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Remots Batch Market

TITLE

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REPORT ON

REMOTE BATCH MARKET

FOR

GENERAL ELECTRIC

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I. SUMMARY

- Vendors have difficulty identifying remote batch revenues as a percentage of their total remote computing services revenues whenever they are offering more than one mode of service. Main computers used for remote batch are large scale IBM for business, and CDC and Univac computers for scientific and engineering services.

- Large company users purchase remote batch services for the open "number crunching" power of large CPUs and some specialized software. Small company users seek general business applications and industry specialized package capabilities; they buy because it is economical for them to do so.

- The remote batch market seems to be ill defined; the most pronounced segments of the market are highly product oriented (e.g., Ticketron, MCAUTO'S hospital services).

- The projected growth of the remote batch market through the use of intelligent terminals to batch input transactions is not yet a factor.

- On the other hand, there are several of the leading vendors implementing "distributed processing" systems using minicomputers. This type of processing is classified as remote batch but might more properly be classified under a separate category.

- This study covers U. S. remote batch services revenues only.

II. GENERAL MARKET CHARACTERISTICS

- In the medical industry, MCAUTO and Shared Medical Systems dominate the hospital market. Together they accounted for almost $50 million worth of revenues in 1976. We regard about one third of MCAUTO'S hospital revenues in the remote batch category, the remainder are in facilities management and interactive services.

- The size of hospital buying services from MCAUTO and SMS is primarily in the 200 to 500 bed range. This market is now fairly saturated for straight accounting services. It is now being expanded by also providing clinical and medical support services. MCAUTO, in particular, is doing this by putting minicomputers on site in hospitals.

- We have counted Ticketron, the Control Data service to the entertainment industry, as remote batch. CDC classifies it in this category.

- In the general scientific and engineering marketplace, which covers the functions performed in all industries, UCC, MCAUTO, and Control Data Corporation are the strongest companies.

- The general scientific and engineering market covers very large manufacturing, utilities, and construction companies. However, there are many smaller engineering organizations which purchase these services for projects being performed for large companies.

- Power utilities purchase remote batch services primarily from CDC and UCC to support their construction activities. This particularly is true in the case of those utilities constructing nuclear power plants.

- The telephone utilities, particularly the larger members of the Bell system, purchase much less remote batch service than they do interactive. However, there is a significant amount of remote batch service purchased by these companies to support their business operations. In addition, much of the interactive work performed by services vendors for telephone companies involves deferred run (remote batch) portions.

- Without including correspondent banking services, the finance and banking market is still one of the largest for remote batch services. MCAUTO, UCC, and Boeing Computer Services all provide services, as does Control Data Corporation through its subsidiary Brokerage Transaction Services, Inc. and its banking operation in Los Angeles. There are numerous other small independent services companies providing remote batch services, usually in conjunction with facilities management

contracts to large banks. Some examples of such companies are: Metridata, Weiland, ACS, and Applied Financial Systems. Financial Services Group of Automatic Data Processing also provides significant services to brokerage organizations, trust departments in banks, and, more recently, to banks and savings and loans companies themselves. Although most of these services are provided in batch mode, there is an increasing use of remote batch now that Cyphernetics is available to provide the network.

- For the vendors analyzed here, the manufacturing industry is the second largest sector after the general scientific and engineering category. This latter, of course, covers applications bought by manufacturers as well as a whole host of other organizations. MCAUTO, UCC, Boeing Computer Services and UCS all provide manufacturing services. Both MCAUTO and UCC are emphasizing numerical control machine tool services.

- Within manufacturing, both UCC and CDC derive considerable remote batch revenues from the petro-chemical industry.

- In the Federal Government, CDC, Boeing Computer Services, and Optimum Systems are the largest remote batch service suppliers. Despite the characteristics of the contract they have with GSA, CSC only derives 15% of those revenues from remote batch, with the remainder coming from interactive services. Tymshare has obtained several large remote batch contracts in the Federal Government area with its IBM 370/158 services.

- As shown in the attached exhibit, the companies sampled accounted for over $110 million of remote batch revenues in 1975. This is over

40% of the total remote batch market in 1975 of $280 million.

MCAUTO, CDC, UCC, and BCS account for $90 million, or 1/3 of the total 1975 market.

- Here are some comments on individual companies serving the remote batch market.

  - Itel Data Services is getting into the remote batch market through the acquisition of Utility Network of America and Computer Dimensions. UNA is a $5 million a year company with similar characteristics to UCC.

  - Boeing Computer Services and Service Bureau Company are pushing towards the financial market with EFTS. These two and ADP are also concentrating on the combination of EFTS with the POS and retail market.

  - BCS is still too fragmented and is not yet working as a team. Each of its regions operates in an autonomous manner.

  - The standard business of UCC, CDC, and MCAUTO in the remote batch area for scientific and engineering applications is not growing significantly. This traditional remote batch market is probably growing at 10% a year or less; growth in the market is coming from new business, new applications, and new companies entering the market.

  - Management Horizons Data Systems is a good example of a small specialist company which provides turnkey systems to

wholesale distributors, through remote batch services.

- Tymshare is basically a starter in the remote batch market. Its major thrusts are to the medical and manufacturing industries.

- National CSS is very oriented towards customized package development using sophisticated tools such as RAMIS and NOMAD. Most of this work is done in interactive mode, but they will increasingly use minicomputers and intelligent terminals within their applications specialized services.

