INTRODUCTION/GREETING

SOME PERSPECTIVES

The fundamental aspects of the computer marketplace, from a supplier's viewpoint, are essentially the same today as they were at Control Data's founding some eighteen years ago. Control Data's strategy vis-a-vis those fundamentals are likewise the same.

First there is technology. Control Data since its inception has been blessed with an abundance of superior technical talent relating to information and computer technology. The reasons for this are many, and, in the beginning at least, even somewhat accidental. There is no need to go into that. But if we were lucky, we have also carefully nurtured and cultivated the people who represent this resource. High technology gave Control Data its birth and still fuels its growth.

Technology, however, and more importantly rapidly changing technology, also involve great risk and demand large financial resources. The demand for large financial resources, set in motion a mode of operation - that of cooperative programs - which has become a dominant feature of Control Data's character.

Only volume production for example could justify the investment necessary to develop a line of peripheral equipment. This gave birth to Control Data's OEM business. The OEM philosophy was strange indeed in the computer world of the
early 1960's and most especially for those in computer systems. But it was essential to survival. In more recent years, OEM has matured into a series of international cooperative ventures. Such ventures are in fact more sophisticated versions of the original OEM concept.

The essential element is sufficient volume to justify the investment necessary to remain technologically competitive. Cooperative ventures, of course, have the added advantage of sharing the development costs and asset investment costs as well. The dominance of IBM worldwide make any other course of action unworkable. Some came to this realization early, some - only recently. (Reference Emmitt Noland article). You are perhaps familiar with our cooperative ventures with NCR which have been in place for nearly three years now. One of these is Computer Peripherals, Inc. in which it is hoped ICL will be a partner. More recently has been the announced venture with Honeywell - Magnetic Peripherals, Incorporated - which is expected to be finalized shortly. In this venture CDC will own 70% and Honeywell 30%. CDC will manage the business.

All this - taken together - means is that Control Data and its partners are the largest peripheral product suppliers outside IBM. In the area of disc memories it is the only viable supplier outside IBM. By next year it is expected that one-third of all disc drives shipped will come from Control Data. Through cooperative arrangements and OEM other companies large and small participate in and benefit from the economies of scale thus achieved. Control Data's own systems business is one of those beneficiaries and I will turn to that subject in a moment.

Before that however, let me make a few other comments on cooperative programs. The most difficult aspect of cooperation
(or OEM for that matter) we have always faced is convincing others that we have no desire that technological cooperation involve marketing joint ventures. That Marketing independence and integrity of all partners is essential. The essence of cooperation is to provide a means for viable separate marketplace enterprises to exist in the face of IBM's dominance. (Again reference Emmit Noland Article) This has been extremely difficult as you might guess with companies on the continent. ICL on the other hand has understood and endorsed the concept.

A final comment is that we continue to expand the concept of cooperation. Both in technology itself and in financing innovation. With NCR there is a mainframe cooperation. We have cooperative programs with governments as well - as in Canada - where a major portion of our new CYBER 170 models are being built. Deliveries of these new systems began this week. We have extended the cooperation to software.....as in Russia where we expect a major undertaking in the field of computer based education. We have also tried to hammer at the problem of providing technological breathing room by cooperative efforts in setting standards. The alternative has been to allow IBM to willy-nilly to establish them at its pleasure. Multinational data has been a principal effort in this regard. Since negotiation of standards is easily as difficult as negotiating multinational trade agreements progress has been similarly slow.

Today Control Data has cooperative programs in place or in discussion with the governments of five countries, some eight corporations, and several state and local governments.

The thrust is the same-to provide the wherewithal for many independent entities to contribute to and benefit from shared
technology.

Beyond providing the wherewithal of technology, Control Data for itself has the task of finding marketplace existence. And as with the maturation from OEM to cooperation there has been an evolution of our basic strategy in this regard as well.

Let me move now from technology and the vehicles for financing it to the market and Control Data. Fundamentally it is a matter of applications. Control Data has since its inception seen its principal role as that of a service company to those applying computer technology. The original corporate prospects envisioned a basic thrust of consulting and design services to others engaged in the design of hardware and software to solve specific applications. As it turned out in pursuing one of those applications - that of weather modeling - it ended up that the 1604 computer was launched. It is not widely understood that the mainframe business on which Control Data's early fortunes were so dependent drew on this fundamental strength - application concern and knowledge as opposed to any esoteric concern with circuit technology and system design.

And it is application of computing technology that continues to guide our business planning. Let me dwell on this point a moment for it is fundamental to understanding the commitment we have to computer systems - especially large computer systems and computing networks.

