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EDI SOFTWARE PROVIDER PROFILES

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Electronic Data Interchange Planning Service (EDI)

EDI Software Provider Profiles

Abstract

Electronic Data Interchange (EDI) software forms the core of successful EDI implementations. For users, chosing the right solution is not easy given the fragmented nature of the market and the range of options available. Compounding decision making is the fact that until very recently, large software firms which can provide reliable product and after-sale support have not addressed the market.

This study, a companion to an INPUT analysis of the EDI software market, profiles 16 EDI software providers, divided into three categories:

- Start-up companies whose main line of business is a generic translator product.
- Value added networks (VANS) and remote computing services (RCS), whose principal goal is to increase revenues from EDI transactions through their networks.
- Established business and manufacturing application developers who have added an EDI translation capability to existing software.

The study contains 52 pages and 7 exhibits.

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Introduction

I

Introduction

Three main vendor categories have an interest in developing and distributing EDI software.

- Start-up companies whose main line of business is a generic translator product. This group includes several consulting firms which have started a new EDI software business.
- Value-added networks (VANS) and remote computing services (RCS), whose principal goal is to increase revenues from EDI transactions through their networks.
- Established business and manufacturing applications developers who have added an EDI translation capability to existing software systems.

Accordingly, this report is divided to describe EDI software providers and products in these categories. The report focuses on software supporting the EDI X12 standard.

- INPUT believes new EDI users will predominantly use the X12 standard, while those requiring and using earlier formats have already purchased software or developed it themselves.
- Replacement software will likely support the X12 format (and possibly others), permitting a migration to X12 while allowing inter-industry trading.

While the third-party services and applications developers tend to design products that integrate easily into their own network or applications, some are marketing generic translators that compete with products from the first group.

The Transportation Data Coordinating Council (TDCC - Washington D.C.) does not consider itself a vendor. It is included in this study as a category by itself because it does participate in the market.

- TDCC provided source code to system developers who might otherwise license a translator from one of the other firms described here.
- TDCC also sells to end users who design their own translators rather than purchase from another vendor.

An analysis of EDI software vendor strategies and users' concerns and requirements can be found in a companion report, **EDI Software Markets, 1987-1992.**

An analysis of EDI service vendors' strategies and users' concerns and requirements can be found in another companion study, **U.S. EDI Services, 1987-1992.**

The Transportation Data Coordinating Committee (TDCC)

II

The Transportation Data Coordinating Committee (TDCC)

The TDCC (Washington, D.C.) developed EDI software when no other programs were available. It was first introduced in 1975.

- In January, 1985, Version 2 was introduced. The basic architecture was changed to reflect changes in the evolving X12 standards and to improve performance, which, by this time, had become an issue because of the increased volume of EDI transactions among its users.

- Version 3 is in beta test and is planned for general release in the summer of 1987. This version reflects control level changes made to the X12 standard in recent years. Also, there are enough users now with different versions of TDCC that multiple version support had to be built into Version 3 so that partners using earlier versions could communicate with each other.

TDCC supplies EDI software in source code form, which vendors and/or end users can use as the basis for building object code. Therefore, TDCC does not offer a complete software package, but rather a set of modules that a programmer uses to create an application.

Among systems integrators and application developers who have incorporated TDCC's EDI software into their applications are:

- Infotronix Systems (Holland, MI), for public warehouse applications using an EDI interface, running on Hewlett-Packard 3000 series minicomputers.

- Carolina Cypher (Greensborough, NC) for an application supporting electronics companies, running on Data General minicomputers.

- Trade Service Systems (Blue Bell, PA), for an application for electrical distributors.

- Chase International Trade (New York, NY) which substantially modified the software for use with its international letters of credit microcomputer software/service.

Because TDCC's software is written in COBOL, it will run on any hardware that supports the language.

TDCC seems to be servicing the non-IBM market in mainframes, minis, and micros among both users and systems integrators.

The table-drive software consists of a set generator and editor for transmission and a set interpreter and editor for receiving EDI messages.

- It supports over 120 transaction sets formatted to TDCC standards.
- It allows the user to redefine internal formats. Users need to write controls and interface programs to complete the table mapping.
- Editing functions check for field lengths, code validity and relationships, and mandatory segment elements and sequences.
- The internal file format will be generated by the software if the user has a batch order entry system. On-line order entry systems require editing for product numbers, validations, product availability, and other options such as cross reference files.

Users need to complete installation based on their system's requirements. Users can attend TDCC-sponsored classes to assist in customization and installation.

TDCC software is priced at $750 per CPU site per year for TDCC members and $2,000 per CPU site per year for non-members. The fee includes semi-annual updates. Volume discounts are available.

The TDCC does not wish to be considered as a software vendor *per se*. Its motivation in making software available is to propagate the market. TDCC does not get involved in how its software is put to use, nor does it collect any royalties; any derivative product belongs to the licensee. Nevertheless, TDCC has licensed a total of 175 units since 1975. These are sales that did not go to the vendors of generic software.

Full-Featured Generic EDI Software Vendors

III

Full Featured Generic EDI Software Vendors

This category is characterized by companies whose sole line of business is EDI software and, in some cases, professional services.

As noted in the profiles, several were formed by professional service vendors to focus on EDI.

A

APL Group

1. Background

The APL Group (New Canaan, CT) was founded in 1983 for the express purpose of developing a personal computer-based EDI product. The package, called APL Computer-to-Computer Document Interchange (A.C.D.I.), was introduced in early 1985. The APL Group also offers consulting.

2. APL's EDI Software

A.C.D.I. was originally designed for mainframe computers but has been downsized to run on any IBM PC/XT, AT, or compatible with a minimum of 512K bytes of memory (640K bytes is recommended).

The product is essentially translation software with integrated report generators. It provides 17 functions for document validation and acknowledgement, data cross referencing, data base maintenance, and error detection/correction.

The system is modular in design and can be configured in four basic modes.

- In the Front-End Mode the PC functions as the translator for the mainframe.
- In the Workstation Mode the PC functions as a complete, standalone, key-entry terminal.

- The Mainframe Test Mode allows experimenting with two-way host system communications, but without external correspondent document exchanges. The A.C.D.I. software stimulates the network.

- The Tutorial Mode gives potential users prototyping experience. The system is fully interactive but communications are simulated.

The system can communicate either directly from computer to computer, or via a third-party network.

- In addition, multitransmission headers are provided in the software to accomodate users who need to send one document over two or more networks with different header requirements.

- APL supports a variety of bisynchronous and asynchronous protocols.

Base license fees vary between $1,650 to $5,800 depending on configuration, not including communications peripherals and software.

3. Marketing Strategy

As part of its marketing strategy, the APL Group stresses its ability to support its customers.

- Besides offering the usual maintenance agreements, APL has incorporated an auto-diagnostics feature into its EDI translator.

- Should any technical problem occur, A.C.D.I. is designed to capture work-in-progress and create a file containing key system parameters. The service team can then analyze the file and make remote corrections.

- Also, the software's data base is designed to allow APL to upload draft ANSI documents into its data base within 5 hours. This feature presumably allows APL to rapidly provide standards upgrades to users.

Although A.C.D.I. is a generic translator package designed for virtually any ANSI or TDCC standard, marketing is targeted primarily to the grocery (UCS), transportation (TDCC), and distribution (WINS) industries where APL corporate members have previously worked.

Customers range from Fortune 100 companies to those with under $1 million dollars in revenues.

Distribution is mainly through a direct sales force. However, alternative channels are being developed:

- APL claims certification by nearly all value-added networks.

- APL is seeking inclusion on recommendation lists provided by large users to their trading partners.

- APL is marketing A.C.D.I. to software developers for private label applications.

4. Financials

The APL Group is a privately held company controlled by a few principals.

Packaged software represents about 95% of its business. Other revenue comes from professional services in mainframe software customization to run with A.C.D.I.

INPUT estimates APL Group 1986 revenues were less than $500,000.

5. Comments

APL is a technology-driven company. It remains to be seen how successful it will be in drawing up a marketing plan.

B

DNS Associates

1. Background

DNS (Lexington, MA), founded in 1979, is primarily a transportation consulting firm specializing in railroad management issues and extending into other forms of transportation.

The company has performed strategic planning, merger analyses, costing studies, and marketing and computer consulting.

DNS has over 100 clients, including most major railroads, Boise Cascade, E.I. DuPont, and others.

DNS started in EDI as a result of working with a railroad that was about to promote it to its customers. The client was going to underwrite the software, but later decided not to. DNS determined to assume the development costs itself.

2. DNS' EDI Software

DNS first introduced its microcomputer-based EDI/EDGE document handling system in May, 1986.

- The software runs on IBM PCs and compatibles.
- It requires a hard disk and a Hayes compatible modem.

EDI/EDGE is described as a complete, standalone document system providing for design, input, storage/retrieval, printing, and EDI communication of documents.

- No prior computer experience is required to implement EDI/EDGE. Some knowledge of EDI principles is necessary: this is often provided by the trading partner.
- Users can design forms for any purpose, using 'screen painting' techniques.

- The forms can contain arithmetic functions for fields, e.g., to automatically extend the unit price items the quantity, or to calculate the total price. This is said to improve both efficiency and accuracy.

Once a form is created and in use, its fields cannot be changed. However, the user may copy the form as the basis for creating a modified version.

- Information can be copied from one form to another. This allows inclusion of catalog forms, company name and address forms, etc. With a single keystroke, information can be copied, for example, from the company name form into a purchase order form.

