SLIDE 1 (NO COMMENT MADE. THIS SLIDE ON SCREEN SERVES THE PURPOSE OF TURNING AUDIENCE ATTENTION TO THE NEW SUBJECT MATTER. SLIDE IS REMOVED WHEN RMP BEGINS TO SPEAK).

SLIDE 1 (Cont) MY PRESENTATION IS SANDWICHED BETWEEN THE BASIC VLSI/SEMICONDUCTOR CONCERN .... WHICH BILL HOWARD HAS COMMENTED ON ... AND THE RELATIONSHIP OF THOSE TECHNOLOGIES TO ADVANCED COMPUTING CONCEPTS WHICH MIKE DERTOUZOS AND GORDON BELL WILL DISCUSS AT LUNCH.

THE SOLUTION WE PROPOSE TODAY IS CONCEIVED TO ADDRESS THE PROBLEMS OF BOTH OF THESE INDUSTRIES.... FOR THERE CAN BE NO ADVANCED COMPUTER ARCHITECTURE WITHOUT A CORRESPONDINGLY ADVANCED MICROELECTRONICS CAPABILITY.
AT THE RISK OF BELABORING THAT POINT A BIT FOR THOSE OF YOU WHO SAW PRESS REPORTS OF MY COMMENTS FROM THE CBEMA MEETING LAST APRIL, TODAY'S PROPOSAL REPRESENTS A BROADER APPROACH, THAT IS, THE CBEMA SPEECH CONCENTRATED ONLY ON MICROELECTRONICS . . . .

WHILE OUR DISCUSSION TODAY PRESENTS THE BROADER VIEW WHICH IS NECESSARY TO MEET THE NEEDS BILL NORRIS DESCRIBED EARLIER.

SLIDE 3

THE CHART, HERE, INDICATES THE OUTLINE I WILL FOLLOW IN PRESENTING THE STRAWHORSE PROPOSAL TO ACHIEVE NEEDED COOPERATION. BUT THE PROPOSAL ITSELF CAN ONLY BE MEANINGFUL IF IT IS ALWAYS KEPT IN THE CONTEXT OF A VERY SPECIFIC QUESTION: WHAT IS THE GREATEST NEED -- AT LEAST THE GREATEST TECHNOLOGICAL NEED -- FACING EACH OF OUR INDIVIDUAL COMPANIES. I SAY "NEED" -- BUT YOU CAN JUST AS EASILY SUBSTITUTE "THAT" OR "OPPORTUNITY" AND ARRIVE AT THE SAME POINT. THAT IS JUST ANOTHER WAY OF SAYING THAT "ENLIGHTENED SELF-INTEREST" HAS GOT TO BE THE BY-WORD OF ANY SUCCESSFUL COOPERATION. LORD KNOWS, THERE IS PLENTY OF TERRITORY IN WHICH WE CAN SEEK COMMON TECHNOLOGICAL NEEDS IF WE PUT OUR MINDS TO IT. IN THIS PRESENTATION YOU WILL SEE SOME THOUGHTS IN THAT REGARD. BUT, AGAIN, THE IDEA IS TO STIMULATE YOUR THOUGHTS.
REGARDING QUESTIONS, WE HAVE ALLOCATED SEVERAL HOURS LATER ON FOR GROUP DISCUSSION OF THE MERITS OF THE PROPOSAL .... QUESTIONS OF CLARIFICATION CAN BE ANSWERED AS WE GO ALONG, HOWEVER.

O.K., ENOUGH FOR THE PRELIMINARIES ....

SLIDE 4

THE BASIC CONCEPT OF THE PROPOSAL IS TO FIND SOME WAY TO GET A NUMBER OF COMPANIES WORKING TOGETHER THAT WILL GIVE US EACH MORE BANG FOR THE BUCK AND DO THIS IN SUCH A WAY AS TO ABSOLUTELY MAINTAIN INDEPENDENCE IN PRODUCT OFFERINGS AND MARKET APPROACH.

WHAT THIS COMES DOWN TO IS EXPLORING SOMETHING WE COULD NOT OR WOULD NOT OTHERWISE EXPLORE -- IN A REASONABLE TIME FRAME -- OR INVESTING TOGETHER TO SATISFY A COMMON NEED. SOME EXAMPLES ARE SHOWN THERE ON THE SCREEN.

