

(D R A F T - 05/05/80)

CONTROL DATA CORPORATION
ANNUAL STOCKHOLDERS MEETING
MAY 7, 1980

ROBERT M. PRICE

GOOD MORNING!

TECHNOLOGICAL INNOVATION IS, AS MR. NORRIS HAS POINTED OUT, ONE OF THE MOST VITAL NEEDS OF THE WORLD TODAY. AND, NOT ONLY THAT.... IT'S MY BREAD AND BUTTER....IT'S THE BEDROCK OF THE PART OF CONTROL DATA THAT I MANAGE -- THE COMPUTER BUSINESS. THE SECRET OF SUCCESSFUL TECHNOLOGICAL INNOVATION IS SIMPLY: PRACTICALITY. OR, PUT ANOTHER WAY, IT IS APPLYING THE RIGHT KNOWLEDGE TO THE RIGHT PROBLEM AT THE RIGHT TIME.

NOT THAT IT IS ALWAYS OBVIOUS WHAT THE RIGHT PROBLEM AND THE RIGHT TIME WILL TURN OUT TO BE, OR AS MORE SUCCINCTLY PUT IN SOMETHING KNOWN AS MARSHALL'S GENERALIZED ICEBERG THEOREM: "SEVEN-EIGHTHS OF EVERYTHING CAN'T BE SEEN."

LET ME SHOW YOU SOME OF THE WAYS THAT WE ARE APPLYING TECHNOLOGY TO THE MAJOR NEEDS OF SOCIETY IN ORDER TO ASSURE PROFITABLE FUTURE BUSINESS OPPORTUNITIES FOR CONTROL DATA.

OPTICAL DISK TECHNOLOGY

FOR MANY YEARS, WE HAVE BEEN CLOSELY TRACKING....AND, INDEED,

CDC-ANNUAL STOCKHOLDERS MEETING - 05/07/80

R. M. Price

Page - 2 -

INVOLVED IN.... THE DEVELOPMENT OF LASER TECHNOLOGY TO DETERMINE HOW IT MIGHT APPLY TO FUTURE PRODUCTS FOR CONTROL DATA. AS LASERS HAVE BECOME MORE COMPACT, LESS EXPENSIVE AND MORE SUITED TO OUR NEEDS, WE HAVE IDENTIFIED TWO PRODUCT AREAS WHERE THIS TECHNOLOGY HAS PARTICULAR PROMISE.

THE FIRST RELATES TO THE NEED FOR LARGE AMOUNTS OF DATA STORAGE. OVER THE YEARS, AS COMPUTERS BECOME FASTER, CHEAPER AND SMALLER, THERE IS A CONCOMITANT NEED FOR FASTER, CHEAPER AND SMALLER DEVICES TO STORE THE INFORMATION WHICH FEEDS INTO THEM. THIS NEED IS WHAT HAS SPAWNED CONTROL DATA'S BILLION-DOLLAR PERIPHERAL PRODUCT BUSINESS BASED ON MAGNETIC RECORDING TECHNOLOGY. NOW LASERS ARE PROVIDING A NEW, PRACTICAL MEANS OF RECORDING INFORMATION -- IT IS REFERRED TO AS OPTICAL RECORDING.

OPTICAL RECORDING, USING LASERS, IS THE BASIS FOR SOME OF THE SO-CALLED VIDEO-DISKS NOW COMING ONTO THE MARKET AND WHICH SOME OF YOU MAY ALREADY BE USING IN YOUR HOMES.

ONE OF CONTROL DATA'S DEVELOPMENT LABORATORIES IS DEDICATED TO THE TASK OF APPLYING THIS TECHNOLOGY TO THE MORE COMPLEX PROBLEM OF COMPUTER DATA STORAGE, AND A VARIETY OF NEW APPLICATIONS ARE EMERGING. WE ARE ABLE TO STORE UP TO FIVE BILLION -- I REPEAT UP TO FIVE BILLION -- CHARACTERS OF INFORMATION ON A SINGLE TWELVE-INCH DISK.

CDC-ANNUAL STOCKHOLDERS MEETING - 05/07/80

R. M. Price

Page - 3 -

THE STORAGE CAPABILITY INHERENT IN THIS TECHNOLOGY WILL MAKE POSSIBLE NEW AND ADVANCED WAYS TO SOLVE PROBLEMS, PARTICULARLY IN EDUCATION, WEATHER AND MEDICINE -- INDUSTRIES IN WHICH WE ARE VITALLY INTERESTED. FOR EXAMPLE, ENORMOUS POTENTIAL EXISTS FOR THE STORAGE, RETRIEVAL AND DELIVERY OF COURSEWARE FOR OUR PLATO COMPUTER-BASED EDUCATION SYSTEM. AND IMAGINE THE POSSIBILITIES IN AREAS LIKE WEATHER FORECASTING WITH ITS DEMAND FOR THE FASTEST POSSIBLE COMPUTERS USING VAST AMOUNTS OF DATA. ALSO, USING THIS TECHNOLOGY, HUNDREDS OF THOUSANDS OF MEDICAL X-RAYS CAN BE STORED AND AUTOMATICALLY RETRIEVED TO BE ANALYZED IN GREAT DETAIL FOR CLINICAL USE.