- When a form design is complete, the user can specify one or more EDI 'templates'. These define the relationship of fields in the form to elements in a transaction set for translation or interpretation. The user selects the transaction set from a menu, then assigns form fields to the elements by a menu selection process. Tables for EDI transaction sets are stored in an internal format.

- If the data types for the EDI element and the form field are in conflict, the user is so advised. The conflict may be allowed, or the user may modify the form design.

DNS' policy is to provide any published transaction set (ANSI or TDCC) at no extra cost.

The EDI transaction does not have to use all the form's fields.

- This allows for including internal company information in forms.

- It also allows for multiple use forms; for instance, a combined purchase order/invoice can be designed. The purchase order is received via EDI, then additional information such as shipping date can be input manually and the same form used to drive an invoice EDI transmission.

- On the receiving end, EDI/EDGE translates incoming data from the standard format and puts the information into a form the receiving user has designed.

Password protection is provided. Unauthorized users can use the computer for other applications, but not the EDI/EDGE software.

EDI/EDGE includes communications software using an asynchronous error correction protocol called X.PC.

- DNS plans to implement other error correcting asynchronouse protocols during 1987.

- The communications facility includes autodialing and auto-login; once initiated, the communications session requires no attention.

The retail price is $3,000 for the first copy, including everything necessary to implement it. A maintenance plan it costs $350 per year; it provides

software and standards updates (three times per year), and hotline telephone support.

3. Marketing Strategy

Despite its origins in the railroad industry, EDI/EDGE is a designed for a horizontal market. The company is focused on companies who are first-time computer users, or who may have PCs but no programming staff to implement a complicated EDI package. Users can install the software, but some minimal training in EDI itself is required.

DNS' initial strategy is to identify the "pusher," i.e., large companies that want their trading partners to conduct business with them via EDI, who will distribute the product for them.

- The sponsoring company will buy the software from DNS and resell or give it away to customers and/or suppliers.
- This strategy gives large users the opportunity to create the desired transaction sets, building a new forms management capability in a few hours with EDI templates. Beyond that, no programming skills are required.

DNS has about 15 user installations. EDI/EDGE is recommended by DuPont, Conrail, and others and is certified by McDonnell Douglas for its EDI*Net.

An agreement was reached last spring with Distribution Science, Inc., a developer of freight bill payment authorization systems.

- DSI will distribute EDI/EDGE to its users who desire more EDI functionality that DSI offers.
- DSI's own EDI MATCH is an enhancement that is limited to receiving freight bills in the TDCC format. It runs on IBM mainframes with PCs attached as workstations.

DNS also sells directly and is pursuing accounts in the Fortune 500.

4. Comments

DNS' software approach is said to be different from most other EDI software.

- Instead of using transaction set definitions to generate input screens and reports, EDI/EDGE begins with forms design and then relates selected form fields to elements in a transaction set.
- DNS states that this provides far greater flexibility to the user.

- EDI tables are contained in the package, and their use requires only one-time definition of form field/transaction set element relationships.

EDI/EDGE is reportedly a very easy package to implement, with the software guiding the user with minimum reference to the manual.

C

EDI, Inc.

1. Backround

EDI, Inc. (Hanover, MD) was founded by the same team commissioned to design TDCC's software. It maintains a computer lab in Gaithersburg, MD.

2. EDI, Inc.'s EDI Software

EDI, Inc.'s microcomputer product, Telink, was first introduced in May, 1985, and is still in its first release. While the architecture is different from that designed for TDCC, both products are driven by the same tables. Users are required to develop or acquire translation tables referenced by the software.

- A distinguishing feature is that the software has a built-in automatic recovery system in event of power failure or if the telephone connection is broken.

EDI, Inc. has a modular pricing philosophy that provides users with flexibility in choosing exactly what is needed.

- The basic product is priced at $7,500 if the user is either a sender or a receiver, and $7,875 if the user is both a sender and a receiver. These prices include two transaction sets. Additional sets (over 300 are available) cost between $250 and $375.

- The user may purchase a variety of communications capabilities. A single-number direct-dial capability is included in the base price; others are $200 each. Asynchronous support using Cross-Talk telecommunication software is available. For $1,500 a bisynchronous 2780/3780 board can be added.

- A password security system is $500 extra.

Telink can currently stand alone or serve as a front end to a host computer.

- Versions exist for IBM PC/XT, AT, and a variety of compatibles.

- In October, 1987, EDI, Inc. plans to introduce a mainframe product that will be very similar to the micro product.

EDI, Inc. has also developed an electronics funds transfer (EFT) product as an application integrated into the basic Telink software.

- The application uses encryption and is priced at $10,000 for receiving payments only.
- Eight systems have been sold to the eight banks participating in a General Motors pilot for electronic payments.

3. Marketing Strategy

EDI, Inc. has leveraged its limited direct sales force by distributing through third-party services.

- However, EDI, Inc. lost two network distributors, GEIS and McDonnell Douglas (MDC), the former because it came out with its own product, EDI*PC, and the latter, which had private labeled the Telink product, because the company decided to discontinue software distribution.
- EDI, Inc. now services approximately 100 MDC*Telink sites, and Telink is now on McDonnell Douglas' list of certified software as well.
- Sterling Software's Ordernet distributes two EDI Inc.'s transaction sets: UCS for the grocery industry and Telink X12 for generic applications.
- EDI, Inc. has two Canadian network distributors: General Electric of Canada and Telecom Canada, a consortium of ten telephone companies. An estimated 40% of EDI, Inc.'s market is in Canada, primarily in the food industry.
- When introduced, Telink will be able to access Western Union's announced Easy Link EDI service. Western Union has 300 sales people who will augment EDI, Inc.'s sales efforts.

EDI, Inc. is selling to a wide variety of industries.

- They are particularly successful in food, although primarily in Canada.
- Telink supports the TDCC (TDCC/UCS/WINS) and ANSI X12 (EDX/CIDX/AIAG/ACCS) groups of standards.

In addition to marketing efforts through third-party services, EDI, Inc. is holding regional seminars produced by EDI Education, Inc. (Oak Park, IL). It is also setting up EDI capabilities for certain companies at no charge, hoping the company will encourage suppliers to buy the software product.

4. Financials

EDI, Inc. has approximately 21 employees. INPUT estimates the company's 1986 U.S. revenues at $1.2 million.

5. Comments

With 400 systems already installed in the U.S. and Canada, EDI, Inc. is the current leader in micro-based EDI software.

If it succeeds in introducing a viable mainframe product, it will be strongly positioned to offer users a wide range of EDI options, with expansion capabilities.

With an entry price of $7,500, however, EDI, Inc. will have to clearly demonstrate the benefits of its system over its competitors with software costing less than half as much.

D

Metro Mark Integrated Systems

1. Background

Metro Mark (Roslyn Heights, NY) was founded in 1975. Its founders had general data processing backgrounds in IBM System 3X environments and in the grocery business.

- In 1983, Metro Mark reached an agreement with TDCC to become the official supplier of EDI software for IBM System 3X line of minicomputers, an arrangement lasting two years.
- Today, Metro Mark is the market leader for minicomputer-based EDI software.

2. Metro Mark's EDI Software Products

Metro Mark's main line of business is the development and sale of a series of software packages called Translator* that operate on IBM System/3X, PC/XTs, ATs, and compatibles.

Translator*34 was introduced in 1983 and is in Release 2.0. It is priced at $5,000 with a $600 annual renewal fee. Translator*36 was introduced in late 1984. It is in Release 3.3 and is priced at $5,500 with an annual renewal fee of $600.

Translator*38 for the IBM S/38 is $6,000, plus $720 annual renewal. It was introduced in late 1984 and is Release 3.3.

Micro*Translator, was introduced in 1984. It is in Release 2.0. The initial license is $1,995 with a $399 annual renewal.

- Unlike the Translator*3X product line, Micro*Translator comes with optional standalone front-ends for forms processing.
- The Grocery and Motor Facilities (for motor carriers) programs sell for $700 each, with a $140 annual license renewal fee.
- General Business Facility ($1,995, plus $399 renewal) is also being marketed under IBM's Vendor Logo Program. It creates up to nine data

entry screens per document, recalls screen documents, allows data entry/updates, and prints documents.

Like TDCC software, from whom Metro Mark originally licensed its software modules, Translator products are table-driven and written in COBOL.

- Translator has user definable system parameters. It's table-driven, as opposed to hard-coded, programming allowing a user to communicate with any partner using different message standards (called the multiple message standards capability) and to communicate with partners using current or older versions of the same message standard (called multiple version level capability).

Integration is not tight between application documents and the translator.The software does not access user files directly nor, for security reasons, does the company wish to offer this capability. The interface to applications is the Transaction Data File, (TDF) which supports all applications.

- The TDF serves as an interface between the translator and the user's application system. It also prints the TDF file and record structure for any transaction set.

- The user determines which documents the company wishes to send and receive at the time of installation. Users can select from a menu what is needed from the TDF, and the software prints a hard-copy of the transaction sets. It reportedly takes one to two days to input this information and set up an individualized system. There are no fees charged for this installation.

All Translator products automatically create and generate acceptance/ rejection advice.

Translator supports all TDCC and ANSI X12 standards and derivatives, and the company is prepared to support international EDI standards as they develop.

Users configure Translator products to communicate directly between partners, through any third party, or through multiple third parties. This is accomplished by filling in parameters through the menu system provided.

- Communications facilities are included in the 3X line of software, but the user must supply the appropriate peripherals.

- The basic Micro*Translator product provides facilities for asynchronous and non-2780/3780 bisynchronous connections. An optional 2780/3780 emulator board is available at $1,345 for 2400 baud, and $2,195 for 4800 baud.