SLIDE 5

UNDERLYING THIS WHOLE APPROACH IS A VALUE-ADDED CONCEPT WHICH CAN BE DEPICTED AS SHOWN HERE. EACH COMPANY PURSUES ITS INDEPENDENTLY CHOSEN PRODUCT, MARKET AND BUSINESS ENDEAVORS BUT GAINS FROM THE COMMONLY SHARED TECHNOLOGY.
AND THE LEVERAGE THAT RESULTS FROM OUR COMMON INVESTMENT IS TREMENDOUS .... ON THE LEFT THE RESULTS OF INVESTING ALONE IN A SPECIFIC R&D AREA .... AND ON THE RIGHT, THE FRUITS OF COLLECTIVE INVESTMENT AND LEVERAGE .... CRITICAL MASS, IF YOU WILL ....

THE PROPOSAL WHICH FOLLOWS IS BASED UPON THIS CONCEPT ..... 

.... AND WE CALL THE COOPERATIVE ENDEAVOR "MCE" .... FOR MICROELECTRONICS AND COMPUTER TECHNOLOGY ENTERPRISES. WE WILL LOOK AT MCE'S MISSION, PROPOSED ACTIVITIES AND AN IMPLEMENTATION PLAN.

THE PURPOSE OF MCE IS TO PRESERVE AND ENHANCE THE U.S. PREEMINENCE AND PREDOMINANCE IN THE MICROELECTRONICS AND COMPUTER INDUSTRIES ... AND TO DO SO BY ENHANCING THE EXISTING COMPETITIVE STRUCTURES OF THE MICROELECTRONICS AND COMPUTER INDUSTRIES.
THE TECHNOLOGY REQUIRED TO ADEQUATELY RESPOND TO EXTERNAL THREATS INEXTRICABLY RELATES THESE TWO INDUSTRIES.... WE CANNOT GO IT ALONE AS INDIVIDUALS OR INDUSTRIES, AND MCE REPRESENTS THE VEHICLE FOR OUR COLLECTIVE INVESTMENT TOWARD PROVIDING A LONG-TERM BENEFIT.

THE THREAT TO THE MICROELECTRONICS INDUSTRY HAS BEEN VISIBLE FOR A NUMBER OF YEARS WHILE THE THREAT TO THE COMPUTER INDUSTRY IS ONLY NOW BECOMING DISCERNABLE.

IN ANY EVENT, WE MUST CONSCIOUSLY SEEK AN ALTERNATIVE TO SEEING TWO OR THREE VERY LARGE VERTICALLY INTEGRATED COMPANIES EVOLVE .... NONE OF WHICH MAY BE OF U.S. ORIGIN .... AND WHICH WOULD OTHERWISE BE THE NATURAL RESULT OF THE INDUSTRY AS IT MATURES.

THE AUTO INDUSTRY IS BUT ONE EXAMPLE IN THAT REGARD. AND THAT INDUSTRY, BY THE WAY, ILLUSTRATES VIABLY ANOTHER POINT AND THAT IS THAT SIZE ALONE IS NOT AN ADEQUATE SAFEGUARD.  (Slide Off)
THE RANGE OF POSSIBLE ACTIVITIES IS LARGE .... AND IN ORDER TO GET STARTED THE "DISCUSSION DRAFT" PROSPECTUS WHICH WE MAILED TO YOU LISTED A WIDE VARIETY OF POSSIBLE ACTIVITIES ...

THE INTENT, HOWEVER, IS TO FIND A FEW THINGS AMONG THOSE OF GREATEST COMMON NEED AND INTEREST AND GET STARTED WITH THOSE. SO THIS PROPOSAL IS NOT INTENDED TO SOLVE ALL PROBLEMS -- JUST POINT THE WAY BY CHOOSING A FEW THINGS AND DOING THEM WELL.

I WILL COVER THE PROPOSED ACTIVITIES IN MORE DETAIL IN JUST A MINUTE ....

I WOULD NOW LIKE TO BRIEFLY ADDRESS PARTICIPATION ....

