 12 55 40
SWITZERLAND	CAP GEMINI Suisse	Geneva	5c avenue de Champel	1211 GENÈVE 12	41 (22) 47 80 00
		Basel	Lindenhofstrasse 7	4052 BASEL	41 (61) 23 41 41
		Lausanne	Chemin du Devin 51	1012 LAUSANNE	41 (21) 33 24 62
		Zürich	Brauerstrasse 60	8004 ZÜRICH	41 (1) 241 06 70
UNITED KINGDOM	GEMINI Ltd.	London	38/44 Gillingham Street	LONDON SW IV IHU	44 (1) 828 66 34
		Manchester	80 Manchester Road	ALTRINCHAM WA14 4PL	44 (61) 941 19 22
U.S.A.	CAP GEMINI Inc.	Washington DC	313 Maple Avenue West	VIENNA Virginia 22180	1 (703) 281 20 60
WEST GERMANY	CAP GEMINI Deutschland	Düsseldorf	Grafenberger Allee 30	4000 DUSSELDORF 1	49 (211) 67 50 05
		Munich	Lindwurmstrasse 117	8000 MUNICH 2	49 (89) 77 20 73

Groupe Bossard companies

BELGIUM	AGEUROP IBOM	Brussels	211 avenue Bruggmann	1180 BRUXELLES	32 (2) 345 19 05
FRANCE	GROUPE BOSSARD	Paris	12 rue Jean Jaurès	92807 PUTEAUX	33 (1) 776 42 01
ITALY	BOSSARD Communicazione	Milan	43 Viale Tunisia	21100 MILANO	39 (2) 66 13 81
SPAIN	OBM España	Madrid	58 Nuñez de Balboa	MADRID 1	34 (1) 275 09 17

Associated companies

FRANCE	CISI	Paris	35 boulevard Brune	75680 PARIS CEDEX 14	33 (1) 539 25 10
	EURINFOR	Lyons	241 rue Garibaldi	69422 LYON CEDEX 3	33 (78) 62 20 37
ITALY	SYNTAX	Milan	8 via Gaetano Negri	20123 MILANO	39 (2) 87 74 44
MOROCCO	ISMA	Casablanca	61 rue Lamoricière	CASABLANCA	212 27 92 52
SPAIN	ERIA	Madrid	Calle Velazquez 138 B2	MADRID 6	34 (1) 411 31 14

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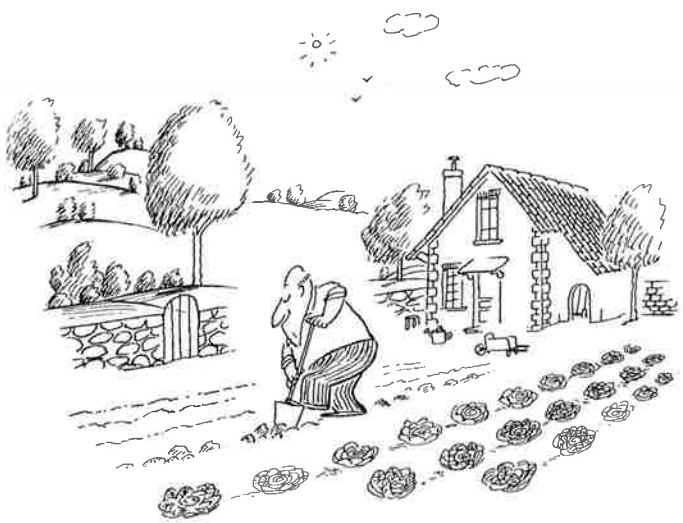