Installations range from standalone and front-end PC translators to integrated minicomputer translators interfacing existing user applications systems.

3. Metro Mark's Marketing Strategy

No particular industry is targeted by the company. Metro Mark has 100 installations in every industry, including tobacco firms.

An estimated 75 to 80 percent of all sales are direct, with the balance through distributors and systems integrators.

- Superior Software (Augusta, GA) is a Metro Mark turnkey vendor that has added an EDI interface to its grocery broker system.
- Dan Downing Associates (Orange, CA), an IBM System/3X systems integrator, distributes and incorporates Translator products.
- IBM has distributed Metro Mark through its Vendor Logo Program since November 1986. Support is provided by Metro-Mark.
- The software has been certified by McDonnell Douglas, GEIS, and Kleinschmidt, and recently, Metro Mark signed with Western Union for similar certification.
- The company claims it is the only EDI software vendor on the American Warehousing Association's (AWA) recommendation list. It is also recommended by large users such as Toys 'R Us, Service Merchandise, and RCA. The company says that using a large user as a distributor makes sense in niche strategies, but not for generic approaches.

Metro Mark, which already distributes in Canada through CrownTek, is investigating opportunities in Australia and Israel.

4. Financials

INPUT estimates Metro Mark's 1986 U.S. revenues for EDI software to be less than $500,000.

The company is apparently not generating revenues from professional services; any customization is included in the original license plus annual renewal fees.

5. Comments

Metro Mark is one of the early entrants in the EDI software market and has established a niche for itself in the minicomputer range. Metro Mark is the only provider of EDI software in the entire System/3X line.

- ACS Network (Concord, CA) has also entered the IBM System/3X EDI software market. ACS, profiled in Chapter V, has its origins in the apparel manufacturers industry, but is offering a generic product that will compete directly with Metro Mark.

- Several other software developers write applications for IBM System 3Xs that provide some EDI capability. Louis A. Wright and Associates (Plymouth, MI), for example, offers an EDI module for its manufacturing system.

Metro Mark seems to be marketing its EDI software primarily on price/performance, not on differentiation of features.

- The user receives all approved transaction sets at no additional cost, plus others as they mature, while competitors charge for updates.
- In the case of Metro's mini products, users also receive communications software as part of the package.

E

Program Science Incorporated (PSI)

1. Background

PSI (Ridgefield, CT) is a computer consulting firm incorporated in 1980. The company markets itself as a turnkey service providing systems design, programming, education and training, maintenance, technical support, and equipment.

PSI traces its EDI involvement to a maintenance agreement for the now defunct ESCORT system managed by Control Data Corporation for the electronics industry. The company developed CDC's Redinet EDI service and provides technical support to Redinet customers.

2. PSI's EDI Software

PSI introduced the X-CHANGE EDBI processor in September 1985. It runs on IBM PC/XTs and compatibles using DOS 3.0 or above. Printouts are optimized by using an IBM Pro Printer.

X-CHANGE is a menu-driven system which handles purchase orders, purchase order acknowledgements, and invoices.

- These documents are in a standardized fixed format that the software translates to ANSI X12 format.
- X-CHANGE does simple edits of user entries for correctness as to date, alpha/numeric fields, and field length.
- Other features include help screens, functional acknowledgement, and a conversion feature that enables users to prepare transactions in a minimum of keyboard time by passing on common information to various documents being prepared.

X-CHANGE supports asynchronous communications without modification and will support bisynchronous communications with mainframes and minicomputers with the addition of optional import and export facilities.

X-CHANGE software is priced at $3,500, and the company will bundle it with equipment for a turnkey system priced under $7,000.

PSI developed a computer-aided instruction (CAI) product, Redi-Set-Go!, priced at $195. The package can be used for general education and as a guide to developing in-house EDI software.

- The package includes four starter programs for sending and receiving data.
- Two of the modules are suitable for executive level presentations on the benefits and functions of EDI. They cover the reasons for EDI, ANSI X12 standards, and communications.

3. Marketing Strategy

PSI markets directly to manufacturing firms and to distributors.

- X-Change and Redi-Set-Go! have been endorsed by the American Supply and Machinery Manufacturers Association, and the National and Southern Industrial Distribution Associations.
- PSI is also seeking the endorsement of large users who will recommend X-Change to their trading partners.

To date PSI is claiming some 100 installations of X-Change; most are in the U.S., with some Canadian sites that communicate with the U.S.

4. Financials

INPUT estimates that PSI's total 1986 U.S. revenues were under $500,000, with approximately $300,000 attributed to EDI software, the rest to professional services. The company has four employees.

5. Comment

PSI has been pursuing an unallied strategy, only seeking the endorsement of industry associations and large users. To date, their limited sales force has been successful at making single sales, but to be successful in the micro software business, PSI will need volume sales in order to grow.

F

York & Associates/EDI Solutions, Inc.

1. Background

In 1986, EDI Solutions, Inc. (Minneapolis, MN) was spun off as a wholly-owned subsidiary of R.J. York Associates, a management systems consulting firm founded in 1980.

EDI Solutions is dedicated to the development of off-the-shelf EDI products.

2. York's EDI Software

EDItran, which was developed in 1985 for 3M Corporation, is a mainframe translator that runs on IBM 30XXs and 43XXs under MVS.

The software has been ported to an IBM/System 38 as well as an HP 3000 for specific clients. These are now being productized.

All products are priced the same: $18,000 for license and first year's maintenance; $2,000/year for further support, including phone inquiries, updates and enhancements. Volume discounts are available for multiple sites.

EDI Solutions says its future products will take a different design approach from MSA/TranSettlements' EDI Expert discussed in Chapter IV.

- The company plans to go beyond the translator to develop generic interfaces making it easier for users to place EDI formatted data into their own applications.

- MSA, according to York, is tacking TranSettlements onto each application. York makes an analogy between EDI and a corporate mail system. MSA's approach, they say, is like creating a separate mail room in each department; each one has to distribute to every other one.

3. Marketing Strategy

Ten companies are using EDItran at 30 computer sites. INPUT estimates as many as a dozen are 3M's.

Marketing is being done through LEK Product Marketing (Bloominton, MN), a software marketing company.

EDI Solutions wants to create a one-stop-shop solution for EDI. Company officials say users have a variety of integration problems for which York's company is developing generic solutions covering communications, applications, and software needs.

4. Financials

With 15 employees, INPUT estimates R.J. York Associates' 1986 revenues to be $750,000, with EDI Solutions representing 10% of their business. Most of York's installed base represents custom work that INPUT classifies as professional services.

5. Comment

York has an uphill battle to unseat TranSettlements, which has dominated mainframe EDI software market to date. As a generic translator EDItran seems to be meeting limited success. The true test will come when EDI Solutions introduces its products promising generic interfaces to applications. Then it must compete with the MSA/TranSettlements alliance.

Exhibit III-1 summarizes the features and prices of these generic EDI software products.

EXHIBIT III-1

FULL-FEATURED GENERIC EDI SOFTWARE

VENDOR	PRODUCT	PLATFORM	PRICE	COMMUNICATIONS	FORMS PROCESSING
APL	A.C.D.I.	Micro	$1,650-$5,800	Asynch Hook, or Bisynch Board Extra	Integrated Report Generators
DNS	EDI Edge	Micro	$3,000	Dial-Up/Hook to Packet Net Included	User-Created Documents Multiple Trans-actions on Same Form
EDI, Inc.	Telink	Micro	$7,500	One Direct Dial Connection	Any Two Transactions Sets
Metro Mark	Translator* 34/36/38	Mini	$5,000-$6,000	Bisynch Software Included; Board Extra	All Transaction Sets
	Micro* Translator	Micro	$1,995	Includes Asynch or Non-2780/ 3780 Bisynch Hook User Configured Parameters	Grocery, Motor, General Business Facilities (Extra)
PSI	X-CHANGE	Micro	$3,500	Asynch Connection	Three Fixed Format Documents
York	EDItran	Mainframe	$18,000	None	Creating Inter-faces to User Applications
		Mini	$18,000	None	

Note: Base price is for the translator; communications column indicates how much capability is included in base price (does not indicate full range of options). Form processing column indicates whether screen formats are fixed or user-definable and how many transaction sets in base price.

Third-Party EDI Service Vendors

IV

Third-Party EDI Service Vendors

A

Overview

Third-party EDI service vendors fall into two basic categories: value-added networks (VANs) and remote computing services (RCS). These companies and their range of services is the topic of the INPUT report, **U.S. Electronic Data Interchange Services 1987-1992.**

Three VANs are currently in the EDI market: General Electric Information Services (GEIS), McDonnell Douglas, and IBM. Telenet has agreed with Sterling Software's Ordernet division to private label and resell Ordernet's services. Other VANs (CompuServe, Automatic Data Processing's Autonet, and others) are expected to enter the market.

- GEIS is the most aggressive EDI service in the software market. It has developed a line of personal computer-based products as well as a mainframe translator. GEIS is also marketing industry-specific packages developed by smaller companies.
- Other VANs are not profiled here because they have not developed their own EDI software product:
  - McDonnell Douglas formerly sold third-party software, but now limits its involvement to a software certification program.
  - IBM distributes two third-party packages from American Business Computer and Metro Mark. These companies are profiled elsewhere in this report. To date, IBM has not developed either its own EDI translator or EDI-related applications packages. This situation may change.

Like VANs, RCS firms, with one possible exception, are primarily in the services business. If they have developed an EDI software product, it is in order to augment transaction volumes on their networks.