- Most of Optimum Systems' remote batch sales are of the utility type, selling performance and support with their remote batch services as well as the Wylbur front-end processing system. They have some applications specialty in manufacturing, government and legal industries; sports teams also provide them with significant remote batch revenues. OSI does not have an interactive capability and relies on various levels of remote batch.

- The attached chart shows the distribution of the sampled vendors'1975 revenues.

1975 REVENUE DIVISION FOR R/B MARKET

10 COMPANY SAMPLE VS. TOTAL MARKET

TYPE OF SERVICE	10 COMPANY SAMPLE	TOTAL MARKET	PERCENT
Scientific and Engineering	$ 36	$ 130	27 %
Business (w/MCAUTO Hospital & CDC Ticketron)	60	110	55
Government	19	40	48
TOTAL	$115	$ 280	41 %
Scientific and Engineering	$ 36	$ 130	27 %
Business (w/o MCAUTO Hospital & CDC Ticketron)	40	110	36
Government	19	40	48
TOTAL	$ 95	$ 280	34 %

($ Millions)

- The Federal Government market probably has the largest component of remote batch among all the industry markets. Approximately 1/3 of the Federal Government expenditures for remote computing services goes to remote batch.

- In the Federal Government market, Optimum Systems has about $14 million worth of revenues in 1975. However, of these revenues $11 million are categorized as being facilities management; these are through contracts with EPA and FEA. The EPA contract has recently been lost to Comnet.

- Other vendors to the Federal Government market with remote batch services are as follows:

  - Comnet: $2 million per year
  - Planning Research Corporation: $1.5 million per year
  - Informatics: $.5 million per year
  - Litton: $.5 million per year
  - SDL: $.5 million per year
  - Call Data: $.5 million per year

The above figures reflect purchases primarily in the Washington D. C. area.

VENDORS' 1975 REVENUES FOR REMOTE BATCH SERVICES

COMPANY	TOTAL R.C.S.	R/B	% RCS
MCAUTO	$ 40	$ 37	93 %
CDC/SBC	104	27	26
UCC	18	18	100
BCS	17	12	71
OSI	7	6	86
CSC	38	4	11
UCS	17	4	23
NCSS	30	3	10
TYMSHARE	37	2	5
MANAGEMENT HORIZONS D.S.	2	1.5	75
TOTAL	$310	$114.5	37 %

($ Million)

(NOTE: Rounded Numbers)

VENDORS 1975 R/B REVENUES DISTRIBUTED BY INDUSTRY SECTOR

VENDOR	SCIENT.(*) & ENGR.	MEDICAL &(HOSP.)	WHOLESALE DISTR.	OTHER	UTILITIES	FINANCE & BANKING	MFG.	GOVT.	TOTAL
MCAUTO	7	12			8	4	5	1	37.0
CDC/SBC**	9			(TICKETRON) 8	1	1	1	7	27.0
UCC	12					3	3		18.0
BCS	5					2	2	3	12.0
OSI	1				1		1	3	6.0
CSC						0.5	0.5	3	4.0
UCS	1.5					0.5	2		4.0
NCSS					1.25	0.5	1.25		3.0
TYMSHARE								2	2.0
MANAGE-MENT HORI-ZON D.S.			1.5						1.5
TOTALS	35.5	12	1.5	8	11.25	11.5	15.75	19	114.5

($ Million)

* 'Scientific and Engineering' revenues are obtained from several industries; manufacturing (aerospace, petro-chemical, and transportation equipment), utilities, construction, architects and engineers.

** SBC: 1-util., 1-bank; 1-mfg, 3-govt.

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VENDOR: C.D.C. (SCOPE)

Total RCS Revenues in 1975: $104 M. (Data Services Rev.)

R/B Revenues: $27 million. 26% of total. (1976: +25% anticipated).

			CHANGE 74/75	CHANGE 75/76
Source:	CYBERNET $13 M (SCOPE)	48% of total	10-15%	<10 %
	SBC (CALL PLUS) $6 M (serv. bur.)	22% of total	15%	25 %
	Ticketron $8 M (rec. & sports events)	30% of total	<10%	<10 %

DESCRIPTION:

I. Type of business. (systems capabilities); 6 x CDC/6600 + 7600. (Older units being replaced by CYBER 170s. Separate systems for remote batch and interactive. (SCOPE, KRONOS).70% business @ 2000-2400 b.p.s., HASP on 7600.

II. Industries/Applications served

Name	% R/B Revenues
Scientific + Engr./Struct. Eng., Nuclear Codes ($9 million)	32%
Ticket Vending/Recreation, sports, transport., etc. ($8 million)	30%
Utilities($1 million)	4%
Bank/Finance ($1 million)	4%
Manufacturing ($1 million)	4%
Federal Government ($7 million)	26%
	100%

III. Customer Characteristics (comments):

CYBERNET depends upon a small number of key customers (10-15) for about 50% of U.S. revenues. Sample customers: Bechtel, Hughes Aircraft, NCR, NASA, D.O.D., and TVA.

IV. Market Position (comments): Ticketron losing money, but CDC betting on volume to break even. Projected CYBERNET growth only ±10% in R/B; U.S.C. & MCAUTO gaining % of market share due to their marketing & organizational superiorities. CDC considers that many decentralized centers are an advantage, with offices in major cities offering total services. Other strong R/B competition is COMNET & U.N.A. (acquired by ITEL).