There has been the tacit and very strong assumption in the world that possession of computer technology will provide direct and immediate benefit to all segments of an economy. This has been true whether we think in terms of an individual user in his approach to computer acquisition or countries in
their desire for internal development of computer technology. Of course, today there is at least a vague awareness that this is not true. We speak of services, of applications, of data transmission, and so on. But still it is hard to accept - for any of us. The fact is however that outside of direct economic benefit from manufacture and sale of computers - like toasters or any other product - computers have not achieved a significant economic benefit for any corporate or political economic unit of the world. It is highly doubtful that productivity gains in the United States since WWII can be attributed in any significant way to computers. In fact, productivity increases have been smallest since the mid-sixties when the computer first reached widespread acceptance. It is, of course, superficial to suggest what that suggests, but it does not make you stop and think.

We all know why economic benefit does not directly flow from possession - we know that analysis must be done, that software or applications must be made and so on. But we really don't believe it is hard or even want to believe it is hard. We assume that it will just happen - after all why shouldn't it? The need is so great! But it doesn't, it hasn't, and it won't - it has to be made to happen.

That it hasn't happened even IBM has admitted. Frank T. Cary, President, has said - Let me read to you -

What Mr. Cary implies among other things - but doesn't say explicitly - is that it requires some fantastic set of talents to turn a good idea for computer application into a workable
one - and, by and large, that expertise is not available to many thousands of computer owners. He also says very explicitly that we spend 88% of our money just to stand still - that is, on mere possession and operation of the physical device. Since even the other 12% is not directed, concentrated, or applied to top quality people resources, the result is inevitable.

These thoughts lead to a basic concept which we in Control Data refer to as levels of service.

(Chart) This concept is represented in graphical form on this chart (chart)

Let me preface my remarks on this chart by talking about the consumer. Consumer markets are normally very far removed from any discussion concerning the computer industry. It is easy to forget in such discussions that the ultimate goal of economical activity is to deliver goods and services to the consumer and that ultimately the sophisticated and hierarchical structure of commercial and governmental organizations in our economies are all oriented towards this purpose. In certain areas, such as education a much more direct relationship between computing technology and improved consumer services has been clear. In others such as health care it is emerging.

The important concept that I want to leave with you, however, deals with not the consumer level directly, but what is here referred to as application services. Traditionally, the user of computers has been put in the position of having to build and operate his own service company. To be sure, the computer manufacturers offered him great promises with respect to
education, consulting assistance, software packages, but these were only, at best, inadequate building blocks to the user who was literally faced with building a computer service company. Now the problems of building data services companies received a lot of visibility several years ago, and the problems of these businesses certainly became evident to the investment community. What is more interesting is that we tend to overlook the fact that each and every purchaser of a computer system was faced in one form or another with exactly the same problems that entrepreneurial data service companies faced - the same problems of management, many of the same problems of marketing, even though to internal users, and the same problems of being more technically oriented than business management oriented. But, in particular, each purchaser was faced with an enormous capital investment and need for operating people in order to deliver even rudimentary applications services. Beginning three or four years ago a growing awareness of this situation was more evident amongst management people. There has been a growing trend to think in terms of the total cost of delivering an application service as opposed to the cost of owning and operating a computer.

Every application service is based on an application system. An application system is a complete problem solving hardware software package. There are areas where it is better for the user to "operate the service company" but by the total application system. Systems delivering computer based education is a good example of this. Health care is another.

And, of course, there are users who simply require the traditional computer system. By computer system, I mean the computer hardware along with the systems software including compilers,
user-oriented problem solving languages and basic utility routines.

Finally, there are markets for the individual products and services themselves. And a strong rationale for making them available to everyone as we have discussed already regarding peripherals, OEM and cooperation. In addition, we do sell professional, educational, financial services and computer mainframes to others who in turn build computer systems, applications systems or operate their own application services.

Control Data then has a distinctly different strategy from other computer manufacturers. Our "product" range is broader in the sense that we offer all levels of service and others do not. On the other hand we deal in selected industry and market segments and work in those areas at the level of service most appropriate. A natural consequence of this is a desire to work with other application - service - operators to share basic technology and spread the risks. It also places a heavy reliance on the continued existence of a superior large computer engine.

It is also natural that the distribution of the power of the large computer has from the beginning been a major interest of the company.

By 1969 Control Data's Data Service Network in the United States was already well developed. As it continued to grow however it became clear to us that willy-nilly proliferation of major computing nodes would not be cost effective. This was not - nor is it - a matter of communication's cost or available technology, so much as it is a matter of operating...
practicalities: Facilities and cost proliferation, availability of quality personnel, superior and consistent service and response to network users, node balancing, network management, and so on. Since that time the so called "cluster center" concept has been the guiding force in our network development. Interestingly the Service Bureau Company had arrived at the same conclusion at about the same time so by the time it became a part of Control Data in 1973 the merger of the two networks was an easy matter. (Check reference Flowers Report)

Our network today has or envisions cluster centers in four U.S. locations and Brussels. Satellite centers in the U.S., Canada, Australia, Europe, and South America are linked to these clusters centers.