- In response to user demand, Control Data Corporation (CDC) offers the bare minimum in a micro software translator at a very low cost.

- Railinc offers a microcomputer-based translator package that it hopes to distribute through its user base, the major railroads.
- Sterling Software's Ordernet is marketing two products, EAGLE Workstation (for hardware manufacturers and distributors) and Ordernet Workstation (for drug companies and their wholesalers).
  - These turnkey systems consist of form-fill document processors that translate from English into EAGLE and ORDERNET formats.
  - They cannot currently translate to other formats without going through Sterling's network.
- TranSettlements is the exception to the rule. It derives only 20% of its revenues from network services, with the rest from software sales and professional services. It is currently the dominant participant in the EDI mainframe software market.

B

Control Data Corporation (CDC)

1. Background

CDC (Minneapolis, MN) markets computer equipment, associated maintenance services, computer services, and financial services.

CDC's computer services, software products, professional services and turnkey systems are dispersed among several operating units, including the Business Services Group, of which EDI is a part.

2. CDC and EDI Software and Services

CDC's EDI processing service, the Redinet Intercorporate Business Transaction System, was introduced in Spring 1985 under a joint marketing agreement with AT&T, whose Accunet transmission network is being marketed as RediAccess.

Mailbox and related services are RediNet's core business. However, customers expressed needs for one-stop-shopping, and in particular for translator software. In response CDC developed Redi-Micro, which was beta tested through most of 1986 and officially announced in December.

Redi-Micro runs on IBM PC/XTs, ATs, and compatibles with 256K memory and 10 Mbytes of hard disk. Transmission can be from modem to modem or via CDCs Redinet service.

Unlike other EDI software vendors, who have either linked a translator into business applications or created a generic product that can support a large variety of document types, CDC chose to limit itself to three X12 documents.

- For $500 a user can purchase either a purchase order, invoice, or materials release (including shipping notice) module. For an additional $200, either an asynchronous or bisynchronous module is provided.

- In addition to this already low price, Redi-Net will offer substantial discounts for volume discounts.

3. Marketing Strategy

It is Redinet's overall philosophy that it will address every industry that it can. Its software strategy is consistent with this view.

- The modules are generic and geared towards smaller companies and firms seeking to jump aboard the EDI "bandwagon" without delay. The products are particularly useful to small firms needing to communicate with larger trading partners.

- While no particular industries are targeted, Redinet has been endorsed by the American Supply and Machinery Manufacturer's Association, the National Industrial Distributors Association, and its sister organization, the Southern Industrial Distributors Association.

- Redi-Micro is being distributed directly by CDC's salesforce. There are no agreements at this time for either CDC to distribute other vendors' software or for other vendors to distribute CDC's. CDC does, however, have a standing offer to all software vendors: It will provide two free mailboxes for developing interfaces to Redinet.

Redinet has under 100 customers. In market testing, over 50 copies of Redi-Micro sold in the first 90 days after release.

4. Financials

Control Data has reported heavy losses (primarily in the equipment area) and there had been earlier speculation the company would be acquired.

CDC officials maintain that the company's financial situation is much improved and that CDC is committed to the EDI business as it works to return to profitability. The Business Services Group is said to be profitable.

INPUT estimates that CDC Redinet had under $1 million in revenues in 1986. Since Redi-Micro was not introduced until December 1986, it is assumed that, with the exception of its beta sites, CDC posted no revenues from EDI software that year.

5. Comments

CDC is not an active participant in the EDI software market. The company developed an inexpensive product to satisfy demand in its own user base. It is apparently not seeking to penetrate new markets with the software.

C

General Electric Information Services (GEIS)

1. Background

GEIS (Rockville, MD), established in 1984, is a division of General Electric. It provides the Mark*Net VAN, available in over 750 cities worldwide, with over 600 access points in the U.S.

GEIS' corporate philosophy is that the company will not enter any business where it cannot achieve a dominant or near dominant position.

2. Services

GEIS offers a broadly-based VAN service, with applications supporting international commodities, securities and currency markets, and international banking. Other industries served include manufacturing, shipping, retail, health care, and computer hobbyists.

GEIS provides access to a variety of processing services including a national clearinghouse for health care insurance claims, financial institution automated clearinghouse services, and payment systems.

Quik-Comm electronic mail service includes WPXchange, a storage and retrieval capability linked to the E-Mail service featuring word processing and document translations between incompatible computers.

3. GEIS and EDI

As did many information service companies, GEIS experienced difficulties during 1985 prior to their decision to enter the EDI business. As a result, the company experienced staff cutbacks and a restructuring with tighter business focus. In late 1986, after being in the EDI business for nine months, GEIS had another reorganization, including the renaming of the EDI area, now called Worldwide Intercompany Logistics Business.

GEIS works with industry groups to develop alliances, modify standards, and win endorsements for its EDI service. The company operates a general purpose EDI network and a medical insurance claims service and has developed an industry-specific EDI network, Transnet, for the Motor and Equipment Manufacturers Association (MEMA, Englewood, NJ).

GEIS also has several EDI customers using its network facilities for closed, private systems.

GEIS has developed EDI software to facilitate use of its EDI*Express service.

- EDI*Express provides domestic and international mailbox service supporting ANSI X12, TDCC, international standards, and private formats. Various communications access methods and protocols are supported.

- EDI*Express also supports exporters, freight forwarders, banks, carriers, custom house brokers, and others involved in international trade. In this market, GE calls EDI*Express, Trade*Express. It integrates EDI, electronic mail, bulletin boards, computer conferencing, and trade data base retrieval capabilities.

4. GEIS' EDI Software Products

GEIS has two personal computer-based EDI products: EDI*PC and the International Workstation. These will eventually evolve into a new EDI workstation product for both domestic and international trade. GEIS also offers a mainframe EDI product, EDI*T.

EDI*PC, introduced in April, 1986, and now in Release 4.0, is composed of three distinguishable layers of software.

- The communications layer provides the ability to send and retrieve files using a clearinghouse, preferably EDI*Express. EDI*PC supports 2,400 baud asynchronous connections, using Hayes modem conventions and other types of links.

- The envelope processing layer provides flat file translation. It recognizes the EDI standards and can distinguish which variation of the standard is relevant. This layer also has control and tracking functions that provide status reports on documents.

- The document processing layer is the data entry system that creates purchase orders and related ANSI documents. It allows the user to create, edit, and print a document. It is the most detailed layer. The software will be different for each standard and each document. EDI*PC supports all ANSI 84 and 86 document types and some ANSI subsets, such as the Joint Interest Billing document for the petroleum industry.

- EDI*PC is priced at $950, including documentation and telephone support. Maintenance is $180 per year. On-site installation can be supplied, but is generally not needed.

The International Workstation, released in the Spring of 1987, is a stripped down version of EDI*PC. It is composed of a communications layer and a limited envelope processing layer.

- The user provides the document processing layer. This can be either developed in-house or purchased commercially. For this purpose, GEIS will provide SPEX*US, a trade documentation package purchased from a United Kingdom company and modified for the U.S. market. SPEX*US prints air waybills, shipper's export declarations, and invoices.

- International Workstation software receives any TDCC or international standard GTDI document, wraps it in a GE envelope, and sends it to EDI*Express. The International Workstation acts as the PC manager by tracking what has been sent and providing an activity log.

- Unlike EDI*PC, standards translation is done on the GEIS network, not by the software. To this extent, this product does not strictly fall within the scope of INPUT's current definition of EDI software and is therefore not included in the U.S. market forecasts.

Version 5.0 of EDI*PC is in development. It will de-couple the document processing layer from the communications layers. It is expected to be released in 1988. New features will improve the user interface, provide limited user definable data entry, and allow for customization report generation.

A new workstation, as yet unamed, is scheduled for a 1988 introduction. It will provide modules in all three layers, replacing EDI*PC and the International Workstation. The plan is to layer the earlier products both logically and physically for users involved in international trade and also using ANSI transaction sets. Users will be able to select specialized modules to produce specific documents.

EDI*T is the company's mainframe translator. The initial release was developed in 1985 for the National Retail Merchants Association (NRMA).

- Release 1.0 translates between fixed-position and X12 variable length, delimited records. It provides limited compliance checking. Some 20 systems have been installed on IBM and Burroughs equipment.

- GEIS renewed its emphasis on this product with the Spring, 1987 introduction of the commercial version of EDI*T, Release 2.0.

- The new version supports all ten ANSI X12-1986 transaction sets, as well as the draft standard Joint Interest Billing Exchange (also called Operating Statement), a document originally used for joint ownership of oil drills. This standard will also be used by the real estate industry.

- Future 1987 enchancements include the addition of an envelope header generator and automatic functional acknowledgements. TDCC transaction sets will also be offered later in the year.

- EDI*T has been priced at $5,000, plus a $1,000 annual maintenance fee. A July 1987 announcement is expected, however, that will reflect the enhancements found in Release 2.0. The new price will be in the $10,000 range. Installation and applications integration will be billed as professional services.

GEIS' EDI support program is carried out by the EDI Services Organization.

- The staff provides trading partner consultation, documentation, training guides, professional services, and a toll-free number EDI help desk.

- Software updates are supplied on disk. GEIS is working on electronically transmitted updates.

5. Marketing Strategy

The GEIS network of domestic agents and international distributors all market EDI services and software.

- The company has organized an internal sales and technical group for each vertical market of interest - retail, automotive, electronics, heavy equipment, trade, and international - which cuts across all industries.
- The objective is to tie in each industry group to others, thus becoming more horizontal.