SLIDE 9

THIS TRANSPARENCY SPEAKS FAIRLY WELL FOR ITSELF. AS A GENERAL PRINCIPLE, MEMBERSHIP IN MCE IS OPEN TO ANY COMPANY, SUBJECT, OF COURSE, TO SUCH OPERATIONAL OR LEGAL RESTRANITS AS MAY EVOLVE. SPECIFICALLY AS TO FOREIGN PARTICIPATION, HOWEVER, AN ADDITIONAL CONSIDERATION COMES INTO PLAY: THE SUCCESS OF MCE OBVIOUSLY DEPENDS HEAVILY ON THE FREE TRANSFERABILITY OF LEADING-EDGE TECHNOLOGY. VARIOUS
GOVERNMENTS, INCLUDING OUR OWN, HAVE ERECTED SIGNIFICANT BARRIERS TO SUCH TRANSFER — EVEN WHERE THE TECHNOLOGY IS SIMPLY EMBODIED IN A PRODUCT TO BE TRANSFERRED. GIVEN SUCH AN ATMOSPHERE, IT WOULD BE BOTH COUNTERPRODUCTIVE AND UNFAIR TO HAVE WIDE-OPEN FOREIGN PARTICIPATION.... UNFAIR TO DOMESTIC MCE PARTICIPANTS BECAUSE THE EXISTENCE OF SUCH BARRIERS WOULD SERIOUSLY RESTRICT THEIR FREEDOM IN THE SELECTION OF TECHNOLOGICAL CHALLENGES TO EXPLORE. AND FINALLY, IT WOULD BE UNFAIR TO FOREIGN COMPANIES BECAUSE THEY COULD MAKE SIGNIFICANT INVESTMENTS IN THE COOPERATION AND BE PROHIBITED FROM SHARING IN THE RESULTS.

SLIDE 11 (READ FROM THE SLIDE)

NOW LET'S GET INTO THE PROPOSED ACTIVITIES OF MCE. FIRST, THE BASIC CATEGORIES AND DEFINITIONS.

YOU WILL NOTICE THAT THERE IS NO PRODUCT DEVELOPMENT AND NO MARKETING. SERVICES, OF COURSE, COULD BE PROVIDED TO OUTSIDERS AS WELL AS SHAREHOLDERS. I WILL COMMENT IN MORE DETAIL ABOUT TOOLS AND SERVICES LATER.
SLIDE 12  TO DEFINE THE TYPE OF ACTIVITY MORE
PRECISELY...(SPEAK FROM SLIDE)

SLIDE 13  (READ FROM SLIDE)

WE SUPPORT THE SRC, AND PROPOSE THAT SOME BASIC
RESEARCH WORK BE DONE IN COORDINATION WITH SRC
ACTIVITIES.

SLIDE 14  AS FAR AS APPLIED RESEARCH IS CONCERNED, THERE ARE
MANY OPTIONS. IN VARIOUS DISCUSSIONS AND TRADE
JOURNALS, THE APPLIED R&D AREAS MOST FREQUENTLY
MENTIONED HAVE BEEN .....(READ FROM SLIDE)

AS YOU PROBABLY AGREE, THESE TECHNOLOGY AREAS ARE
BOTH COSTLY AND EXTREMELY IMPORTANT TO OUR FUTURES,
SO WE DON'T LACK FOR OPPORTUNITIES.

SLIDE 15  THE ACTIVITIES CAN BE ARRAYED AS SHOWN AND YOU
SHOULD AGAIN NOTE THAT THE MCE ROLE ENDS AT THE
APPLIED DEVELOPMENT STAGE WHILE SHAREHOLDER ACTIVITY
COVERS THE ENTIRE SPECTRUM.
I am showing you this slide once again in order to emphasize that individual shareholders will maintain their absolutely independent value-added contributions to develop, produce, and market their individual products.

I would like to conclude the "activities" discussion with a few brief comments concerning services.

The tools are developed to meet MCE internal needs and then form the basis for external services.