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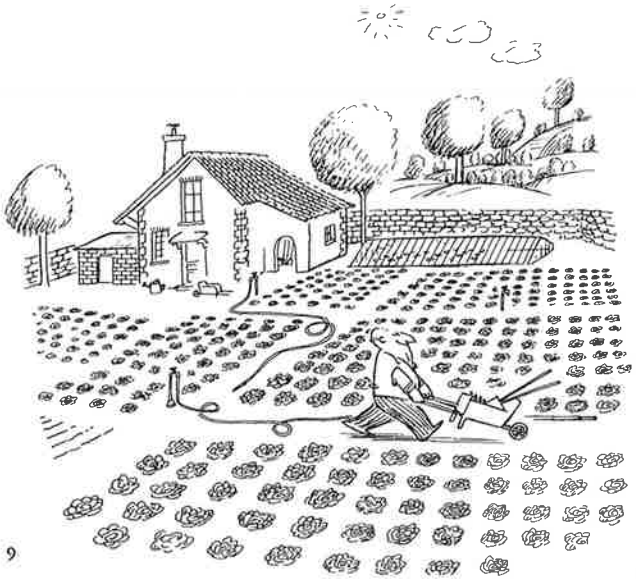

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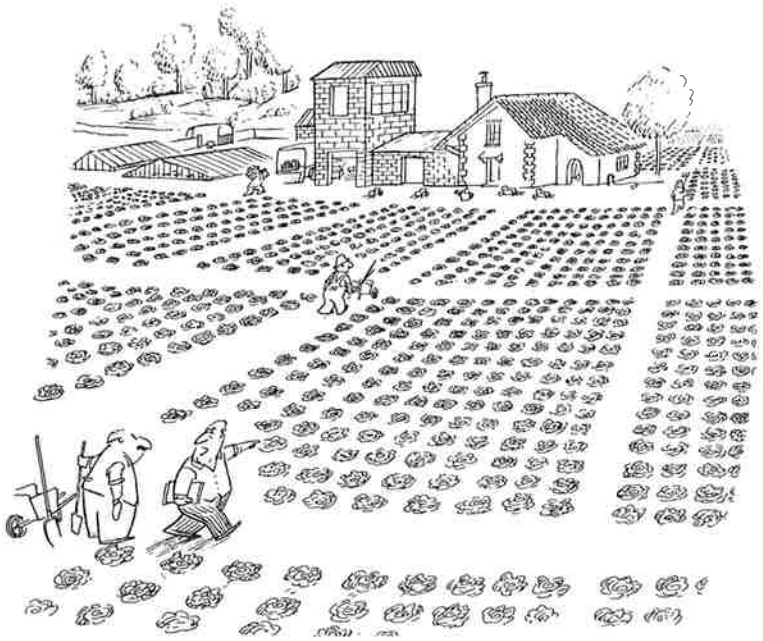

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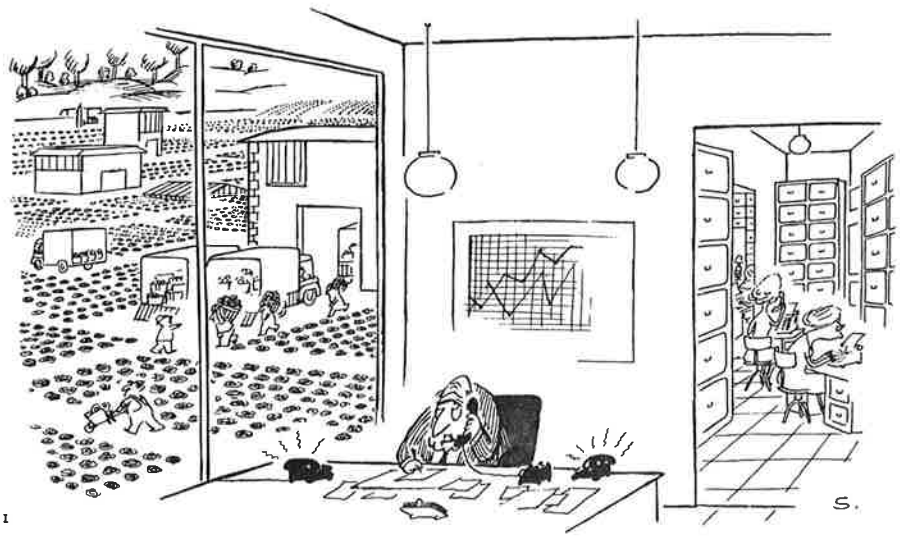

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