NON-IMPACT PRINTING

A SECOND AREA IN WHICH INNOVATION WITH THE USE OF LASERS OFFERS EXCELLENT NEAR-TERM POTENTIAL FOR US IS IN COMPUTER OUTPUT. JUST AS COMPUTERS HAVE AN EVER INCREASING NEED FOR MORE DATA STORAGE, THEY HAVE AN EVER INCREASING NEED FOR SPEED -- AND VARIETY -- IN GETTING INFORMATION BACK TO THE USER. THE MAINSTAY OF THIS PROCESS IS STILL, FOR THE MOST PART, MECHANICAL PRINTERS WHICH, RELATIVE TO THE ELECTRONIC DEVICES THEY SERVE, ARE BOTH COSTLY AND SLOW. NEW LASERS PROVIDE A BASIS FOR NON-IMPACT PRINTERS -- AS THEY ARE CALLED -- WHICH HAVE THE CAPABILITY OF PRINTING AT VERY HIGH SPEEDS AND OPERATE QUIETLY....IF YOU'VE EVER BEEN IN A BUSY COMPUTER ROOM WHEN DOZENS OF PRINTERS ARE CLATTERING AWAY, YOU KNOW WHAT THAT CAN MEAN.

CDC-ANNUAL STOCKHOLDERS MEETING - 05/07/80

R. M. Price

Page - 4 -

IN ANY EVENT, THERE IS A VERY LARGE MARKET THAT IS CONTINUING TO DEVELOP FOR NON-IMPACT PRINTERS, VARYING IN SPEEDS FROM SLOW SERIAL PRINTERS, WITH TEN CHARACTERS PER SECOND....TO MEDIUM-SPEED INK JET PRINTERS....TO HIGH SPEED PRINTERS THAT INVOLVE THE USE OF LASERS AND WHICH PRINT AT RATES IN EXCESS OF 20,000 CHARACTERS PER MINUTE.

WE ARE ACTIVELY ENGAGED -- THROUGH OUR JOINT-VENTURE, COMPUTER PERIPHERALS, INC. -- IN SEVERAL PROGRAMS WHICH WILL LEAD TO A FULL LINE OF NON-IMPACT PRINTERS. OVER ONE-HALF OF OUR R&D EXPENDITURES FOR PRINTER PRODUCTS THIS YEAR IS BEING SPENT ON NON-IMPACT TECHNOLOGIES.

THE TWO EXAMPLES I HAVE JUST DISCUSSED -- PRINTERS AND OPTICAL RECORDING -- BOTH HAVE TO DO WITH DEVELOPING NEW "HARDWARE" PRODUCTS -- IN THIS INSTANCE RECORDING DEVICES OF ONE FORM OR ANOTHER AND, INDEED, PEOPLE USUALLY THINK OF THE RESULTS OF TECHNOLOGICAL INNOVATIONS IN TERMS OF PHYSICAL, TANGIBLE DEVICES -- "THINGS" OF ONE SORT OR ANOTHER. BUT IN TRUTH THE MAJORITY OF CONTROL DATA'S TECHNICAL INNOVATION DOLLARS ARE SPENT IN THE REALM OF SOFTWARE -- PROCEDURES....PROCESSES.... PROGRAMS -- WHICH SPELL OUT THE CREATIVE USE OF THESE HARDWARE TOOLS TO HELP SOLVE THE EVER MORE COMPLEX AND IMPORTANT NEEDS IN OUR WORLD. THIS MORNING I'LL MENTION THREE OF THESE SOFTWARE ITEMS.