Educational services would comprise the development of course materials for use by MCE shareholders and others as well as training itself. Our industry has a massive training and retraining need which is being ill-met by existing institutions, so it is proposed that these services be offered to shareholder and non-shareholder companies in order to fill that need. The shareholders, therefore, would recoup the course development investment.
THE APPLICATION SERVICES DESCRIBED HERE WOULD BE A SOURCE OF REVENUE AND PROFIT TO MCE. ITS FOCUS WOULD BE ON HELPING FIRST-TIME USERS OF MICROELECTRONICS AND COMPUTER TECHNOLOGY, (PARTICULARLY SMALL BUSINESSES) INCORPORATE THAT TECHNOLOGY INTO THEIR NEW PRODUCTS.

NOW LET'S LOOK AT THE "HOW" OF MCE.

I'D LIKE TO EMPHASIZE THAT CHOOSING A FEW PROJECTS IS THE ESSENTIAL THOUGHT THERE AND WILL BE SELECTED BY THE INITIAL PARTICIPANTS.

I'D SUGGEST THAT WE BEGIN SIMILAR TO WHAT'S SHOWN HERE ... GET A SMALL NUCLEUS AND GET STARTED ...

(DISCUSS SLIDE)

PROBABLY, AFTER THREE OR FOUR YEARS, MCE WOULD EVOLVE INTO AN ORGANIZATION WHICH LOOKS LIKE THIS. 

(The objective of course, would be to stay lean and effective and avoid unnecessary superstructures. (Read prospectus for your guide)
SLIDE 23  AFTER SELECTING A CEO, ADDITIONS TO THE MANAGEMENT STAFF CAN BE MADE AS ACTIVITY PROGRESSES. STAFFING WILL BE BOTH PERMANENT (FOR EXAMPLE THE CEO) AND ON LOAN (FOR EXAMPLE PROJECT "X").

DO YOU KNOW WHAT THE THIRD BULLET IS DOWN THERE? I CALL IT THE "BRICK WALL" OF COOPERATION .... MAKING UP YOUR MIND THAT VALUABLE PEOPLE CAN BE SPARED FOR THESE COOPERATIVE PROJECTS.

NATURALLY, MCE WILL NEED TO RECRUIT FROM BOTH INSIDE ITS SHAREHOLDERS AND FROM OUTSIDE LIKE ANY OTHER COMPANY.
SLIDE 23A  YOU WILL NOTE THAT IN THE R&D DIVISION WE SHOW

PROTOTYPE SUPPORT DEPARTMENT. THIS DEPARTMENT

OPERATES A FOUNDRY SUPPORTING WHATEVER PROCESSES ARE

NEEDED. THE FOUNDRY IS USED FOR:

- SUPPORTING BASIC AND APPLIED R&D PROJECTS

- SATISFYING SHAREHOLDER DESIGN NEEDS WITH ANY
  EXCESS AVAILABLE CAPACITY POTENTIALLY AVAILABLE
  EXTERNALLY REGARDING THE DESIGN TOOLS
  DEPARTMENT. THIS GROUP PROCURES OR DEVELOPS THE
  NECESSARY DESIGN AIDS TO SUPPORT MCE ACTIVITY
  SUCH AS:

- CAD/CAM NEEDED TO CONDUCT MCE COMMON PROJECTS

- SPECIFIC CAD/CAM PROJECTS FOR SHAREHOLDER-UNIQUE
  PROJECTS

- SOFTWARE PRODUCTIVITY TOOLS

NOTE THAT MANY OF THE TOOLS DEVELOPED BY THE DESIGN
TOOLS DEPARTMENT WILL BE INTEGRATED INTO THE CAD/CAM
SYSTEM USED BY THE MCE DESIGN SERVICES GROUP.
THIS IS HOW WE ENVISION THE CONTROL METHOD FOR R&D PROJECTS TO BE PERFORMED (SPEAK FROM SLIDE)

(SPEAK FROM SLIDE)

(SPEAK FROM SLIDE)

LET ME SPEAK FOR A MOMENT ABOUT DESIGN TOOLS AND SERVICES .... I WOULD EXPECT THIS AREA TO BE BUILT UP GRADUALLY BUT STEADILY SINCE THERE IS A SUBSTANTIAL DEMAND FOR THIS IN INDUSTRY. INITIALLY, WE WOULD PROPOSE THAT IT BE LIGHTLY STAFFED AND THEN EVENTUALLY BE CAPABLE OF PROVIDING USER ACCESS TO SEMI-CUSTOM GATE ARRAYS AND STANDARD CELLS .... AND LATER USER ACCESS TO CUSTOM SYSTEMS ON SILICON, AND HIERARCHICAL STRUCTURED DESIGNS.

