

**STRATEGIC SCENARIOS
FOR
CD ROM MARKET ENTRY**

Prepared for Computer Sciences Corp.

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OBJECTIVE

- **Identify CD ROM Market Opportunities That May Fit INFONET Division Directions**
- **Formulate Six Scenarios Focused on Market Niches**
- **Consistent with Company's Strengths/ Worldwide Distribution/ Network Services**
- **Highlight Potential Partners/Joint Ventures Consistent with Above**



THE MEDIUM . . .

- Resistent (Dirt, Heat, Scratches)
- Resilient (To Drops, Head Crashes)
- Unparalleled Error Correction
(1 in 10^3 \longrightarrow 1 in 10^{12})
- Can Be Mailed With Impunity



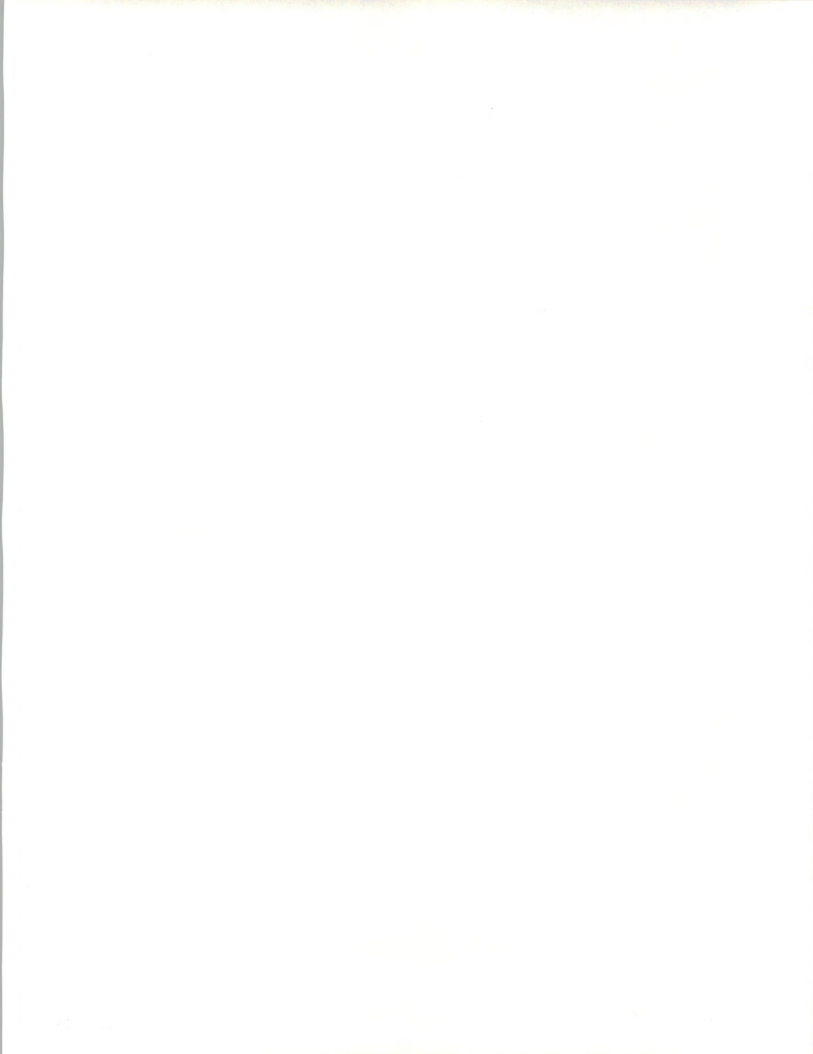
THE STORAGE . . .

- **Data (550 MB)**
- **Text (150,000 Pages)**
- **Images (15,000)**
- **Sound (2 Hours)**



THE PRODUCTS . . .

- **Drives**
- **Workstations**
- **Software/Applications**
- **Data/Subscriptions**



NEGATIVES . . .