The EDI concept is sold to the largest members of a trading group, using a consultative process. GEIS then uses telemarketing and other low-cost methods to sell EDI*Express to smaller accounts in the group.

Approximately half of GEIS customers start with the PC approach. It is intended as a migration step, where appropriate, to mainframe products.

- EDI*T is only being sold by a direct sales force to horizontal markets.
- EDI*PC and International Workstation have both direct and indirect sales forces.

GEIS software strategy is to generate additional network revenue at the least cost.

- To this end, GEIS is willing to negotiate with other software vendors to integrate their products with GEISCO's communications and translation layers.
- GEIS will also give a third-party software developer the right to sell his own translator software into a given market, in effect giving up a market for EDI*PC or EDI*T in exchange for the developer marketing EDI*Express services.

GEIS has signed ACS/Apparelnet (New York/Concord, CA) and American Business Computer (Farmington Hills, MI) as sales agents to the apparel and automotive industries respectively.

ACS and ABC are profiled in Chapter V.

6. Financials

INPUT estimates GEIS' 1986 VAN revenues to be in the $40 to 50 million range, with EDI (Logistics) accounting for approximately $6.5 million. 1986 U.S. revenues from EDI*PC and EDI*T were under $100,000.

7. Comment

GE Information Services has a clear EDI strategy intended to capture a large share of the services market. Software products play important and

diversified role in this strategy. Its own EDI software is priced low to get users started in EDI, and the company will forego market share in software revenues to a third party in order to increase its own network revenues.

D

Railinc

1. Background

Railinc Corporation (Washington, D.C.) became a data processing subsidiary of the Association of American Railroads (AAR) in March 1982. It started as a service exclusively for railroads and later added services for other users such as the big three automakers, other large shippers, private fleet managers, and suppliers.

Railinc operates and maintains a private network called TeleRail Automated Information Network (TRAIN II) that connects the primary computers of the major railroads.

2. Railinc and EDI

Railinc's two principal EDI services (which are really logistics services) are SAM (Shipper Assist Message) service, for high-volume users, and CARLO (Car Location Message Dial-In Service) for low-volume needs.

In addition to car location messages (CLMs), administrative and tracing messages, waybills and invoices are exchanged between carriers and shippers, using TDCC, ANSI X12, and standards developed by Railinc.

3. Railinc and EDI Software

EDI/SYNAPSE, Railinc's principal EDI software product, was introduced in mid-1986. It will automatically dial Railinc's network, send or receive data, and create headers and trailers for Railinc messages.

- The software runs on any IBM PC-compatible machine with MS-DOS 3.1 or above, and at least 320K memory. A hard disk of 10M or more is recommended.
- The package is currently priced at $1,995, including asynchronous communications software. For bisynchronous communications, the user must pay approximately $1,000 more for software and a board with built-in 2400 baud modem. Additional fees are charged for maintenance and customization.

EDI/SYNAPSE handles all EDI standard translations, storage, retrieval, and the sending or receiving of data. In its marketing literature, Railinc stresses the system's flexibility and the fact that it is tailored to support any industry standard, or subset, including private ones.

- TDCC transaction sets are included with the package; ANSI X12, ISO, and others can be formed by selecting elements from the system's data dictionary, a series of tables that translate the standards.

- A user can use the dictionaries provided, or EDI/SYNAPSE can create customized data dictionaries.

- Railinc will also develop customized dictionaries as a professional service.

- The data dictionary in the EDI/SYNAPSE software can be programmed to ignore specific elements of transmitted data in which there is no interest.

- The software allows users to transmit data to other EDI/SYNAPSE users who do not have the required data dictionary.

  - The data dictionary can be sent preceding the data.

  - EDI/SYNAPSE will load the transmitted data dictionary and properly format the data.

- In addition, screens and menus can also be individually tailored. Help screens can be created for every data element on the screen. The user can perform other tasks on the PC while transmitting in the background.

- Password protection is provided with up to 99 access levels.

Another Railinc EDI product, but one that does not support the X12 variable length formats is CLM/PC.

- CLM/PC uses AAR/NITL (Association of American Railroads/National Industrial Transportation League) standards established in the 1960s. It is designed for tracing railcar shipments.

- The package is priced at $1,500, including asynchronous communications software. For an additional $1,150 users can purchase bisynchronous software and an add-on board plus a 2400 bps modem. Car location messages are routed to the users electronic mailboxes hosted on Railinc's computers.

4. Marketing Strategy

Railinc is attempting to market EDI/SYNAPSE beyond the railroad industry.

- However, all of the 15 systems currently installed are current users of Railinc's network.

- The company is planning to market its software through distributors and primarily large users, such as the railroads. The plan is to sell in large volumes, perhaps 100 units at a time, using this channel.

E

TranSettlements, Inc.

1. Background

TranSettlements (Atlanta, GA) is an EDI communications and software provider. It was established in 1977 as a subsidiary of Transus (formerly Georgia Highway Express), a family-owned company.

TranSettlements is the major EDI service provider to the motor transportation industry. TranSend services are used by trucking companies, major shippers, and service organizations in the industry.

The company provides consulting services, off-the-shelf software, software customization, and training.

2. TranSettlements and EDI

The company traces its EDI involvement to the 1979 introduction of an EFT automated payment transfer service, followed by an electronic invoicing service (using proprietary formats) in 1982, and freight invoicing using TDCC formats in 1983.

In 1987, Transend was improved to support all current EDI transactions.

Communications are handled through dial-up WATS lines and most protocols are supported. SNA protocol support is under development for 1988 implementation.

TranSettlement's EDI processing is done at the American Trucking Association's computer center in Alexandria, VA.

3. TranSettlements and EDI Software

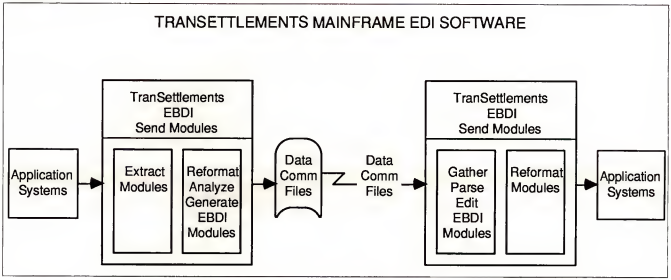
TranSlate, introduced in 1982, is written in ANSI COBOL-74, which allows it to run on a variety of equipment, including all IBM 43XXs and above. It also runs on Sperry, Honeywell, Burroughs, DEC VAX, HP 3000, and Tandem computers.

TranSlate is designed to integrate into a company's applications and communications systems, as illustrated in Exhibit IV-1.

- A system table provides information essential for creating an appropriate transmission envelope for communication directly to a trading partner or third-party service. It also provides and updates the current transmission session number for audit control purposes.
- As a third-party vendor of network processing services,TranSettlements recommends 3780 bisynchronous emulation at 4800 baud using standard Bell 208B compatible modems.

Source code is provided to allow integration with existing application systems.

EXHIBIT IV-1



- The interface between the TranSlate software and the user's internal files is accomplished through skeletal programs.
  - Skeletal programs are incomplete, requiring additional code for execution.
  - Sending modules select and extract, reformat/analyze, verify, and generate appropriate transaction sets and select the communication media desired.
  - Receiving modules gather, edit for acceptance/ rejection, and translate transaction sets into the user's internal systems formats.
- File descriptions, data element moves, and report definitions are performed through COBOL copy modules which are included. This allows updates and enhancements with minimum impact on customized code.
- Forty of the most common transaction sets are now supported.
- The company claims there is normally no need to customize modules other than the skeletal programs.
- Installation requires three to five days of professional services, which is billed at under $1,000 daily.

TranSlate is provided under a permanent licensing agreement for $25,000 for the full package. This includes source code and all current standard tables and transaction sets. Nearly available is a basic package with two transaction sets, related utilities, and main modules, priced at $15,000.

- Additional site licenses are $12,500 for the full package and $7,500 for the basic package.
- For an annual fee of $2,750, the software is updated or enhanced twice a year and ongoing telephone support is provided.

4. Marketing Strategy

TranSettlement's software marketing strategy is to provide off-the-shelf products for as many mainframe computer brands as possible. The company does not now offer its own micro software.

Although TranSettlements claims it is not targeting any specific vertical markets, it is the major EDI service provider for the motor transportation industry.

- TranSlate software, however, supports transportation, automotive, grocery, warehousing, electrical equipment, and other industry standards.

- TranSlate has been accepted by over five of the Fortune 10 and many other large multinational corporations. INPUT estimates there are approximately 100 installations in the U.S.

  TranSettlements markets directly, and it licenses TranSlate to other software developers for integration with their applications.

- MSA entered an agreement with TranSettlements in November of 1986, acquiring the rights to modify and integrate TranSlate with MSA's applications software and to market it under the name "Expert EDI".

TranSettlements also has a marketing agreement with Distribution Science Inc. (Des Plaines, IL), developer of Match Pay, a freight bill rating and payment authorization system. DSI itself offers limited EDI capability; Match Pay can receive TDCC formatted freight bills. DSI will refer its users to TranSettlements if they require more EDI capability.

TranSettlements also has a marketing agreement with Supply Tech (Southfield MI), a developer of micro-based EDI products. CrownTek, a Canadian processing firm, was an agent in the past.

5. Financials

Although INPUT recognizes TranSettlements as an EDI service provider, only 20% of its business derives from transaction processing, with the rest classified as professional services and software.

With approximately 29 employees, INPUT sizes TranSettlements' total 1986 U.S. revenues at over $1 million, including maintenance fees.