DELETED

DELETED
SLIDE 31  NOW .... JUST A FEW WORDS ABOUT BUSINESS CONTROLS:
(SPEAK FROM SLIDE)

SLIDE 32  REGARDING FUNDING, I HAVE THE FOLLOWING COMMENTS:
(SPEAK FROM SLIDE)

SLIDE 33  NOW WITH REGARD TO TAXES, LARRY PERLMAN WILL COMMENT
IN A FEW MINUTES. IT APPEARS THAT THERE WILL BE NO
DIFFICULTY ACHIEVING TAX BENEFITS, I.E., WE WILL GET
THE SAME BENEFITS IN MCE THAT WE GET NOW WITHIN OUR
INDIVIDUAL COMPANIES.

SLIDE 34  DELETED

SLIDE 35  DELETED

SLIDE 36  SOME OF THE MOST IMPORTANT BENEFITS ARE SHOWN HERE
...LET'S GO OVER THEM QUICKLY. (READ BULLETS FROM
SLIDE)

THE JAPANESE COOPERATE WELL BECAUSE THEY KNOW
EXACTLY WHAT THEY WANT -- AND IF THEY CAN GET SOME
PART OF THAT BY COOPERATION, THEY DO SO WITHOUT
HESITATION.
THUS, COOPERATION IS ONLY AS GOOD AS THE INTENSITY
OF OUR CORPORATE SELF-KNOWLEDGE .... AND IN FACT OUR
SELF INTERESTS.

WE SHOULD ALL REALIZE THAT THIS ENDEAVOR REQUIRES A
LONG-TERM INVESTMENT APPROACH AND PERSEVERANCE. WE
SHOULD ALSO REALIZE THAT TECHNOLOGICAL COOPERATION
IS NOT EASY ..... AND REQUIRES EXTRAORDINARY
MEDIATION AND TOLERANCE AS WE LEARN TO WORK TOGETHER.

SLIDE 37 DELETED

SLIDE 38 DELETED

SLIDE 39 THE STEPS TO BE TAKEN TO IMPLEMENT MCE ARE STRAIGHT
FORWARD:

A SENIOR EXECUTIVE WILL BE APPOINTED TO REPRESENT
EACH COMPANY ON A STEERING COMMITTEE WHOSE PURPOSE
IT IS TO:

○ SELECT A CHAIRMAN

○ APPOINT TASK GROUPS FROM AMONG THEIR MEMBERSHIP

○ SELECT OUTSIDE ASSISTANCE AS NECESSARY
WE WOULD ALSO LIKE TO SEE YOU APPOINT A SECOND
SENIOR EXECUTIVE AS AN ALTERNATE AND BECAUSE THERE
IS SO MUCH WORK TO DO.

THE INITIAL START-UP TASK IS FOR THE STEERING
COMMITTEE TO NOMINATE A CEO, CHOOSE THE INITIAL
PROJECTS, PLAN THE ESSENTIALS AND PREPARE TO
INCORPORATE MCE.

THE IDEA IS THAT ALL THIS WOULD MOVE QUICKLY SO THAT
BY THE END OF THE SUMMER WE ARE READY TO
INCORPORATE.