NOTES

1. Ticketron has approximately 1000 terminals consisting of a teletype unit, keyboard and a high-speed ticket printer. They are located in shopping centers, banks and department stores.

- Ticketron is CDC's attempt to penetrate the services market in the "$100 billion a year" leisure market. Although primarily geared to sports and spectator events, Ticketron provides boarding passes for AMTRAK and developed the boarding pass system for Pacific Southwest Airlines. It also provides services to the New Jersey State Lottery and New York City's Off-Track Betting.

- The service is based on two twin CDC 1700 centers, one in Los Angeles and the other in New York.

- Ticketron plans to move into the turnkey systems business with a Ticketron Arena System using a desk-top MP17 Computer with CRT and high speed printer. This will handle season ticket sales and will later be able to "hook" into the national Ticketron network.

- A major problem with Ticketron now is the communications cost and delays inherent in a centralized system. Inventories as well as movements have to be communicated over the network for the events which are basically local in nature. CDC will probably react to this by establishing a distributed processing service with local storage of data bases.

2. CDC does not differentiate between batch and remote batch; it calls all work done under SCOPE as batch either local or remote. It will sometimes refer to work brought in over-the-counter but then submitted through a remote batch terminal as remote batch; for this report and other INPUT reports these revenues are counted as batch.

3. CDC has approximately $27 million of remote computing and batch revenues in Europe. These are primarily for SCOPE services, but also include some revenues for KRONOS and for SBC's CALL system.

4. CDC has approximately $9 million of data services revenues from its services in Australia, Canada, Mexico, Brazil, and South Africa.

5. The following applications groups account for over 80% of CYBERNET revenues:

Structural Analysis

- A worldwide product offering, structures is the breadwinner of CDC's applications product line. The strategy of the structural analysis group is to expand its present product set into the pre- and post-processing tasks, thereby moving from discrete products to integrated solutions.

- As a major applications investment in 1975, a graphics capability was built into the structures product set. It allows the user to graphically enter a model for analysis using pictures of the structure under investigation. From that common data base, the numerical input is automatically prepared for STARDYNE of NASTRAN or whatever program suits the user's need. The results are automatically fed back into a solution file in the graphics data base. At this point, the user can

graphically access that data base. It greatly shortens the days and weeks of engineering time that precede and follow the computer solution.

- To enhance CDC's conventional structures applications, there is an automatic substructuring capability for CDC/NASTRAN. This capability is exclusive to Control Data until October, 1976, when the contract will allow MacNeal-Schwendler to release the feature to competing data services vendors.

Graphics

- The strategy of the Graphics Group is to implement the pre- and post-processing capability for structures applications. In addition, the group is focusing on the development of a comprehensive interactive design drafting system. In both of these efforts, the goal is to provide integrated products which substantially increase the user's productivity.

- In 1975 a standard plotter interface for all CYBERNET Data Centers was implemented. This interface enables most users to access the graphics plotter throughout the CYBERNET network via a common format.

Electrical Engineering

- The major strategy of the Electrical Engineering Group is to provide a complete product line from circuit or logic analysis in the design stages through microprocessor simulation, automatic logic test generation and printed circuit board layout in the manufacturing stage. Again, the objective is to provide a complete solution capability for the end user.

- Using a program known as INIS with TESS and SYSCAP, CDC offers the user a combination—time-sharing capabilities for data entry and batch processing for production runs. With CYBERLINK and INIS, he can easily switch back and forth.

- Newly released products in this group include CC-TEGAS3 and SYSCAP II. These are the key products:

  - SYSCAP II (System of Circuit Analysis Programs) is directed to meeting industry needs in the area of circuit analysis. Available through a licensing agreement with Rockwell International Corporation, this interactive and/or batch tool is used in component design and analysis.

  - CC-TEGAS3 (Test Generation and Simulation System) is aimed at industry requirements in logic design and test generation. Available in both batch and time-sharing versions, this program was developed by Comprehensive Computer Systems and Services of Austin, Texas. Its primary functions include logic design and testing of logic boards.

  - TESS is a sophisticated computer tool offered to meet industry needs in circuit and system analysis. This batch processing program was developed by TRW Systems Group of Redondo Beach, California. It is used primarily in component analysis, combination component/logic analysis,and general system analysis, such as electrical, electro-mechanical and mechanical.

- There is a major effort to acquire other new electrical engineering applications to round out product offerings in this area.

Data Base Management

- This group intends to expand its product line to meet the needs of the less sophisticated portion of the marketplace. Until April, 1975, the only product in the group was SYSTEM 2000 which is suitable for large data base applications but is too complex for most remote computing applications.

- Two new products have expanded CDC's product offering in this area—ATHENA, released in April, and TOTAL, released in June, 1975.

- Both ATHENA and TOTAL are easier to use than SYSTEM 2000 and have less overhead. And while they also have fewer features, they provide a more economical solution to many data base management problems. Both deliberately build on an existing strength—a target area.

Financial

- This group includes financial analysis, spread sheet simulation, some accounting packages and an integrated data base. Currently, CDC offers IFMS, a financial analysis package, through CYBERNET Service. FINMOD, a spread sheet simulation program currently available only in the Washington Region, may soon be released for national use.

- Application Services Division is actively seeking other financial applications to complete this product line.