But once again I must come back to the central point - that of application of computing technology. The network in and of itself is of fundamental importance to us but it is not the end result as for example with GE's network service.

Control Data - because of the nature of its early area of interest in applications has always had a major interest in education. It is one of our principal market areas. We participate, of course, not only as a computer and application system supplier but as an educator as well in the area of vocational technical education. One of our earliest cooperative research projects was with the University of Illinois in the area of computer based education. A major program in this area is currently under discussion in Russia - we have major education programs underway in Iran and under study in Venezuela. Federal and state authorities in the United States are working with us on programs to use computer based education to treat the learning disabilities. Education for individuals
in business is destined to be a major portion of the business of Commercial Credit Company.

And all of this demands high technology in the areas of terminals and peripherals, mass storage, networks and of course, very large computers.

A subject to which I would now like to turn.

LARGE SYSTEMS
I mentioned earlier that our new CYBER 170 line began deliveries this week. As you can well imagine there is a great deal of excitement and enthusiasm in Control Data regarding these systems because they represent not only improved price performance and compatibility with CYBER 70's but also because they represent new technology, new and better manufacturing techniques for our manufacturing people, the first results of our Canadian cooperation, and an important step in an integration and extension of the various software systems developed in the 1960's. Moreover our development people already see further enhancement and improvements that can be made to the line and are at work on these. All of this gives new thrust to our systems business - and also our services business.

Even though deliveries of the 170 are beginning late in the year our other systems have done well......Revenues for 1975 will be up by 14 percent. We also have a growing world-wide base of customers. Shipments to new customers will be 40% of all large computer shipments in 1975.

STAR
In addition to the 170 however is the success achieved with STAR over the past twelve months. Two were delivered late
last year. Another will go out this year. A fourth will be used on a data services basis. Although we have made a huge investment in STAR technology we are just beginning to glimpse the exciting potential for its problem solving capability. Applications will be slow to develop we know because users must learn how to apply vector technology. We will foster this development. Shared use without the large capital investment required for ownership is a major part of this. We are hopeful that the European scientific community will be a part of learning to apply the potential that STAR represents. STAR is getting more and more attention in the United States. Before the end of August Control Data will announce the appointment of a senior executive who will be responsible for all aspects of the STAR program. There is no doubt that STAR will have an important place in computer history.

FUTURE OUTLOOK
Finally a few words about the future. As I said at the outset the basics remain the same. Technology will continue to improve, we will be in the forefront of technology as we always have, but we are in a position to manage it as opposed to react to it as we have had to do so much of the time in the past.

It will be many many years however before application of that technology to world-wide productivity problems reaches any-form of maturity. Cooperation and technology-flow are essential to addressing that issue.

Control Data is strongly positioned to participate. In the area of computer systems our program with NCR will produce the
next line by the end of this decade. This line as with the CYBER 170 will represent an evolutionary step for our current customers. Shared technology in Microcircuits, vector architecture, mass storage, subsystems and other peripherals as well as operating systems, memory design and mini computer technology will provide the wherewithal to produce this new line of systems.

In the area of networks there is a clear cut path, available technology and it is only a matter of effort to continually enhance and improve our network. Also because of our network and the Service Bureau Company we are one of the biggest users of IBM equipment. We are through this vehicle able to work with IBM users, and be in sync with whatever new computer systems are introduced by IBM.

Applications - of - computers is our principal thrust as it has been from the beginning of Control Data's existence. Cooperative agreements will aid our efforts in this regard as well. We expect major technological flow back in the area of applications from our work in Russia over the next fifteen years.

In one regard the future will be different for Control Data. Our basic strategy has led us to the point where all the resources have finally been assembled. By boot strap and fingernails we have moved from nothing in 1957 to a billion dollar corporation. We have acquired and grown technological resources, and set in place a world-wide series-of-cooperative-programs to reinforce these resources, and we have a large world-wide marketing and distribution system. For the future then there will at least internally be a greater intensity of effort on running our business well as opposed to growth.
While we expect growth of our Computer Business from $1,200 million in 1975, to close to $2,000 million in 1980, over the course of that period improvement in asset use and debt reduction will see a major change in the financial structure of the company.

The result for our customers and partners in cooperation around the world will be a greater quality of service and availability of resource. These services and resources perhaps, will enhance all our chances, of realizing the potential that computing technology offers to the problem of productivity.

Thank you.