FINALLY, I'D LIKE TO CLOSE BY SAYING TO YOU THAT WE
ARE CATCHING A WAVE OF OPPORTUNITY WHICH MAY NEVER
OCUR AGAIN .... WASHINGTON IS SAYING .... "YOU
BUSINESSMEN HAVE GOT TO DO IT YOURSELVES..." SO IT
IS ESSENTIAL THAT WE DO SOMETHING ABOUT THIS ....AND
DO IT QUICKLY

WITH THIS STRAWHORSE PROPOSAL ON THE TABLE, I WOULD
LIKE TO INTRODUCE LARRY PERLMAN WHO WILL BRIEFLY
DISCUSS LEGAL AND TAX CONSIDERATIONS.
PROCEEDINGS AND REFERENCES

ORLANDO MEETING ON
MICROELECTRONICS & COMPUTER TECHNOLOGY ENTERPRISES

FEBRUARY 19, 1982

CONTROL DATA CORPORATION
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. INTRODUCTORY REMARKS
  W. C. NORRIS

. STRAWHORSE PROPOSAL
  R. M. PRICE

. LEGAL CONSIDERATIONS
  L. PERLMAN & LEGAL STAFF

. BIBLIOGRAPHY
STRAWHORSE PROPOSAL
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INTRODUCTION
  . BASIC CONCEPT OF MCE
  . MISSION STATEMENT
  . PARTICIPATION

ACTIVITIES
  . DEFINITIONS
  . R&D
  . SERVICES

APPROACH
  . GETTING STARTED
  . ORGANIZATION
  . FUNDING
  . PEOPLE
  . TAX/LEGAL CONSIDERATIONS

SUMMARY
  . WHAT'S IN IT FOR US
  . THE NEXT STEPS
BASIC CONCEPT

FIND SOME WAY TO GET A NUMBER OF ENTREPRENEURIAL COMPANIES WORKING TOGETHER THAT WILL ......

. GIVE EACH OF US MORE BANG FOR THE R&D BUCK ......

. EXPLORE SOMETHING WE COULD NOT OR WOULD NOT OTHERWISE EXPLORE, IN A REASONABLE TIME FRAME ......

. NON-SILICON TECHNOLOGIES
. DATA-FLOW ARCHITECTURE
. PACKAGING TECHNOLOGIES

. INVEST TOGETHER TO SATISFY A COMMON NEED, FOR EXAMPLE:

. HIGHER QUALITY, MORE ACCESSIBLE BASE MATERIALS
. COMPUTER-AIDED DESIGN TOOLS

. MAINTAIN INDEPENDENCE IN PRODUCT OFFERINGS AND MARKET APPROACH
Microelectronics
And
Computer Technology
Enterprises
—MCE—
MISSION

1. PRESERVE AND ENHANCE U.S. PREDOMINANCE AND PREEMINENCE IN MICROELECTRONICS AND COMPUTING

2. COOPERATE AT THE BASE TECHNOLOGY LEVEL TO PROVIDE LONG TERM BENEFIT TO THE INDUSTRY AND NATION

3. RECOGNIZE THE IMMEDIATE THREAT IN MICROELECTRONICS AND THE LONGER TERM THREAT IN COMPUTING

4. AVOID ANTICOMPETITIVE EFFECTS OF EVENTUAL CONCENTRATION OF BOTH INDUSTRIES INTO A VERY FEW LARGE VERTICALLY INTEGRATED ENTITIES
. PARTICIPATION

. GUIDING PRINCIPLE
- GENERALLY OPEN TO ANYONE, BUT SUBJECT TO ANY OPERATIONAL OR LEGAL RESTRRAINTS THAT MAY EVOLVE

. ANTICIPATED PARTICIPANTS
  - U.S. BASED PRIVATE SECTOR FIRMS
    - PRODUCERS OF MICROELECTRONIC COMPONENTS, PROCESS EQUIPMENT OR INSTRUMENTATION
  - PRODUCERS OF COMPUTERS OR COMPONENTS
  - USERS OF MICROELECTRONIC COMPONENTS OR DEVICES

. PARTICIPATION REQUIRES COMMITMENT
  - ACTIVELY PARTICIPATE IN MCE FORMATION AND GOVERNANCE .... BOARD OF DIRECTORS
  - PROVIDE FUNDING, PEOPLE ..... AND POSSIBLY OTHER RESOURCES
PROPOSED ACTIVITY