Management Services

- The strategy of this group is to provide general tools in the operations research and simulation area. By applying these tools to problems such as the energy crisis, it is possible to link into major and diverse market segments. For example, during the latter part of

1974, the Federal Energy Administration used APEX-III and PDS/MaGen to perform analysis for Project Independence.

6. CDC has introduced a couple of"super computer"services. The first of these is CYBER 76 service based on a CDC 7600. Typical applications are the larger of those typically operated on CDC computers including reservoir simulation, structural analysis, linear programming, and nuclear reactor analysis. CDC has also introduced a Star 100 service based on a Star computer. The price/performance improvements of services based on these computers have the unfortunate result of reducing revenues for some of the very large jobs that CDC would otherwise process on its 6600 computers. On the other hand, it can make CDC more competitive with companies such as UCS and MCAUTO.

- Although CDC currently uses two operating systems, KRONOS and SCOPE, for interactive and remote batch services respectively, the company is in the process of implementing its NOS operating system. This is an attempt by CDC to integrate its operating systems. To achieve this, the KRONOS operating system has been migrated to NOS, and SCOPE 3.4 operating system is being migrated to NOS/BE.

7. CDC is in the process of replacing its older 6400/6600 computers with CYBER 170s. These will be in addition to the CYBER 73 and 74 computers now in place.

- There are 7 domestic CYBERNET centers and 1 in Canada.

Location	Equipment
Rockville, MD	2 CDC CYBER 73 2 CDC 6600 (Being replaced by CYBER 175)
New York, NY	1 CDC 6600
Boston, MA	1 CDC 6600
Houston, TX	1 CDC CYBER 74 1 CDC 6600
Minneapolis, MN	1 CDC 6600 1 CDC CYBER 76
Los Angeles, CA	1 CDC 6600 2 CDC 6400 (COMPU/NET)
Sunnyvale, CA	CDC CYBER 175

- In addition there are over 50 remote batch processing sites including public terminals where customers can take their work for submission to the systems.

8. Virtually all applications products offered by CDC under SCOPE are obtained from a third party. Examples are as follows:

- ANSYS, from Swanson Analysis Systems ($1.2 million of U. S. revenues in 1975)

- CDC/NASTRAN, developed by CSC under contract to NASA, supported by MacNeal Schwendler Corporation ($1.6 million)

- MRI/STARDYNE, developed by Mechanics Research, Inc. ($2.4 million)

- MARC-CDC, developed by the Marc Analysis Research Corporation ($0.8 million)

9. Use of access speeds on the remote batch SCOPE service is approximately as follows:

- Less than 1200 bps, minimal

- 1200/2400 bps, 70%
- 4800/9600 bps, 15%-20%
- 40.8 kb, 15%-20% (using CDC 160A/MARC IV for high speed transmission)

10. Note should be made that the scientific and engineering revenues of CDC are obtained from manufacturing companies, utilities, and construction and engineering companies.

Vendor: MCAUTO

Total RCS Revenues in 1975: 1. Hospital Services - $30 million (plus $7 million FM)

2. Network Services $40 million. (24% over 1974)

R/B Revenues: $37 million (Growth: 30%/yr.) 53% of total.

			CHANGE	
			74/75	75/76
Source:	Hospital Shared Computer Services ($12 million)	32% of total	+53 %	30 %
	Network Services	68% of total	30 %	20 %

DESCRIPTION:

I. Type of business.(systems capabilities) 2 x Sigma/9; 8 x 370/168; 1 x CYBER 175. (Systems share in local batch & T/S.) IBM OS/MVT → V.S.; SCOPE / KRONOS. > 75% of activity at line speeds of ≥ 3600 BPS.

Under SCOPE: FORTRAN, BASIC, COBOL, COMPASS, SIMSCRIPT, SORT/MERGE

ASP supports work stations .

II. Industries/Applications served

Name	% R/B Revenues
Hospitals/acc'tg., patient analysis	32%
Financial/acc'tg. systems, financial modeling (*)	11%
**Manufacturing/material control, (MRP), numerical control of machine tools	13%
Engineering & construction/strength materials, (ANSYS), etc.	19%
Utilities, education, et. al.	22%
	100%

**"CO-OP". (Customer On line Order Processing): Order entry, processing, and inventory control system. "MCSC" (Management Scheduling and Control System) "CAPOSS" (Capacity Planning Operation Sequencing)

III. Customer Characteristics (comments)

1500 clients in 48 states including 36 of top 50 industrials; 25 units of AT&T; 27 of 30 largest engineering design firms, 20 of 50 largest utilities. Sample customers: L. A. County Department of Health, American Honda, Lakeview Memorial Hospital (Illinois), Pace Co., John Deere, Hamilton Standard, AT&T; 70% business depends upon proprietary languages, etc.

IV. Market Position (comments): Largest supplier of shared computer services to hospitals (> 300); going after financial market W/AUTOPLAN* and AUTOCOUNTANT*; 3000 terminals connected to users in 1975 (20% over 1974) installed in 628 client offices; 3600 people in 39 locations with 6 computer centers; strength in market due to: proprietary software, steady service, quality of work, in depth experience in industries specialized.

NOTES

- Of its 1975 computer services revenues of $164 million, as published by MCAUTO, almost half, $80 million, comes from the parent company and its other subsidiaries. Of the $84 million obtained from outside sources, $37 million comes from the Hospital Shared Computer Services Division and the remaining $47 million from remote computing services ($40 million), facilities management ($3 million), and professional services ($4 million).