- **No Write/Erase/Edit (Yet)**
- **Slow Access (1/2 to 1 Second)**
- **Difficult to Backup**
- **Expensive (But Getting Cheaper)**
- **Slow Turnaround for Data Disks
(But Improving)**



BARRIERS TO MARKET PENETRATION

- **Lack of Standards**
 - Hardware
 - Software

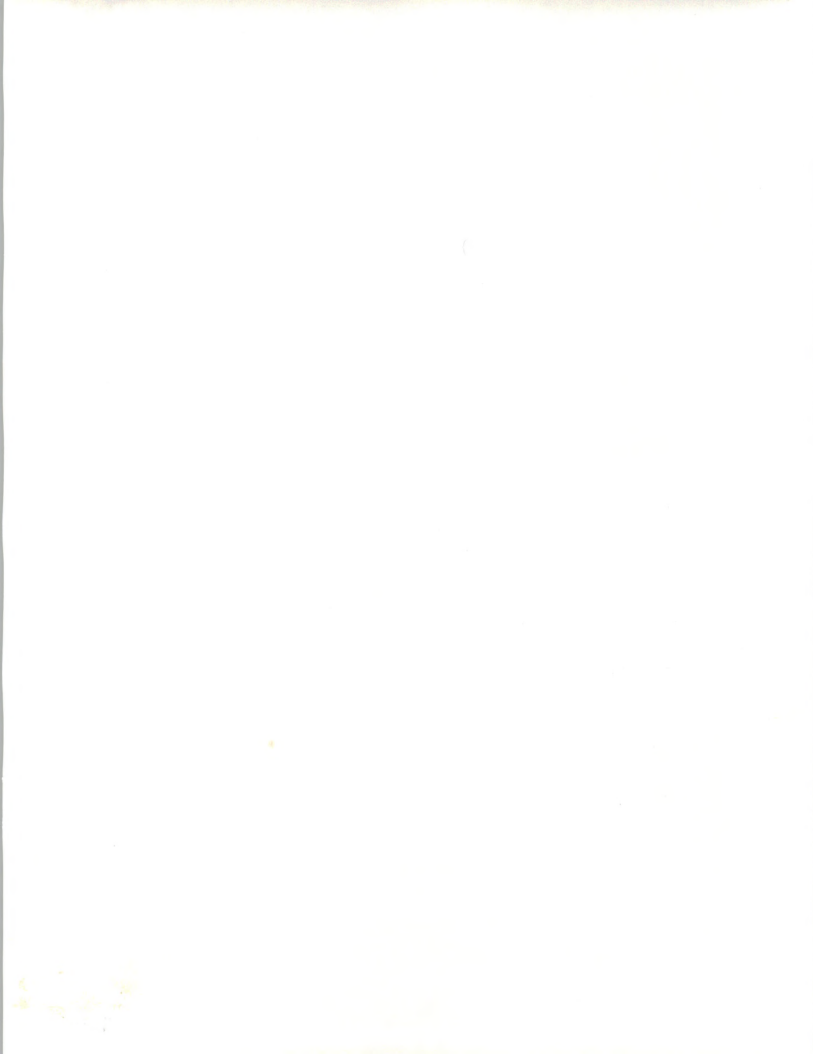
- **Start-up Costs Are High**
 - CD ROM Is Expensive
 - Data File Creation Is Expensive

- **User-specific Interfaces Needed**

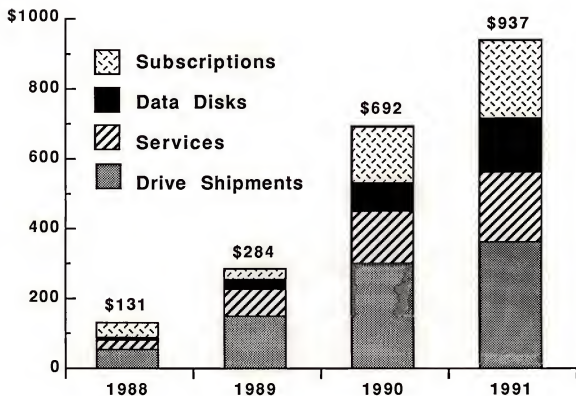


CD ROM MARKETS: SOFTWARE DEPENDENT

- **CD ROM Personalizes Data Base Use Like the PC Personalized Information Processing**
- **Main Added Value: Specific, User-profile/Data Content-oriented Search Capabilities**
- **Generic Search/Index Software Available**



CD ROM MARKETS, 1988-1991





EXAMPLE OF CROSS-INDUSTRY APPLICATION FOR INDUSTRY-SPECIFIC MARKETS

- **Sample Tool:** CD ROM-based Street Map

- **Applications:** Sales Territory Assignment/
Call Planning, Market Analysis
for Siting 24-hour ATM, Taxi
Dispatching, Electrician
Service Call Sequencing, etc.