TYPE OF ACTIVITY

- BASIC RESEARCH
- APPLIED RESEARCH
- ADVANCED DEVELOPMENT
- SERVICES

FUNDING CLASSIFICATION

- THREE TYPES OF R&D ACTIVITY ARE PERFORMED:
  - COMMON PROJECTS FUNDED BY ALL MCE SHAREHOLDERS
  - SHAREHOLDER-UNIQUE PROJECTS WHICH ARE FUNDED ONLY BY THOSE MCE SHAREHOLDERS INTERESTED IN THE ACTIVITY
  - CONTRACT RESEARCH, PARTICULARLY GOVERNMENT-SPONSORED

TIMEFRAME

- TECHNOLOGY .... LEADING TO PRODUCTS FIVE YEARS OUT OR MORE
- TOOLS & SERVICES .... SHORT AND LONG RANGE
DEFINITION OF TECHNOLOGY ACTIVITIES

BASIC RESEARCH

THE SCIENTIFIC STUDY AND EXPERIMENTATION DIRECTED TOWARD INCREASING KNOWLEDGE AND UNDERSTANDING IN THOSE FIELDS OF SCIENCE RELATED TO THE MICROELECTRONIC AND COMPUTER INDUSTRIES

APPLIED RESEARCH

THE CONVERSION OF BASIC RESEARCH INTO A FORM THAT IS GENERALLY APPLICABLE TO FUTURE PRODUCT NEEDS

ADVANCED DEVELOPMENT

THE EXTENSION OF EXISTING TECHNOLOGY ONE STAGE FURTHER TO DEMONSTRATE PRODUCT FEASIBILITY
TYPICAL BASIC RESEARCH PROJECTS

These projects represent the necessary activity to assure the long-term technical competitiveness of MCE shareholders in selected areas.

- Process
- Materials
- Research-related CAD
TYPICAL R&D PROJECTS

THESE PROJECTS REPRESENT ACTIVITY WHICH TRANSFORMS SELECTED TECHNOLOGY TO A FORM READILY ASSIMILATED BY MCE SHAREHOLDERS

- PACKAGING TECHNOLOGY
- COMPUTER ARCHITECTURE RESEARCH
- PROCESS DEVELOPMENT
- ARTIFICIAL INTELLIGENCE
- PROCESS CAM
- SOFTWARE PRODUCTIVITY TOOLS
  - PROGRAMMER-LESS LANGUAGES
  - SOFTWARE ENGINEERING SYSTEMS
- TESTING METHODS
- MATERIALS
- PROCESS CAD
- CIRCUIT CAD
MCE Technology

Shareholder Value—Added
- Product Development
- Manufacture

Shareholder Final Product
DESIGN TOOLS AND SERVICES

- FULL CAD/CAM SERVICE FOR SELECTED CUSTOM AND SEMI-CUSTOM PRODUCTS INCLUDING SIMULATION, TEST GENERATION, AUTOMATIC LAYOUT, ETC.

- INITIAL SERVICES SUPPORT SEMI-CUSTOM DEVICES

- LATER SERVICES SUPPORT CUSTOM DEVICES
TECHNOLOGY TRANSFER SERVICES

. ASSIST WITH TRANSFER OF MCE TECHNOLOGY TO SHAREHOLDERS

. PERFORM SERVICE ASSOCIATED WITH SALE OF MCE TECHNOLOGY TO NON-SHAREHOLDERS

. PRINCIPAL MODE OF TECHNOLOGY TRANSFER TO SHAREHOLDERS IS VIA SHAREHOLDER PERSONNEL PARTICIPATION IN PROJECTS
EDUCATIONAL SERVICES

- MICROELECTRONICS AND COMPUTER-RELATED TECHNOLOGY
- GENERAL ADVANCED ELECTRONICS AND COMPUTER TECHNOLOGY
- TRAINING RELATED TO CAD/CAM SERVICES
APPLICATION SERVICES

APPLICATION CONSULTING FOCUSED ON HELPING NON-SHAREHOLDERS USE MICROELECTRONIC TECHNOLOGY IN THEIR PRODUCTS
APPROACH
PROJECT FOCUS