6. Comment

Until recently TranSettlements has enjoyed a virtual monopoly in the mainframe translator market.

It remains to be seen how it will be impacted by the entry of new players, such as GEIS with its EDI-T. Curiously, GEIS also has a joint marketing agreement with MSA.

Exhibit IV-2 summarizes the features and costs of EDI software from third-party services.

EXHIBIT IV-2

EDI SOFTWARE PACKAGES FROM SERVICES

VENDOR	PRODUCT	COMPUTER PLATFORM	PRICE	COMMUNICATIONS	DOCUMENT PROCESSING
CDC	Redi-Micro	Micro	$500	Extra	Basic
GEIS	EDI*T	M/F	$10,000	Extra	Compliance Cheating Only
	EDI*PC	Micro	$950	Asynch	Fixed Screen
Railinc	EDI/ Synapse	Micro	$1985	Asynch	None
TranSettlements	TranSlate	M/F	$25,000	None	User-Defined

EDI Software from Applications Vendors

V

EDI Software from Applications Vendors

This category covers vendors who do not provide EDI network services and who offer applications other than EDI in their catalogues.

- Generally, EDI software is not their primary application.
- Rather, vendors in this category have added EDI functionality to their other software.

Several of these vendors are focused on specific vertical industries - typically manufacturing, with a number targetting the automobile manufacturing industries. Others market horizontal business applications.

Since this study focuses on software supporting the X12 standard, several companies offering packages using private or industry-specific standards, such as the Automotive Industry Action Group (AIAG) formats, health care insurance, or other EDI formats, are excluded.

A

Industry-Specific Applications Vendors

1. American Business Computer (ABC)

a. Background

ABC (Farmington Hills, MI) was founded in 1976 as a developer of information management software for manufacturing and distribution industries. Its initial growth was due to its pioneering work in the field of automotive data communications, and it has nearly 1000 installations using these products.

- Complementary and additional software packages followed its product called "Data Comm," ABC's fixed-length data communications software. These attracted a diverse range of customers--from small manufacturers to Fortune 500 companies.
- Custom programming, the cornerstone of early ABC product development, continues to be offered.

The company markets its EDI software, along with the Data Comm package, as "communications management" products. Its other product lines are Manufacturing Management (including bar coding) and Business Management.

b. ABC's EDI Software Products

ABC's basic EDI product is called Electronic Document Exchange (EDE); it is a micro/mini system that can operate as a standalone system or be integrated with ABC's other applications.

- EDE, like other ABC software, is written in Workstation Basic, an ANIS-compatible compiled language which allows programs to be executed on a variety of computers.
  - EDE has been ported to several operating environments: MS/PC DOS, UNIX System V, and SCO/Xenix systems.
  - It, as well as other ABC software systems, can be used on the AT&T 6300, the AT&T 3B series, IBM PC/XT and ATs, COMPAQs, the Novell Network (a PC local area network), and others.
- In addition to quotes, purchase orders, invoices, material releases, advance shipping notices, and receiving advice, the program can handle shipping schedules. ABC has developed and standardized all of the document and data entry screens. This means users do not have to set any document formats.
- EDE requires a 2780/3780 emulator (such as CLEO 3780+) and a Bell 201C compatible modem. The system can be used in a point-to-point configuration or with third-party networks.
- There is also an Electronic Mail module that enables trading partners to communicate unformatted information such as memos, letters and inquiries electronically.
- ABC also offers a Price/Sales Catalogue feature that allows sellers' product catalogues to be available to any of their trading partners.
- EDE is priced between $3,000 and $5,000 depending on configuration.

VariComm is a subset of the EDE program that is specifically for suppliers to the automotive and other transportation equipment manufacturers. It was first introduced in February 1986.

- VariComm handles a more limited set of documents than EDE. Documents are formatted and transmitted in the ANSI X12 message standards, and in addition, VariComm meets AIAG standards.

- The software runs on the same equipment (minimum requirement 256K RAM memory and 10MB hard disk) and operating environments as EDE. It also transmits data point-to-point or via a third-party network.

- VariComm prices range from $3,000 to $5,000, including documentation, training, and a 90-day warranty.

ABC's mainframe product is XLT12, first sold in October 1986.

- XLT12 is designed to integrate with existing business applications and with EDE. A firm can host the mainframe software at its central office and have divisions communicate EDI information to the mainframe using micros.

- XLT12 operates on IBM 30XX and 43XX mainframe computers using the MVS Operating System with VSAM/QSAM file access. Development is underway to adapt the system to other operating environments.

- The table-driven translator converts files from a company's internal data format to the ANSI X12 format. A company can set up separate translation tables for each trading partner.

- To date, XLT12 handles the same documents as EDE, except shipping schedules. Additionally, it supports remittance advices.

- Other features of ABC's XLT12 include interchange control segments, delimiters, auditing of the translation process, automatic functional acknowledgement, user definable data formats and installation, consultation, and system documentation.

- XLT12 is priced at $24,000 to $20,000 for the translator and $4,000 for required installation, training, and applications integration. Implementation takes one week. The current version of X12 standards are included and updates are available.

c. Marketing Strategy

ABC claims to be a "single source" information processing company. It provides both hardware and software as well as support services, including education and hardware maintenance, even if the equipment was purchased from another vendor. However, ABC does not provide network services, but is a GEIS EDI agent.

The EDE system was specifically designed to provide communications and translation capabilities to all industries. Its modular design allows a company to tailor a communications system to meet unique document processing needs.

EDE has approximately 50 users; VariComm, 100; and XLT12 is being used by three Fortune 100 companies.

ABC has established network interfaces with the major VANs offering EDI services.

- REMEDE is the name EDE is being marketed under in the IBM Vendor Logo Program. It is designed to run on IBM PC/XTs or ATs with 640K RAM of memory and a 20M hard disk. There is also a multiuser version. REMEDE also requires an IBM PC Information Exchange Interface and a 1200/2400 bps modem.
- ABC was the first company to be selected under GEIS' Sales Agent Program. Unlike the IBM program, where IBM markets the software developer's product, ABC will market and install GEIS' EDI*Express service to users of EDE software.
- American Business Computers is also on McDonnell Douglas EDI*NET list of certified software suppliers.

d. Financials

ABC is primarily a software development company, but it also resells hardware and provides professional services.

Based on the number of installations of software products that support ANSI X12 and AIAG standards, INPUT estimates ABC's 1986 U.S. revenues at approximately $600,000 for EDI software.

ABC's EDI software revenues will be augmented by sales commissions and professional services it performs as a sales agent for GEIS and through IBM's distribution of REMEDE.

e. Comment

ABC is a leader in supplier communications software (not limited to EDI) within the automotive industry. Its sales agent position with GEIS and its status in IBM's Vendor Logo program make it a strong candidate to maintain a leadership position in EDI software for the auto industry. It remains to be seen if it can penetrate other segments of the manufacturing industries.

2. Apparel Computer Systems/ACS Network Systems (ACS)

a. Background

Apparel Computer Systems, Inc. (New York, NY), founded in 1978, is the leading supplier of software and services to the apparel industry.

The company's products, primarily designed to run on IBM System/36 and /38 minicomputers, provide companies with integrated management tracking and decision support tools to control all aspects of business and manufacturing operations, including a remote entry sales information system for IBM PCs and a shop floor control/piecework payroll system.

ACS Network Systems (Concord, CA) was originally founded in 1986 as the company's Network Division to develop products for intercompany, rather than intracompany, data flow.

- It was called Apparelnet after its first product, an on-line data base network for the sewn products industry.
- In March 1987, the division changed its name to ACS Network Systems, marking its new data communications products and its expansion into other industries.

b. ACS' EDI Software Products

In April 1987, ACS introduced EDI/36 and EDI/38; they are billed as communications and translation software to enable IBM System/36 and System/38 computer users to participate in EDI over third-party public or private networks.

These products each consist of three modules:

- The Document Translation Module translates incoming documents from the ANSI X12 format into the System/36 or /38 user-defined format and translates outgoing documents from user-defined into X12.
  - The module has user-maintained tables that convert miscellaneous customer information (product codes, shipped-to codes, etc.) into trading partners' internal codes.
  - The translator is designed to interface with customers' flat files. This is said to make it easy to integrate users applications.
- The Data Communications Module allows the IBM System/36 and /38 to communicate with a third party or private network. This software configures to the communications line, monitors the session, displays session status to the user, and sends and receives all documents.
- The Systems Services Module (Mailboxing) manages the sending and receiving of business documents and works in conjunction with the data communications module.
  - The mailboxing module collects incoming mail, time-stamps it, opens the envelope, and puts it into a format which can be used internally.
  - The module also collects all outgoing mail, time-stamps it, envelopes it, and sends it via the data communications module to the specified network.
  - With this module, users can also review and maintain mailboxes, display and print mailbox contents, and purge outdated mail.

ACS' EDI software is integrated with all other ACS applications. However, it can be purchased as a standalone system for any industry.

EDI/36 and EDI/38 are priced at $5,000 and $8,000, respectively, for all three modules configured to communicate through a public network and perform translation with X12 formats.

- Modules may be purchased separately, for private networks (for example, J.C. Penney), and translation processing is available for private formats that do not conform to ANSI X12.

- Users may subscribe to ACS' maintenance program for updates of the ANSI tables. ACS has a remote facility that allows direct electronic access to updates.

c. Marketing Strategy

ACS claims to have installed over 175 of its various manufacturing and business management software systems at major apparel manufacturers, including Levi Strauss & Co., Izod, Calvin Klein, Farah Manufacturing, and Jones of New York.