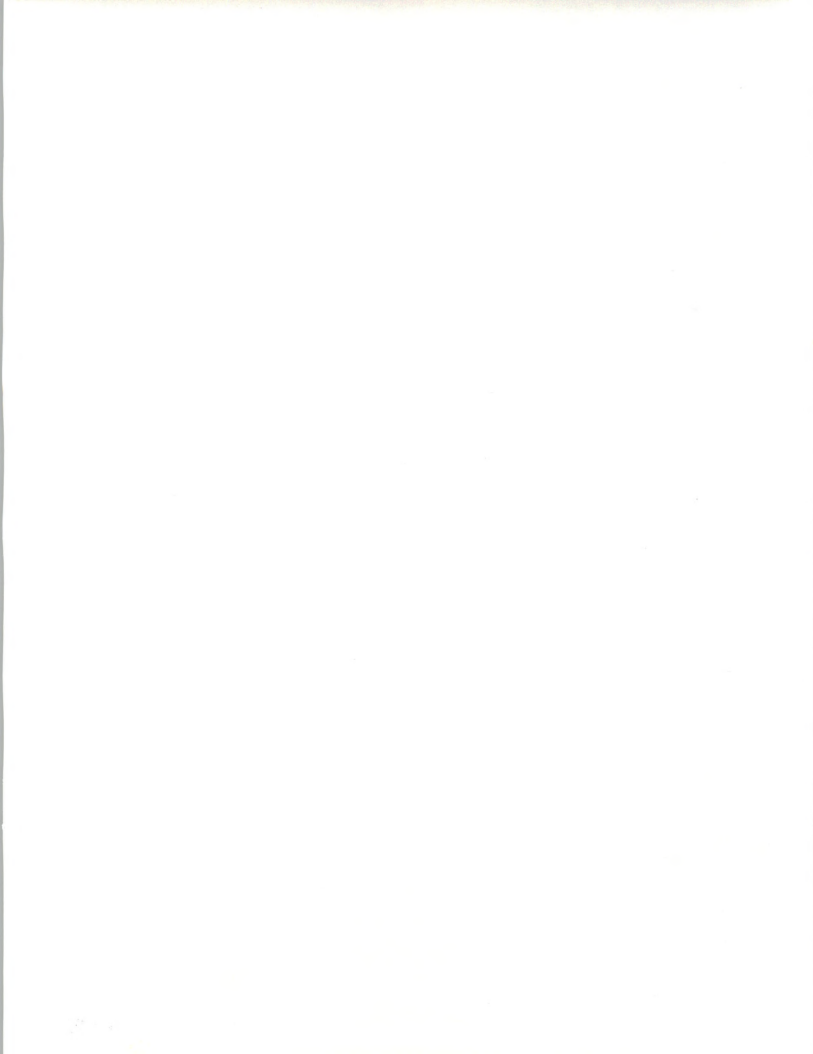


CD ROM: MARKETING TOOL

Example

- **Drug Manufacturers: Spend \$20K/Yr. on Each of 175,000 Physicians Writing Prescriptions**

- **One CD ROM Disk Could Deliver All of the Information Contained in 4,500 Medical Journals That Target This Tiny Distribution Channel**



CD ROM: COMMUNICATIONS TOOL

- **Controlled Release of Large Volumes of Information to Broad Audience**

- **Look up/Reference Search/Authorization**

- **Examples: Pricing Lists, Maintenance Procedures, Engineering Diagrams, Standards**