START BY DOING A FEW THINGS WELL . . . . . THEN GROW
THE ACTIVITY WITH SUCCESS AND TIME

INITIAL FOCUS OF PROJECTS WILL BE CHOSEN BY THOSE WHO
DECIDE TO PARTICIPATE
GETTING STARTED

RECRUIT
CEO AND NUCLEUS OF PEOPLE

START
ONE OR TWO R&D PROJECTS USE SHAREHOLDER FACILITIES IF POSSIBLE

PLAN
. MCE FACILITIES
. MCE SERVICES

GROW
. MCE FACILITIES
. MCE SERVICES
. MCE R&D ACTIVITY
MANAGEMENT STAFFING

SELECTION OF CEO IS FIRST PRIORITY

STAFFING WILL BE BOTH PERMANENT AND ON LOAN . . .
TIMEFRAME THREE YEARS
## R&D Project Selection

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| FULL GROWN | SHAREHOLDERS | R&D ADVISORY COMMITTEE | MCE BOARD | CEO |
| TECHNICAL STAFF | | | | SHAREHOLDERS |

R M Price CDC speeches Charles Babbage Institute <www.cbi.umn.edu>
BUSINESS CONTROLS

- QUARTERLY REVIEW BY THE MCE BOARD OF DIRECTORS
- QUARTERLY TECHNOLOGY REVIEWS BY SHAREHOLDERS
- FOCUS ON RESULTS
FUNDING

. COMMON PROJECTS .... FUNDED BY ALL SHAREHOLDERS

. UNIQUE PROJECTS .... FUNDING DECIDED BY PARTICIPANTS

. CAPITAL EXPENSE WILL BE FUNDED BY SHAREHOLDERS, AND SUPPLEMENTED BY DEBT AND MORTGAGE FINANCING AS APPROPRIATE

. SERVICES AND LICENSE REVENUE WILL OCCUR IN LATER YEARS AND WILL REDUCE OR ELIMINATE CONTRIBUTIONS BY PARENTS

. NOMINAL EQUITY ..... ALL PARTICIPANTS EQUAL
PROVIDE THE SAME DEDUCTIONS AND TAX CREDITS FOR RESEARCH AND DEVELOPMENT ACTIVITIES AS A SHAREHOLDER WOULD OBTAIN IF IT ACTED ON ITS OWN.
TECHNOLOGY TRANSFER

SHAREHOLDERS

. PROVIDE PEOPLE TO EFFECT OPTIMUM TECHNOLOGY TRANSFER

. HAVE IMMEDIATE RIGHTS TO ALL MCE TECHNOLOGY WHICH THEY HELP FUND

. GET NON-EXCLUSIVE, NON-TRANSFERABLE LICENSE

. HAVE PRIORITY ON MCE TECHNOLOGY TRANSFER SERVICES

NON-SHAREHOLDERS

. CAN OBTAIN LICENSES AT FAIR MARKET PRICE AT APPROPRIATE TIME
SERVICES SECTIONS

- SERVICES ARE BILLED AT A REDUCED RATE TO MCE SHAREHOLDERS
- PRIORITY IS GIVEN TO MCE SHAREHOLDERS
- POTENTIAL EXTERNAL SERVICE PRICED AT A PROFIT
  - DESIGN SERVICES
  - TECHNOLOGY TRANSFER SERVICES
  - EDUCATION SERVICES
  - CONSULTING SERVICES
SUMMARY
SUMMARY OF BENEFITS

MCE SHAREHOLDERS

-Broadened scope of research and development
-Reduce needless duplication of research and development
-More rapid integration of vertically related technologies
-Reduction in the ratio of invested capital to value of R&D results
-Joint development and availability of commonly needed tools and services
-Heightened awareness of technology needs and traps
-Optimum utilization of scarce technical talent

NON-SHAREHOLDERS

-Access to MCE technology and services .... especially small companies
CHIEF EXECUTIVE OFFICERS

- SELECT CHAIRMAN OF STEERING COMMITTEE
- APPOINT TASK GROUPS FROM STEERING COMMITTEE
- SELECT OUTSIDE ASSISTANCE AS NECESSARY

STEERING COMMITTEE (ONE OR TWO FROM EACH COMPANY)

TASK GROUP
- FINANCING
- FACILITIES

TASK GROUP
- TECHNOLOGY
- SCOPE

TASK GROUP
- NOMINATE
- PRESIDENT

TASK GROUP
- GOVERNMENT
- STRATEGY