- The hospital services business is expected to be at least as large as the rest of the business in 1977/78. It had a dramatic growth in 1975 over 1974, and this has slowed down to some extent in 1976. Hospitals of the 200 to 500 bed size are becoming saturated with services. For this reason, MCAUTO is adding additional services in order to expand its market. It is moving into a distributed processing mode by putting small DEC computers into hospitals for clinical services and data entry.

- We count about a third of the hospital revenues in the remote batch market with the remainder counted in interactive and facilities management. However these distinctions are somewhat artificial because of the integrated nature of the services offered by MCAUTO.

- Some 90% of the network services are remote batch.

- The interactive work is done on the XDS Sigma/9, two of the 370/168s, and the CDC CYBER 175. The 370/168s offer interactive IMS processing.

- Five of the 168s are located in St. Louis, the remaining three

are in Long Beach, California, together with the CDC CYBER 175 and a Model 158.

- MCAUTO offers local telephone service access in 28 cities in the Continental United States.

- MCAUTO has successfully emphasized selling IMS either in a remote batch or an interactive access mode. They have had several large IMS contracts where they helped a user to install IMS, at the same time running training and development sessions on their computers. The size of some of these contracts has exceeded $100,000 a month at peak period.

- Less than 5% of MCAUTO'S remote batch business comes from slow speed (less than 1200 bps) access. About 20% comes from 1200/2400 bps, while the remaining 75% comes from 3600 bps and above.

- Several years ago MCAUTO contracted with Univac to develop an integrated package switching network to support its various computers. This development effort, which supposed to have cost $16 million when completed, was aborted after one year.

- MCAUTO has emphasized graphics, supported by its direct access computer system (DAC) on the Sigma 9s.

- McAuto currently uses OS/MVT but is planning to migrate to MVS in 1977.

VENDOR U.C.C.

Total RCS Revenues in 1975: $18 million

R/B Revenues: $18 million. 100% of total. (10% growth per annum for '74 & '73)

				CHANGE	
				74/75	75/76
Source:	Systems & Engr. Div. (SED):	$15M.	84% of total	< 10 %	< 10 %
	Banking Division :	$ 3M.	16% of total	< 10 %	< 10 %

DESCRIPTION:

I. Type of business.(systems capabilities): 360/65 in Detroit, 5 x 1108, 1 x 6600 (in Dallas) also used in R & D; Specific Exec. S/W on 2 x 1108; Exec. 8 on 1 x 1108. Many programs for both Banking & Scientific (Petrol.) industries.

II. Industries/Applications served

Name	% R/B Revenues
Structural Engr./Seismic Anal., Engr. Calc., (STRUDL)	67 %
Petrochemical/Material Analysis, Construc.	
Manuf./Numerical Control, Control for Manuf.	16 1/2 %
Banking/FCS (Financial Control System)	16 1/2 %
	100 %

III. Customer Characteristics (comments):

Project Orientation (i.e., construction) for process & job completions.

Sample customers: Multibank Financial Corp., Allied Bank Texas, and 1st National Bank of K.C., in banking.

IV. Market Position (comments): Expanding in nuclear codes and data base management (want to use as tool for penetrating manufacturing business), offers applications packages to mature industries, (i.e., C.I.F. (Central Information File), F.C.S. (Financial Control System).

Does bid on fixed price + incentive basis.

NOTES

- UCC has one of the most successful international operations through its remote batch and batch data processing centers in Europe which account for close to $20 million a year in revenues.

- In the U. S., however, the SED part of UCC has virtually been static for the last 5 or 6 years. The only real development in this period of time has been the consolidation of their Univac 1108 centers to Dallas. UCC runs a 360/65 in the Detroit area, as a holdover from its old LTV contracts. They also run banking remote batch services through IBM centers maintained at FM client banks.

- Ever since DATRAN was started, very little investment has been made in UCC remote computing development. Thus from a fairly advanced position five years ago they have gradually fallen behind their competitors.

- Nevertheless they have been successful in building a specialty in the petro-chemical industry. They are, together with CDC, the leading vendor to the petro-chemical industry.

VENDOR: B.C.S.

Total RCS Revenues in 1975: $17 million.

R/B Revenues: $12 million. 71% of total.

		CHANGE	
		74/75	75/76
Source: Leader Corporation	0 % of total	____ %	____ %
SCS Data Processing (Anchorage, Alaska)	10 % of total	30 %	20 %
BCS Remote Computing Services	90 % of total	< 20 %	____ %

DESCRIPTION:

I. Type of business.(systems capabilities): 1 x CDC Cyber 175; 1 x 370/168. VM/370 CTS. 65% business @ low speed (< 1200 BPS). FORTRAN, BASIC, APL, COBOL, ALGOL, P1I, SNOBOL, Assembler, MAINSTREAM; RSC Network.

II. Industries/Applications served

Name	% R/B Revenues
Banking & Finance	16%
Manufacturing/acc'tg. systems	16%
Government	25%
Engineering & Construc./Stress. Anal. + Design	42%
	100%

III. Customer Characteristics (comments):

Government & Engineering orientation (aerospace). Move into smaller business & banks. 65% R/B is lo-speed (< 1200 BPS). Many large company users: Ford, Exxon, Alaska Pipeline Services, Seattle Trust and Savings Bank, Department of Transportation, Army, Navy.