CD ROM IMPACT ON PROCESSING SERVICES

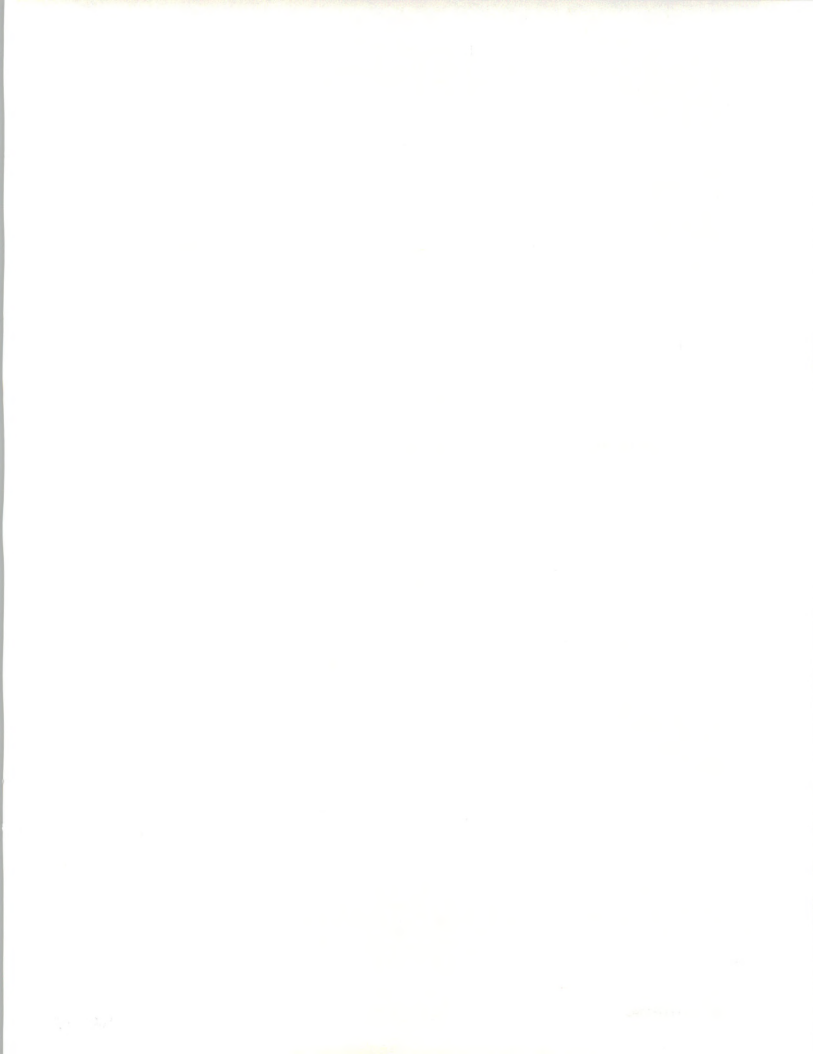
- **Positive:**

- **New Hybrid Services (\$525 M: 1991)**
- **WORM Back-up Services**

- **Negative:**

- **Online Data Base Services (\$60 M: 1991)**
- **Microfiche/COM Services (\$40 M: 1991)**

- **No Impact on Facilities Mangement**



CONCLUSION

- **CD ROM Needs the Same "Creative Explosion" Support as the PC to Achieve Its Full Potential. Without It, CD ROM Will Languish**

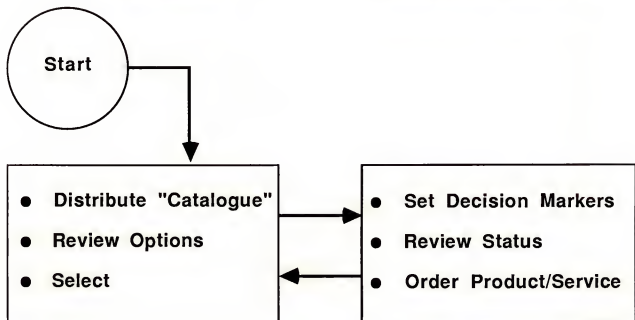
- **CD ROM Is First in Long Line of Optical Storage Products that May Ultimately Replace Magnetic Storage.**



HYBRID SERVICES

CD ROM

Network Service



Examples:

- Sales Catalogues
- Configurators
- Stocks/Bonds/Commodities
- Maintenance Documentation

Examples:

- Order Entry
- Supplier Purchases
- Updates, Real Time
- Support, Real Time



SELECTED SCENARIOS



SCENARIO ONE

- **Sector: Medicaid**

- **CD ROM Service:** - Eligibility Entitlement (State, Federal)

- **On-line Service:** - On-line Updates of CD ROM BASE
 - Collection of Claims Data
 - Electronic Funds Transfer
 - Electronic Doctor's Billing to State

- **International Applicability: Yes**

- **Competition: Medicaid FM Systems**

- **Target Markets: State**



SCENARIO TWO

- **Sector: Fortune 1000 Companies**
- **CD ROM Service: Sales Catalogue/
Configuration**
- **On-line Service:**
 - **On-line Updates,
Promotions**
 - **Order Entry**
 - **Delivery Status
Reporting**
 - **Availability**
- **International Applicability: Yes**
- **Competition: - POS Networks**
- **Target Markets: - Medium-sized, Large
Retail Chains,
Manufacturers**
- **Options: - "Upstream" Suppliers
Purchasing/Bidding Set**



SCENARIO THREE

- **Sector: Travel Agencies**
- **CD ROM Service:**
 - **AOG Domestic/International Including Lodging, Transportation Options, Still Frame Graphics**
 - **"Waiting Room" Sales Tool**
- **On-line Service:**
 - **Collection/Distribution Gateway to Specialized Airline, Hotel, Rental Car Networks**
- **International Applicability: Limited**
- **Competition: In-place, Partial Agency Systems**
- **Target Markets: UA, AA, Delta**
- **Options: Large Agencies**

SCENARIO FOUR

- **Sector: Financial Services**

- **CD ROM Service: Local Historical Reference, Look Up**

- **On-line Service:**
 - **Real time Updates of Credit, Stocks, etc. Quotations/Prices**

 - **Setting Decision Triggers**

 - **Order Entry/Processing**

- **International Applicability: Yes**

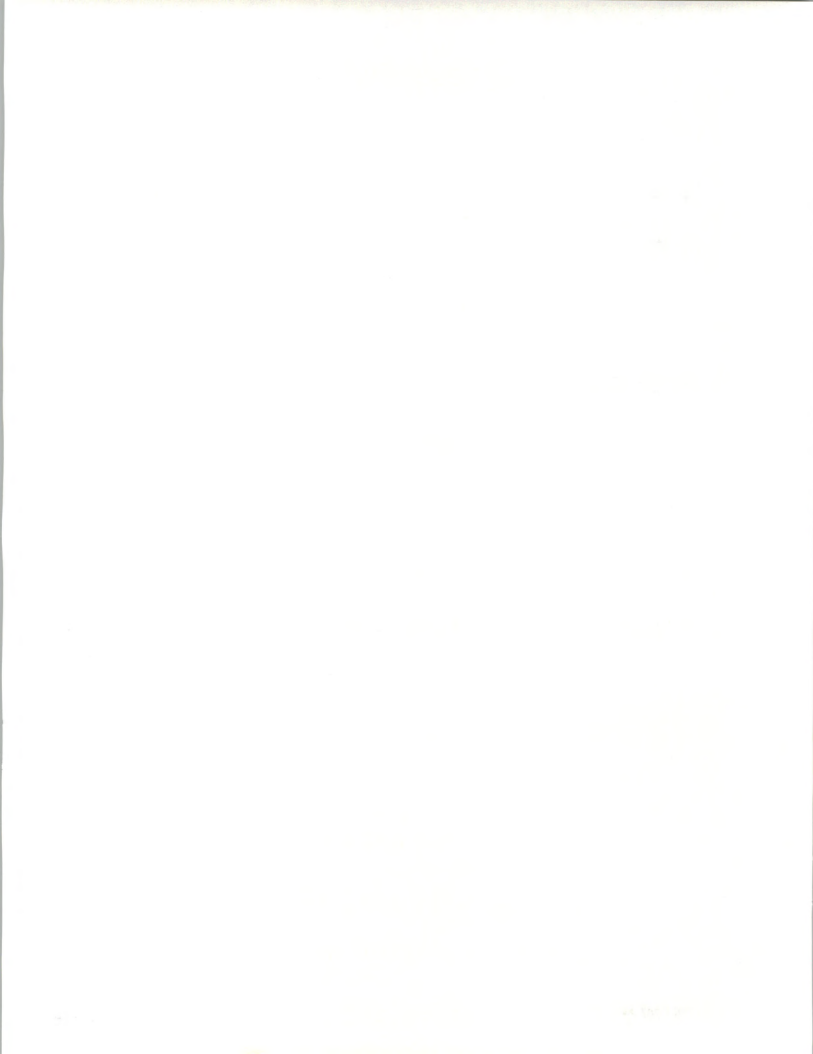
- **Competition: Dow Jones/Datext, Lotus One Source, Quotron, Telerate, TRW**