The company has a direct sales force, and it sells products through IBM. ACS is the only software for the apparel industry that IBM distributes for the System/36. ACS also assists the IBM sales force in selling and installing IBM products in the apparel industry.

ACS has a working relationship with GEIS to market EDI services to the apparel industry.

- As a GEIS' Sales Agent, ACS is exclusively responsible for the sales, training, installation and support of the EDI*Express System to apparel manufacturers, but not retailers.

- The arrangement works as follows: GEIS convinces a large retailer that it should implement EDI; the retailer agrees and holds a vendor conference inviting thirty to fifty suppliers; ACS attends this meeting to sign participants.

EDI/36 and EDI/38 are not GEIS exclusives, and ACS expects to be added to McDonnell Douglas' software certification list.

Although ACS' roots are in the sewn products/apparel industry, the company is planning to market its EDI/36 and EDI/38 to IBM System/3X users in all industries supporting the ANSI X12 standard, including automotive, banking, electronics, government, medical, software, and telecommunications, among others.

- According to an ACS spokesman, it is GEIS' intent to put ACS software in the hands of its general sales force and market it outside of the apparel industry. The ACS/GE partnership sold its first non-apparel communications software package to a Boeing aircraft supplier and is in negotiations with suppliers to GM, Ford, Chrysler, and Kodak.

- ACS is advertising in periodicals dedicated to the IBM System/3X and attending conferences where large numbers of users have this equipment.

ACS stresses that while its experience has been in the apparel industry, the software itself is generic: "Translation is translation."

d. Financials

With approximately 50 employees, INPUT estimates the private company's revenues to be approximately $4 million.

The company is projecting sales of $25 to $30 million by 1992, no more than one-third of it to the apparel industry.

ACS will receive a percentage of the revenue from apparel manufacturers they sign for EDI*Express, and it will also receive maintenance and support revenues.

ACS hopes that most, if not all, of its software revenues will come from off-the-shelf products which are designed to easily integrate with users' applications. ACS will do custom integration on a time and materials basis.

e. Comment

ACS has a well established niche in the apparel industry, but it is clearly planning to target all IBM System/3X users. In so doing, it is challenging Metro Mark, which has had a virtual monopoly on minicomputer EDI translator software.

With an estimated 63,000 S/36s and 11,000 S/38s installed, ACS has a substantial opportunity.

ACS is allied with the most aggressive EDI service player, but it remains to be seen if they will succeed in penetrating vertical markets other than apparel.

3. Supply Tech, Inc.

a. Background

Supply Tech (Southfield, MI) was founded in 1984 as a software development company. It is evolving into a just-in-time (JIT) software products house.

Supply Tech's original product was ST1, introduced in 1984. It is an EDI product for the auto industry.

ST BAR (introduced mid-1986) is a product for bar code labeling. It has little to do directly with EDI, but is useful in a JIT environment.

STX12 is Supply Tech's generic translator product introduced in Spring 1987.

b. Supply Tech's EDI Software

ST1 handles material releases and advance shipment notices in fixed length private formats and AIAG standards. It is priced at $3,500.

STX12 runs on an IBM PC or compatible, requiring 512K memory (640K is recommended) and 2M bytes of disk space. A color monitor is recommended.

STX12 does EDI translations, and includes communications software for asynchronous connections.

- The software includes standard logons for the auto industry and most of the third-party services.
- The software provides user controllable external interfaces to user applications. In most cases, according to a company spokesman, integration does not require programming knowledge; users just specify data elements.
- STX12 offers a choice from all industry standard transaction sets.

The Data Entry Mode can overlay names, address, etc. associated with a particular partner. This reduces the amount of the data entry function.

- The software can designate any element with a default or constant value. If a constant value is specified it doesn't appear on the screen but is in the data entry overlay.

Additional STX12 features are:

- An output report generator which allows users to specify output formats without needing to program. Examples are administrator reports, error reports, and reports of transactions sent and received.
- Passwork security will be added to STX12. Authentication encryption will be added later by using a board designed for electronic funds transfer (EFT) applications.
- The software archives from both input and output. It creates a library of the date, time, partner, media, etc. for each transaction.

- A feature the company claims is unique is the fact that STX12 doesn't need to know the name of a trading partner ahead of time. A user doesn't need to do anything to receive transactions from a new partner. The software automatically creates a new trading partner file when the first transaction is received from that partner.

- STX12 will also accept a transaction regardless of type. The system receives a transaction as E-mail if the set is not in the data dictionary.

Supply Tech's STX12 costs $3,900, plus $65/month for support, with all of the features listed.

c. Marketing Strategy

Supply Tech had been exclusively selling direct, but has recently signed an agreement with TranSettlements to distribute its software.

Supply Tech is targeting its micro-based products to the manufacturing environment. It sells primarily to the automotive and heavy equipment industries.

- Over 150 customized systems (called STCAT) are installed in beta testing at Caterpillar. This customer is said to be adding 50 - 60 per month with a goal of 400 installations.

- Over twenty systems are in operation using STX12 for Chrysler invoices.

d. Financials

With 16 employees, INPUT estimates Supply Tech to be a $1.5 million company with 80% of its revenues derived from EDI products, including turnkey systems.

- Based on an estimated 450 to 500 installations, approximately $1.2 million of its 1986 revenues was derived from the ST1 product for the automotive industry, and $.3 million from ST Bar which supports bar coding applications.

- STX12, introduced in April, 1987, is expected to grow to 20% of Supply Tech's revenues. Because of its introductory date, STX12 installations and revenues are not included in the market share exhibit shown in Chapter VI.

e. Comments

Because of its history of service to the industry, Supply Tech's strategy seems to focus on selling a PC-based EDI solution to smaller suppliers to automotive manufacturers and to units of major manufacturers which act as suppliers to other automakers.

Its STX12 product is said to offer greater flexibility than competitive products since it allows tailoring to a trading partner's format. However, this is a common claim among software vendors.

B

Mainframe General Business Applications

Data Design Associates and Management Science America, two developers of mainframe applications packages, have recently introduced translators as part of their offerings.

- The former offers it as a module; the latter is integrating another vendor's translator into its applications packages.
- Other developers of mainframe applications, such as McCormack & Dodge (Natick, MA), Cullinet Software Inc. (Westwood, MA), and Global Software (Dallas, TX), have been observing developments in the EDI world. INPUT expects that they will eventually either develop their own translator or integrate someone else's into their existing applications.
- A fuller analysis of the EDI software market can be found in a companion INPUT study, **EDI Software Markets 1987-1992.**

1. Data Design Associates

a. Background

Data Design Associates (Sunnyvale, CA) has developed a financial accounting package for IBM and plug-compatible mainframes for over 13 years.

b. Data Design's EDI Software

In 1980 the company realized the potential of EDI and its natural fit with the company's existing purchasing and accounts payable systems. The company began working on a software product that would translate electronic invoice information from a vendor to fit the format used by the payables system.

The product, DD-AIM (Automated Interface Module) was released in 1982. It is a generalized translator program used in conjunction with communications software that can connect any two programs. It does not support ANSI X12 translation.

- This product has not sold well, mainly because there were still very few standards.
- Of the 30 to 40 of these systems now in use, under 10 are actually used for EDI, that is, for intercompany communications. The translator module is most often used internally to translate from one program to another.

- By 1985 Data Design Associates concluded that people wanted more than just the translation software and communications tools to embrace a new technology.

Now Data Designs has developed DD-EDI. Besides the basic translator software, which handles ANSI X12 as well as other standard formats, and various controls to insure that transmissions are received correctly, Data Designs is packaging the product with a training and implementation module.

- The DD-EDI translator is priced at $10,000.
- The services package, priced at $5,000, includes training sessions on how to use the translator software, how to use DD-AIM with trading partners who do not use standards, and how to establish a true EDI communications link. A similar training package is provided for trading partners which explains EDI, Data Design's services, and how to start sending invoices electronically.

c. Marketing Strategy

The X12 translator package is being sold into the company's installed base of 600 customers in the Fortune 1000.

Data Designs is using EDI as a lead into its accounting packages and not as a standalone product. It is, therefore, priced lower that its other mainframe EDI products.

d. Financials

Revenues from the DD-AIM translator in 1986 were $100,000. INPUT estimates that only half this revenue can be attributed to EDI applications.

e. Comment

Data Designs is not expected to be a major EDI translator market participant but to the extent it can provide this functionality to its base of accounting systems users, it decreases the market size for generic products.

2. Management Science America (MSA)

a. Background

MSA (Atlanta, GA) was founded in 1963 as a developer of applications for IBM mainframe computers. Its products are marketed as the Expert Series, which includes about 20 different application packages.

b. MSA's EDI Software

In November, 1986, MSA announced Expert EDI, a product that integrates TranSettlements' TranSlate generic translator with selected MSA Expert applications.

- The first phase version of this integration will allow MSA's software to generate outgoing transactions such as purchase orders, invoices, and payment forms.
- A second phase, sometime in 1987, will provide direct acceptance of EDI transactions into MSA software files. The system will be able to input payments directly into accounts receivable and orders into order processing.

The product may also be licensed for use with other provider's packages.

Expert EDI went into commercial release in August, 1987.

MSA has identified some key product strategies that it hopes will enable it to lead in the EDI industry:

- Establish application-to-application communications.
- Utilize an expert knowledge base to manage multiple standards.
- Develop "Exchange Certification" features to guarantee integrity of transactions between business partners.
- Offer a universal VAN interface.