IV. Market Position (comments): Non-aggressive image, began offering turnkey minicomputer accounting systems to small businesses. Planned development of software applications via network for small and medium-size banks. (Emphasize EFTS).

NOTES

- There is a rumor that Boeing Computer Services is turning back its captive business with the parent company to an internal group. In 1975, BCS's total revenues were approximately $130 million; of this, approximately $80 million were for internal uses and the remaining $50 million were for commercial customers. BCS denies this rumor.

- Of the four 370/168s maintained by BCS, only two of them, in McLean, Virginia, are used for commercial services. These two are dedicated to outside services, when the others are devoted to Boeing's internal work.

- The CDC equipment, which now includes a CYBER 175, is maintained in Seattle, and again one computer is devoted to external services and the others to internal use.

- SCS Data Processing in Alaska which services the ALYESKA Pipeline Services Company uses a 360/50 operating under DOS.

- The two 370/168s in McLean, Virginia, are operated as follows: One is operated under VS/2 with TSO, and the other operates under VM/370 with CTS(which is a modified CMS)and is used for the interactive processing. The two computers share files to a limited extent. Remote batch is done on the TSO system.

- Two thirds of their remote batch revenues come from the IBM systems and the remaining third from the CDC system.

- About 65% of the TSO remote batch business is submitted at less than 1200 bps. A small amount of the remainder, about 5%, is

1200/2400 bps; 30% of the business is at 4800 bps or above.

- BCS emphasizes total compatibility with IBM.

- Boeing has been relatively unsuccessful with its efforts to penetrate various industry specialized markets; its developments for savings and loan, and retail industry, as well as the correspondent banking offerings of the Leader Corporation have not been successful.

- BCS operates three or four major regions. Each one of these regions acts as an autonomous company, develops its own software, has its own P&L responsibility, and has very little relationship with the other regions.

- The Eastern and Government Region based on McLean, Virginia, is by far the strongest area of BCS.

VENDOR: MANAGEMENT HORIZON DATA SYSTEMS

Total RCS Revenues in 1975: $2.0 M.

R/B Revenues: $1.5 M. 75% of total (Small growth)

		CHANGE	
		74/75	75/76
Source: (Subsidiary Citibank - Run by Management Horizons, an independent consulting company)	100% of total	<10 %	<10 %

DESCRIPTION:

I. Type of business. (systems capabilities) 2 x 370/158 - Software development funded by Citibank at a cost of several million dollars. Slow speed, interactive data entry with batch processing, concentrated in Mid-West.

II. Industries/Applications served

Name	% R/B Revenues
Distribution (wholesale) /order entry, inventory control, accounting systems, etc.	100%

III. Customer Characteristics (comments):

Customers from $8 - 250 M. revenues. Distributors of hardware, drugs, groceries, industrial supplies, etc.

IV. Market Position (comments):

Provides total utility for customers (turnkey operation). This involves: people, software, processing data preparation, etc.

VENDOR: TYMSHARE

Total RCS Revenues in 1975: $37 M. (65% x $56.4 M.)

R/B Revenues: $2.0 M. (startup this year) 5% of total.

			CHANGE	
			74/75	75/76
Source:	Network Services	90% of total	20 %	10-15%
	United Data Centers	10% of total	- %	30/40%

DESCRIPTION:

I. Type of business.(systems capabilities) 2 x 370/158.(2nd system delivery - late 1976). Computer shared by T/S + R/B; modified CMS/VM, HASP, up to 9600 bps.

II. Industries/Applications served

Name	% R/B Revenues
Government	80%
General Business	20%

III. Customer Characteristics (comments):

Largely government oriented; some conversion from UDC batch.

IV. Market Position (comments):

Generally strong in marketing and management maturity. Should be able to be ± $10 M. in 5 years. Electronic funds transfer may become major factor in revenues. Market thrusts towards medical services and manufacturing.

NOTES

- Tymshare's thrust has been primarily towards the Federal Government market with remote batch. They have had a large contract with the IRS and also contracts with the Navy. Apparently they have lost at least one of the Navy contracts to COMNET. There is an increasing use of remote batch services as conversion from United Data Centers.

- Degree-day accounting for oil distributors is one application that has been converted from purely batch to remote batch mode. This is envisioned as being a growing part of the remote batch revenues of Tymshare. There will therefore be a certain amount of conversion from existing customers as well as a marketing of these applications to new customers by Tymshare and UDC salespeople.

- Tymshare is using a modified CMS/VM system. They have obtained a software system called FOCUS, which is an updated RAMIS.

- Initially above 90% of their business comes from standard languages and features. They project that within two years this percentage will be reduced to 40% and proprietary industry applications will account for the remaining 60%. Since this is so new to Tymshare, large percentage differences are made by relatively small dollar amounts.

- About 90% of their business activity is converted from UDC. In other new applications areas, they are going for big ticket items and have been relatively successful in attracting Federal Government business.

- At the moment they are only offering up to 9.6 kb transmission speeds, with the bulk of the remote batch services being below 4800 bps; they will shortly add 50 kb to the network.

VENDOR: N.C.S.S.

Total RCS Revenues in 1975: $29.7 (of $32.7 M. corp. revenue)

R/B Revenues: $3.0 M. 10% of total.