CDC-ANNUAL STOCKHOLDERS MEETING - 05/07/80
R. M. Price
Page - 5 -

CAD

THE FIRST IS COMPUTER-AIDED DESIGN. IT ADDRESSES ONE OF THE MAIN PROBLEMS WE -- AS A NATION -- FACE TODAY. THE NEED FOR INCREASED PRODUCTIVITY. THE MAJOR CHALLENGE FACING MANUFACTURERS IS TO PRODUCE HIGHER QUALITY PRODUCTS IN LESS TIME AT LOWER COSTS. AND ENGINEERING DESIGN IS AN EVER MORE IMPORTANT ELEMENT OF THAT COST. COMPUTER-AIDED ENGINEERING DESIGN ALLOWS THE COMPUTER TO DO A WHOLE SERIES OF DESIGN AND DRAFTING TASKS, TEDIOUS WORK SUCH AS CALCULATING, MANAGING AND ORGANIZING INFORMATION AND REPETITIOUS FUNCTIONS SUCH AS STORING AND REPRODUCING DRAWINGS. WITH CAD, THE ENGINEER CAN SIT AT A VIDEO DISPLAY SCREEN, DRAW ON THIS POWER, AND DO BETTER WHAT HE IS PAID TO DO -- CREATE CONCEPTS, DEVELOP DESIGNS AND SOLVE PROBLEMS. THE NET RESULT IS GREATER PRODUCTIVITY -- SPEEDING THE EVOLUTION OF AN IDEA TO A PROFITABLE PRODUCT IN THE MARKET.

INFORMATION ANALYSIS

~~A SECOND PRODUCT DEALS WITH ANOTHER MAJOR PROBLEM -- THE ELIMINATION OF DESIGN ERRORS IN THE FORMULATION OF INFORMATION DATA BASES USED BY GOVERNMENT AND INDUSTRY....ERRORS WHICH ULTIMATELY COME BACK AS GRIEF FOR YOU AND ME. THIS TECHNOLOGY BREAKTHROUGH IS CALLED CALLED INFORMATION ANALYSIS SERVICES OR~~
~~IAS.~~

CDC-ANNUAL STOCKHOLDERS MEETING - 05/07/80

R. M. Price

Page - 6 -

IAS WAS CONCEIVED BY OUR PEOPLE IN EUROPE AND, WITH ITS METHODOLOGY AND INFORMATION MANAGEMENT PRODUCT, IS AN ADVANCED PRODUCTIVITY TOOL WHICH CAN SAVE COUNTLESS DOLLARS, ~~IN THE PROCESS OF APPLYING COMPUTERS TO THE MANY PROBLEMS OF GOVERNMENT AND INDUSTRY.~~

THE IAS METHODOLOGY SOUNDS ALMOST MUNDANE. CENTRAL TO THE CONCEPT IS THE HEAVY EMPHASIS ON USER PARTICIPATION IN PROBLEM DEFINITION -- INDEPENDENT OF HARDWARE. ERROR DETECTION IN THE DESIGN AND REQUIREMENTS DEFINITION STAGE RESULTS IN LOWER DESIGN, DEVELOPMENT, AND MAINTENANCE COSTS. IN OTHER WORDS....IMPROVEMENT IN PRODUCTIVITY. ONCE THE DEFINITION OF DATA IS CORRECT, THE INFORMATION MANAGEMENT PRODUCT OF IAS IS USED TO PROTOTYPE USER INFORMATION. HOW THIS PROCESS OF USER PARTICIPATION, SIMPLER AND MORE ERROR FREE DESIGN, PROTOTYPING AND SO ON WITH REGARD TO INFORMATION DATA BASES IS WHAT LOTS OF COMPUTER FOLKS LIKE TO TALK ABOUT, BUT IT'S WHAT THE TECHNOLOGY OF IAS ACTUALLY MAKES POSSIBLE.

ENERGY AUDIT

A THIRD, AND VERY DOWN TO EARTH EXAMPLE, DEALS WITH THE NEED FOR ENERGY CONSERVATION. THIS PRODUCT PROVIDES A RESIDENTIAL ENERGY AUDIT. WE ARE CURRENTLY TEST MARKETING IT IN CHICAGO. UNDER A HEADLINE "DOES YOUR HOME GET GOOD MILEAGE?" WE ARE OFFERING CONSUMERS, VIA FULL-PAGE ADVERTISEMENTS, AN OPPORTUNITY TO FILL OUT A QUESTIONNAIRE.

CDC-ANNUAL STOCKHOLDERS MEETING - 05/07/80

R. M. Price

Page - 7 -

FROM IT, CYBERNET WILL PRODUCE -- FOR \$10 -- A COMPUTERIZED ENERGY ANALYSIS OF THEIR HOME. IT'S A MULTIPAGE REPORT THAT MAKES SPECIFIC CONSERVATION RECOMMENDATIONS, MANY OF WHICH THE HOMEOWNERS CAN DO THEMSELVES. IT ESTIMATES THEIR COSTS, THEIR TAX BENEFITS AND THEIR SHORT-TERM AND LONG-TERM SAVINGS.