- **Target Markets: Brokerage Houses, Retail Chains**



SCENARIO FIVE

- **Sector: Maintenance Documentation**
- **CD ROM Service: Delivery of Reference Look Up of Full Maintenance Text, Diagrams**
- **On-line Service:**
 - On-line Query, Support
 - On-line Updates
 - Occurrence Data Base Collection and Prompting
- **International Applicability: Yes**
- **Competition: In-house Projects**
- **Target Markets: Hardware Manufacturers, Aerospace, Engineering/ Construction Firms/ Telecommunications**
- **Other: Possible Alliance with CD ROM Manufacturers and Applications Companies**



SCENARIO SIX

- **Sector: Wholesale/Retail Publishing**
- **CD ROM Service:** - Inventory and Title Source Search (at Retail Level)
- **On-line Service:**
 - Purchase Order Handling
 - Delivery Status Query
 - Inventory Update
 - Price/Promotion Updates
- **International Applicability: Yes**
- **Competition:** D&B, McGraw-Hill, Prentiss Hall, etc.
- **Target Markets:** National/Regional Wholesale Publishers and Their Outlet Chains



INFONET BEST OPPORTUNITIES

A. Medicaid:

- Good Existing CSC Contacts (Contracts)**
- Opportunity to Piggyback Marketing**
- Service in Demand**
- No One Doing This at Present**
- Responsive Applications Developers
(Reference Technology)**

INFONET BEST OPPORTUNITIES

B. Publishing:

- Huge Potential Market**
- Easily Adaptable to a Broad Selection of Vertical Markets**
- Some CSC Retail Presence**
- Best CD ROM (Standalone) Market to Date, Creating Opportunity to Network Installations**



INFONET BEST OPPORTUNITIES

C. Fortune 1000 Companies:

- Sales Catalogue/Configurator/Order Entry**
- Very Broadly Applicable, International**
- No Competition**
- Sales/Marketing Can Be Piggybacked**



NETWORK FIT

- **Best Network Opportunities Are Being Handled In-house**
 - Prentiss Hall (PHINET)
 - Dow Jones
 - Lotus
 - Quotron, Telerate et al
- **Transfer Applications Are Therefore Unlikely Target**
- **Hybrid Applications Demand Specialized Marketing to Develop; Network Is often Not Used in Current, Pre-CD ROM Environment**
- **Gateway Approach Could Be Best Bet; Leverages High Volume Transactions on Captive Networks**

CONCLUSIONS

- **Realistically, CD ROM Is Unattractive to INFONET:**
 - **Lack of Large Commercial User Base to Leverage**
 - **Lack of Commercial Marketing Muscle to Drive New Opportunities**

- **CD ROM Technology Is Secondary to Application Knowledge and Presence in Best Markets:**
 - **Publishing/News Products**
 - **Libraries Services**
 - **Legal Services**
 - **Securities/Financial Services**
 - **Medical Services**



CONCLUSIONS

- **CD ROM, per se, Does Not Have Large Market Potential until 1988+: Market Will Not Top \$1 Billion until 1991. As a Result There Is No Hot Short-term Potential for INFONET.**
- **CSC Should Consider a Strategic Alliance with Company in CD ROM Technology. Explore Market Potential.**