			CHANGE	
			74/75	75/76
Source:	TBS Subsidiary ($1 million)	33% of total	10-15 %	20 %
	RTW Subsidiary ($0.5 million)	15% of total	<10 %	10 %
	Main Company ($1.5 million)	52% of total	<10 %	10-15 %

DESCRIPTION:

I. Type of business.(systems capabilities) 1 x 360/67; 370/168; 1 x 370/158; Amdahl 470/V6; mixed use with interactive. Customized O.S. (NP/CSS). NOMAD is their very successful Data Base Management System. TBS and RTW are older 360 equipment.

II. Industries/Applications served

Name	% R/B Revenues
Utilities/Engineering Support Services	40%
Apparel Manufact./ord. entry, invent. control	15%
Banking & Finance/Simul., financial analysis	15%
Other/General Business	30%
	100%

III. Customer Characteristics (comments):

Will emphasize complete industry oriented packages. Sample customers: Bell Tel, Pacific Tel., B of A, Polaroid, Western Electric (largest). TBS customers are small to medium-sized apparel companies.

IV. Market Position (comments): Willing to develop very customized packages (applications oriented); 50+% revenue in N.E. & N. Central U.S.A.; very high revenue per field salesperson; future strategy is to reduce dependency on major accounts. Will work minicomputers & intelligent terminals to plan of future.

NOTES

- The main NCSS operation is not in the RJE business at this point; however, its subsidiaries TBS and RTW do provide remote batch services through high speed terminals. In particular, TBS provides general business services in the New York area and RTW provides services to apparel companies in New York and Los Angeles. The main NCSS services also have a HASP compatible terminal interface which provides support to 2780/3780 terminals. The remote batch revenues obtained by the main NCSS service are primarily for deferred run; for example, RAMIS systems are set up interactively and then run in production mode in a remote batch environment.

VENDOR C.S.C.

Total RCS Revenues in 1975 (INFONET): $37.9 M. ('74: $23M.; 73: $14.4M)

R/B Revenues: $4 million. 11% of total.

		CHANGE	
		74/75	75/76
Source: Information Network Division (INFONET)	100% of total	65 %	26 %

DESCRIPTION:

I. Type of business.(systems capabilities): UNIVAC 1108 (shared w/TS); 360/195 for R/B, OS/MVT. Basic, COBOL, FORTRAN, Assembly, ALADIN; HASP on 360/195, CSTS. INFONET offices in 20 major U.S. cities.

II. Industries/Applications served

Name	% R/B Revenues
Federal Government/*FLARES, budget, etc.	75%
Manufacturing/Inventory Management, Materials Planning, etc.	12%
Financial & Commercial services/Cash mgt. (Money Max), Lease vs. Buy, Etc.	12%
Other/general (i.e., "ANSYS")	100%

III. Customer Characteristics (comments)**

Government: GSA, Army, Navy; 75% R/B dependent upon standard languages & features; 67% R/B W/speed 1200-2400 BPS.

*Financial Language for Analysis & Reporting Systems

**ANSYS=general purpose program for solution of design & engineering analysis.

IV. Market Position (comments): INFONET, specially designed T.P. network accounts for 22% of Corp. revenue & about 50% of profit. Very government oriented; concentrating on expanding in commercial area (i.e., major software development for N.C.R. #8200 mini series for health care, wholesale distribution, and financial management markets.)

NOTES

- The 360/195 used by CSC is actually that of United Airlines. The system is marketed by CSC and accounts for less than $1 million a year of remote batch revenues.

- The bulk of the remainder of the remote batch revenues comes from the Federal Government INFONET contract with GSA.

- However, CSC has perhaps 10% of its remote batch revenues from companies that have replaced in-house computers and gone completely to a service. Such organizations include small architects and engineers and small manufacturing companies. Conversion is usually from a Univac 9000 series or similar computer.

- Because of the construction of the operating system and the nature of the work they do, it is difficult for CSC to break out remote batch from interactive revenues. Indeed, the integration of remote batch and interactive services was one of the proprietary features of their service which enabled them to win the initial GSA teleprocessing services contract.

VENDOR: U.C.S. (UNITED COMPUTING SERVICES - Kansas City)

Total RCS Revenues in 1975: $17.3 million. (97% x $17.9 million)

R/B Revenues: $4 million. 23% of total.

			CHANGE	
			74/75	75/76
Source:	UCS (CDC)	90% of total	15 %	20 %
	ITS (IBM + Other)	10% of total	10 %	10 %

DESCRIPTION:

I. Type of business.(systems capabilities): 1 x Cyber 175; 2 x Cyber 175 (Common files combined for RCS use)

II Industries/Applications served

Name	% R/B Revenues
Manufact., Retail, Distrib./Inventory Control, Tax, Accounting	50%
Scientific/Seismic Analysis, Nuclear Utility	38%
Bank & Financial/Data base	12%
	100%

III. Customer Characteristics (comments)

Larger concentration in business & financial sector than expected for a CDC-based vendor. Petrochemical and utilities industries are major purchasers of services, however.

IV. Market Position (comments):

T/S oriented. Acquired FORESIGHT, a business planning language in 1975--a good marketing tool. Stronger thrust to government tax calculation & file management. D.S.M. (Distributed Storage Management) directed toward the small business area.

NOTES

- About $3 million a year of business is done by United Computing Services for its parent company United Telecommunications.