BEHIND THIS SIMPLE APPLICATION LIE MANY TECHNOLOGIES IN COMPUTING SUCH AS THOSE I HAVE MENTIONED EARLIER -- FROM INFORMATION STORAGE DEVICES TO INFORMATION MANAGEMENT PROCESSES. PUTTING THEM ALTOGETHER IN PRACTICAL SERVICES -- FROM SIMPLE ONES FOR YOU AND ME TO ESOTERIC ONES FOR INDUSTRY AND SCIENCE IS THE EVERYDAY WORK OF CONTROL DATA.

AS YOU LEAVE THIS AUDITORIUM, YOU WILL BE GIVEN ONE OF THE ENERGY AUDIT QUESTIONAIRES PLUS A TICKET. IF YOU COMPLETE THE QUESTIONNAIRE AND SEND IT TO US, WE'LL SEND YOU A FREE ANALYSIS REPORT.

1979 PERFORMANCE

LET ME CLOSE WITH A BRIEF ANALYSIS OF OUR PERFORMANCE LAST YEAR AND A LOOK AT THE FUTURE. IN 1979 WE HAD THE GREATEST SINGLE YEAR OF ABSOLUTE GROWTH IN BOTH REVENUES AND PROFITS IN THE HISTORY OF THE COMPUTER BUSINESS.

REVENUES FROM OUR PART OF THE COMPANY GREW BY \$405 MILLION -- 22 PERCENT -- TO \$2.3 BILLION. AND NET EARNINGS -- THE BOTTOM

CDC-ANNUAL STOCKHOLDERS MEETING - 05/07/80

R. M. Price

Page - 8 -

LINE -- WERE UP ALMOST \$30 MILLION TO \$70.8 MILLION. PERHAPS EVEN MORE IMPORTANT, ALL ELEMENTS OF THE COMPUTER BUSINESS CONTRIBUTED TO THIS GROWTH:

PERIPHERAL PRODUCTS WHICH IS 40 PERCENT OF THE COMPUTER BUSINESS -- HAD ANOTHER EXCELLENT YEAR WITH REVENUES IN THIS AREA INCREASING 35.6 PERCENT.

COMPUTER SERVICES WHICH IS 39 PERCENT -- CONTINUED ITS STEADY DEVELOPMENT AS THE EMERGING GROWTH VEHICLE OF THE COMPANY; AND

COMPUTER SYSTEMS -- THE FINAL 21 PERCENT -- ALSO MADE EXCELLENT PROFIT AND REVENUE CONTRIBUTIONS.

IN THE FIRST QUARTER OF 1980, REVENUES FROM THE COMPUTER BUSINESS INCREASED 28 PERCENT TO \$629 MILLION, AND EARNINGS TOTALED \$20.5 MILLION, COMPARED WITH \$11.8 MILLION IN THE FIRST QUARTER OF 1979.

THE FUTURE

AND NOW A FEW WORDS ABOUT THE FUTURE. IT IS PREDICTED THAT 50 YEARS FROM NOW, 80 TO 90 PERCENT OF THE ENTIRE WORKFORCE WILL BE IN JOBS THAT INVOLVE THE ACCUMULATION AND PROCESSING OF INFORMATION. THIS PREDICTION MAY OR MAY NOT BE TOTALLY

CDC-ANNUAL STOCKHOLDERS MEETING - 05/07/80

R. M. Price

Page - 9 -

ACCURATE, BUT WHAT IS TRUE IS THAT THERE IS AN OVERWHELMING
NEED FOR KNOWLEDGE IN OUR WORLD. NO COMPANY IS BETTER
POSITIONED THAN CONTROL DATA TO HELP MEET THIS NEED. OUR WHOLE
STRATEGIC PLAN IS AIMED IN THIS DIRECTION. AND WE ARE UNIQUELY
THE KNOWLEDGE SERVICES COMPANY WHOSE PRINCIPAL STRATEGY IS THAT
OF ADDRESSING MAJOR UNMET SOCIETAL NEEDS AS BUSINESS
OPPORTUNITIES.

CERTAINLY THE CHALLENGES AHEAD ARE MANY -- AND THEY ARE VERY
LARGE. BUT WE LOOK FORWARD TO MEETING THOSE CHALLENGES AND
CONTINUING THE PROGRESS WE'VE MADE IN RECENT YEARS. AND THE
KEYSTONE OF THAT PROGRESS IS TECHNOLOGICAL INNOVATION -- THE
RIGHT KNOWLEDGE TO THE RIGHT PROBLEMS AT THE RIGHT TIME.

AND, NOW I'D LIKE TO INTRODUCE PAUL MILLER, CHAIRMAN AND CHIEF
EXECUTIVE OF COMMERCIAL CREDIT COMPANY.