In the past, MSA and other mainframe application vendors created business transaction files compatible with standards, but these still had to be translated into intelligible business data.

- With MSA's purchasing data, a profile is established. The user knows whether the information will be presented through electronic media or a paper document. Expert EDI will have intelligence to know how to format it automatically, putting the appropriate electronic envelope around it.

Expert EDI is marketed primarily as an enhancement to MSA's application software and is priced at $50,000.

- This price is nearly double the package it is based on.
- However, the package is a substantial enhancement of the TranSlate product.
- Further, MSA will provide additional professional services such as integration and installation support, training, and other services.

c. Marketing Strategy

MSA is principally targeting its installed base of approximately 6,500 users of its Expert series of mainframe software, as well as new prospects for its products.

This past year, MSA has been restructuring its marketing staff from a geographical to a vertical market organization. It is specifically targeting manufacturing and distribution companies. The staff responsible for EDI is a logistics group, established as a market opportunity organization within the company.

In December 1986, GEISCO and MSA announced a joint marketing agreement that provides the first "one-stop" for customers looking for both network services and EDI applications software. The two companies will jointly market their respective products and services but license them independently.

Consulting is also a large portion of MSA's marketing strategy. It will offer consulting to develop corporate EDI strategies as well as ongoing EDI education. The Logistics Consulting Group, a team of MSA consultants, will be available to MSA's Expert EDI customers. They will conduct educational meetings, assist customers in installing Expert EDI, and provide standards changes to their customers.

d. Financials

MSA had no 1986 revenues from its EDI product.

In 1986, the company reported $18.7 million in income on revenues of $193.4 million, up 173% from 1985. This was before the acquisition of Comserv, a developer of manufacturing software, and several other smaller companies in early 1987. The company reported a loss in the first quarter of 1987, but was expected to recover in the second half.

It is estimated that 36% of its revenues come from maintenance and support agreements.

An estimated 76% of MSA's revenues are from U.S. accounts.

e. Comments

MSA is the only major software provider to offer and support EDI funtionality tightly coupled to its other applications. Although the price of EDI Expert is higher than the few other mainframe EDI packages, the company justifies the cost based on its functionality and included professional services.

Exhibit V-1 summarizes the features and prices of EDI software from applications developers.

EXHIBIT V-1

EDI SOFTWARE FROM APPLICATIONS DEVELOPERS

VENDOR	PRODUCT	HARDWARE	PRICE	COMMUNICATIONS	DOCUMENT PROCESSING
ABC	EDE	Micro/ Mini	$3,000- $5,000	CLEO 3780+ required	Standardized Screen
	Vari- Comm	Micro/ Mini	$3,000- $5,000	CLEO 3780+ required	Fixed Screens for Auto Industry
	XL12	MF	$24,000*	Extra	End User's Application
ACS	EDI/36 EDI/38	Mini	$5,000- $8,000	Data Comm and Mailboxing Included	User Defined Flat Files
MSA	Expert EDI	MF	$50,000	Universal Network Interface	Integrated with MSA Applications
Supply Tech	STX12	Micro	$3,900	Asynch Connect	Data Entry Overlay

*Includes mandatory $4,000 fee for installation and integration.

EDI Software Market Shares and Conclusions

VI

EDI Software Market Shares and Conclusions

This chapter presents INPUT's findings on EDI software vendors' estimated 1986 revenues for X12 products, and for that year's unit sales. It also offers concluding remarks.

- Several companies offer EDI software which only supports private standards, industry-specific standards, and applications of X12, such as healthcare, casualty/property insurance, and other forms of EDI.
- These providers were not considered in this study, but will be examined in future INPUT reports.

EDI software forecasts, and specific recommendations to market participants are included in the companion study, **EDI Software Markets, 1987-1992.**

A

Top EDI Software Providers

Exhibit VI-1 shows the leading EDI software providers by estimated revenues for X12 products and indicates the number of units for each computer platform sold in 1986.

As shown, the market leaders are TranSettlements (with a mainframe product), EDI, Inc. (with microcomputer products), Supply Tech (microcomputer support), American Business Computer (with products in all categories), and Metro Mark (with software for micros and minicomputers), in that order.

EXHIBIT VI-1

TOP EDI SOFTWARE PROVIDERS
X12 ONLY

RANK	COMPANY	1986 REVENUES EDI SOFTWARE ONLY ($000)*	1986 INSTALLATIONS		
			MICRO	MINI	MAINFRAME
1	TranSettlements	1300.00			50
2	EDI Inc.	1008.00	120		
3	Supply Tech	700.00	200**		
4	ABC	600.00	135	15	3
5	Metro Mark	448.00	29	48	
6	PSI	178.00	50		
7	GEIS	144.00	145		12***
8	APL	140.00	25		
9	York	75.00			4
10	DNS	45.00	15		

* = Input Estimates. Excludes maintenance and professional services
** = ST -1 Supports X12 and other standards.
*** = No charge for GEIS EDI-T beta sites

B

Mainframe EDI Software

Exhibit VI-2 shows 1986 unit installations for mainframe EDI software.

EXHIBIT VI-2

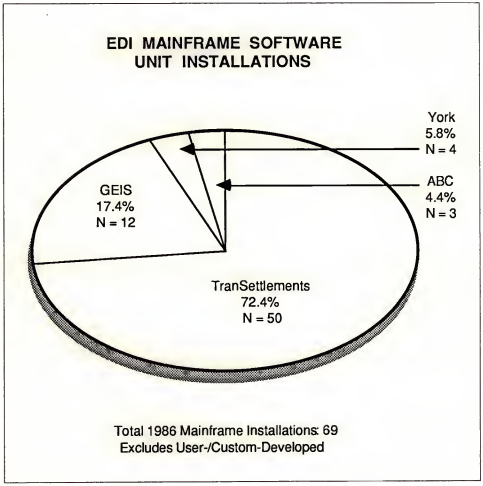
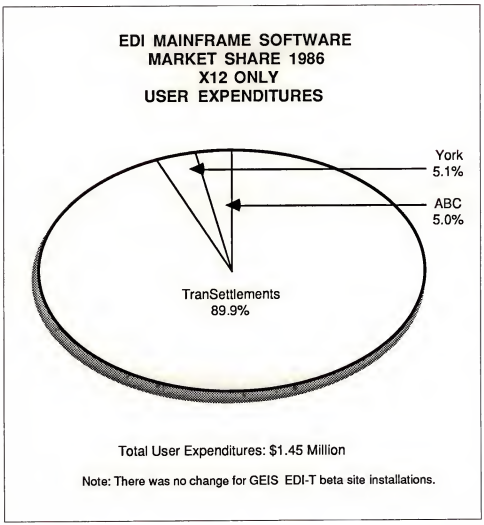


Exhibit VI-3 shows user expenditures for this software. As noted on the exhibit, GEIS received no revenues from its distribution of approximately 12 copies of EDI-T for beta testing in 1986.

There are few companies participating at this level, and MSA's entry in mid-1987 has yet to make an impact. In 1986, TranSettlements was clearly the dominant provider and will also presumedly benefit from MSA's marketing of an enhancement of its product.

EXHIBIT VI-3



C

Conclusions

As illustrated in this study and the companion market analysis study, the EDI software market is a fragmented one, largely inhabited by small entrepreneurial firms and several applications vendors adding EDI to their product mix.

The installed base is relatively small, and there are no clear winners at this early date.

Similarly, sales volumes are still relatively low, and there is little evidence of bulk sales, although this is the strategy of several vendors.

The market share positioning is subject to rapid change as acceptance of EDI grows and with the introduction of new packages and an accelerated market push from these and other providers. In the mainframe area, GEIS' EDI-T and MSA's Expert EDI will likely attain a growing portion of the mainframe market.

With one exception (MSA), missing from the marketplace are the large application' software vendors. Also missing are the major turnkey systems vendors (e.g. ASK, Altos) and most of the major computer manufacturers who also offer, or distribute, software. The exceptions are IBM and Control Data.

As the EDI market matures, more partnering is likely and acquisitions probable as vendors seek to strengthen their mainline products by improving their usefulness. As discussed more fully in INPUT's EDI software market analysis study, the industry is in an alliance-forming period. Although there is experimentation with a variety of relationships, no clear pattern is emerging.

No one software solution appears to dominate the market. There are more product offerings for microcomputers but there are indications that most new activity will be in mainframe software, System/3X, and Unix-based applications.

Generic solutions appeared on the market first, but now there is increasing activity in integrated solutions which include EDI functionality with traditional applications in inventory, purchasing, distribution, cash management and other appropriate areas. Integrated solutions will be the wave of the future.

No clear patterns have emerged regarding pricing differences between bundled and unbundled software. Customers are given a variety of options (such as what transactions are supported, what standards are used, and if communications software is included).

As more integrated solutions emerge, pricing of the value-added EDI modules will moderate.

- Unfortunately for vendors, users may expect this and delay purchasing unless compelling reasons are presented to adopt EDI in the near term.

- These reasons will be associated with clearly demonstrated cost and competitive benefits and larger companies requiring their trading partners to adopt EDI.

EDI software is the core of any successful EDI implementation, but is not an isolated consideration. The multitude of choices and approaches makes the decision-making process difficult for users.

For vendors, a fragmented market populated largely by small entrepreneurial firms means opportunity to stake out market share or a market niche. It also means opportunity, and for some the requirement, to partner with firms more able to penetrate and support accounts.

EDI shows every indication of being poised for explosive growth, particularly in EDI transactions. Accordingly, companies with EDI plans, products, and services are positioning themselves to capitalize on increasing demands.