- In the last several years, UCS has grown significantly by acquisition. It has acquired International Time Sharing in Minneapolis and Foresight Computer Systems in Los Angeles among others.

- The operating systems for the large-scale CDC computers developed by United Computing Services are in advance of Control Data Corporation itself. In fact, UCS sold one of its operating systems to CDC several years ago.

- In the CDC environment they are very price competitive with CDC and offer better support in several areas.

- One of the most significant developments is their implementation of distributed storage management which is directed towards the small business area. This involves putting a minicomputer into a UCS office to support local distributors. Also, a computer can be put into a wholesaler, if it is large enough to support it itself, or may be put into a wholesaler who in turn acts as a distributor of DSM services to other wholesalers in its area. This service is less than a year old but has been relatively successful in the Kansas City area, and expansion is planned.

- However, UCS is oriented to interactive processing rather than remote batch, except as the two modes are integrated together.

VENDOR: O.S.I. (OPTIMUM SYSTEMS, INC.)

Total RCS Revenues in 1975: $6.6 million. (25% of Corp. Rev.)

R/B Revenues: $6 million. 91% of total. (Growth @20-30% year)

				CHANGE	
				74/75	75/76
Source:	*Federal Gov't. Division	($3 million)	50% of total	25 %	%
	Computer Utility Div.	($3 million)	50% of total	20 %	15 %
	**Health Services Div.	(0)	0% of total	- %	- %

*Primarily FM
**Primarily software development. Recently took Connecticut General FM contract from MCAUTO.

DESCRIPTION:

I. Type of business.(systems capabilities): 2 x 360/65 & 1 370/168 (W. Coast) 2 x 370/168 & 2 x 370/158 (E. Coast) Dedicated to Federal Government & R/B. COBOL, FORTRAN, PL/1, ALGOL, RPG, WYLBUR. Most revenue through HASP. Using TYMNET.

II. Industries/Applications served

Name	% R/B Revenues
Fed. & local Gov't./utility, data base management	50%
Manufacturing/Inventory control, accounting/ etc.	18%
Utilities	16%
Scientific and Engineering, Construction/varied, etc.	16%
	100%

III. Customer Characteristics (comments) :

2/3 of R/B from customer's new applications. 45% of R/B business dependent upon proprietary software, features, etc. Sample customers: HP, Fibreboard, Singer, Pac. Tel., Mutual of Omaha, EPA, HEW, Dallas Cowboys, many municipal governments.

IV. Market Position (comments):

Most business in government, national sports teams. N.W. & Pacific States have >50% sales. Concentrating on market specialization. Sales emphasis placed upon fast start-up, no user front end cost, and price/performance. Still most of their business is in the"utility"remote batch market.

NOTES

1. The computers on the West Coast are two 360/65s with a 370/168 being added. They account for approximately $3 million worth of remote batch revenues. They will also be processing the Medicare claims for Connecticut General.

- The two 158s in Bethesda, Maryland, use TSO and provide remote batch and facilities management services. The two 370/168s in Bethesda are dedicated to the Environmental Protection Agency. Part of this contract has been taken over by COMNET.

- Operating systems they use are OS release 21.7, or they will go to VS on the 168 in Sunnyvale. They use HASP release 4.0, and virtually all their remote batch revenues come through HASP.

2. The proprietary applications software which account for about 25% of their remote batch revenues are a municipal government accounting system, a manufacturing inventory control system, and some legal services packages. Proprietary language which accounts for 20% of the remote batch revenues is WYLBUR. This is now being joined by Super WYLBUR. WYLBUR and Super WYLBUR act as interactive front ends to the remote batch processor. However, by far the majority of their revenues comes from standard languages such as FORTRAN and COBOL.

- From 5%-10% of OSI's remote batch revenues are from overflow processing, about 10% are conversions from time sharing, about 20% come from replacement of in-house batch (i.e., in-house computer replacement) and the remaining 65% come from new applications.

3. Some 40% of the remote batch business comes through low speed terminals, less than 1200 bps, using Wylbur and Super Wylbur. 30% of their revenues come from 1200 to 2400 bps services, and the remaining 30% come from 4800 bps and above.

Here are some comments on some of the users of OSI.

- Seamen's Security uses OSI for basic insurance processing. It processes health and welfare claims and pension checks. It is now using a Datapoint 2200 connected to OSI's 360/65. The Datapoint is used for some local processing now, but it is primarily used to collect data for transmission to OSI.

- Fibreboard uses OSI for 360 program development using COBOL, PL/1, FORTRAN, MARK IV. They use the RJE system for inventory control, cost estimating, statistical analysis, modeling and operations research, and applications development. They spend about $6,000 a month.

- Alza uses OSI for data base management. It also uses Remote Computing Corporation for remote batch services to process accounts payable, general ledger, accounts receivable, and sales order entry. It uses another IBM based service for APL processing of financial models in an interactive mode. Total expenditures are $20,000 a month with over 90% of it being performed in remote batch.

- Pillsbury, Madison, and Sutro is one of the largest law firms in the country. They have in-house IBM equipment but use OSI when they are involved in large cases, usually of an anti-trust nature. They use OSI for document retrieval and brief preparation, using Wylbur as a text editor.

- The City of Sunnyvale uses Optimum Systems, Inc. as a utility. It uses MARK IV for file management and report writing.

- Joy Manufacturing used to have an 1130 in-house but are now going to OSI as a utility. They also use MARK IV.