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Industrial Report No. 35-72  
(File: Data Processing)

May 9, 1972

## STORAGE TECHNOLOGY CORPORATION - STAG

Recent Price (OTC)	20
Range, 1972	28-16 5/8
Earnings Per Share 1971	(\$1.53)
Estimated Earnings Per Share 1972	\$0.70+
Price/Earnings Per Share - 1971	----
Price/Estimated 1972 Earnings Per Share	28.6x
Indicated Dividend	None
Common Shares Outstanding	3.3 million*

\* Of which, about 900,000 are publicly held.

+ After providing for income taxes which will not be payable.

### In Brief:

Storage Technology Corporation (STC) is a small, high-technology company with unusual promise, in our opinion. We believe the Company is today the technological leader in the manufacture and sale of magnetic tape subsystems in the computer industry, and, furthermore, that it is taking appropriate steps designed to increase its participation in the overall computer industry.

Coincident with these developments will be a dramatic growth in earnings, by our estimates, which lends considerable appeal to the stock at present prices. In part, this expected earnings growth will come from the development of a large, high-quality, rental income stream that is not burdened with deferred charges, since all costs have already been expensed.

We recommend purchase for aggressive accounts that can accept the risks that are inherent in a small company.

The study on this page and any following pages is not a complete analysis of every material fact respecting any company, industry or security. The opinions here expressed reflect the judgment of the firm at this date and are subject to change. Facts have been obtained from sources considered reliable, but are not guaranteed. We point out that in the course of our regular business we may be long or short any of the above securities at any time.

Concept of the Company - Aims and Objectives

We believe the long-range objective of the management of Storage Technology Corporation is to become a major factor in the data processing industry. Such a position would be gained by selling directly to end users subsystems or systems of superior technology, basically developed from within.

At present, STC markets directly to the end user a line of magnetic tape subsystems, consisting of tape drives and tape control units, that are compatible with IBM computer systems. Significantly, STC equipment offers many features not available from IBM, and at the high end of the line, offers products that have superior performance characteristics, but rent for the same price.

The quality, reliability and performance of these tape subsystems in large computer-user installations should lead to a favorable climate for offering these users additional subsystems of other types, but comparable technological advantage. As the market is penetrated and the rental base becomes big enough, marketing may be broadened to medium-size computer users. In this building block fashion it may be possible for STC to become a large enterprise over a period of years.

Plug-Compatibility Reviewed

The rise and subsequent fall of investor esteem for companies marketing peripheral equipment that is a simple, plug-to-plug replacement for comparable IBM equipment is well known and need not be repeated here.

Moreover, we agree that investors should be concerned, since IBM has introduced a major new series of peripherals with the 370 computer systems that are technically more difficult to design and build, and we feel that this trend should continue. The technology competition is being powerfully aided by new financial plans offered to users by IBM, as well. The Fixed Term Plan (FTP) and Extended Term Plan (ETP) offer up to two year leases that have the practical effect of excluding independent equipment where adopted.

We believe that an independent industry can and will exist, however, as a direct result of user maturity and favorable experience with independent equipment over the past two years. Users want a competitive atmosphere among vendors and an alternative to IBM, even if not used.

The companies that can do well in this environment are likely to be few, and will perhaps be quite different from the industry as it has been until now. The premium on engineering capability appears to be increasing rapidly, while marketing and finance requirements are not diminishing. In other words, the

best counter to IBM's financial plans and new product introductions, and to limit equipment returns, would be a superior product at an equal or even higher price than IBM's. These products may have to be available not far behind, if not ahead of, IBM. They will certainly have to be able to be installed directly on the channel of the main frame rather than by the simple replacement of a "black box." The new buzz words may be "channel to channel" and "subsystem." We do not believe IBM will offer control units integral to the main frame in high performance systems, because of the lack of flexibility and loss of performance such an approach might entail.

IBM represents the bulk of the data processing industry and must be confronted in either direct or indirect market competition by all other companies in the industry. This is true whether a device is on line or off line, or in the more vaguely defined terminal and data entry area.

We do not consider Storage Technology Corporation to be engaged in the plug-compatible peripheral business as traditionally defined; we see it rather as a new breed of competitor for which no stereotyped classification is presently available.

### Management

The Company was formed on August 11, 1969, by a group that was drawn essentially from IBM's advanced tape-drive development staff. Domestic design and manufacture of tape systems by IBM is concentrated at a large facility in Boulder, Colorado, and STC is located within 10 miles of Boulder. The principal officers of the Company and their background are listed below:

Jesse I. Aweida, Chairman and President -- A co-founder, Mr. Aweida was with IBM for 13 years, the last four as Program Manager, IBM 2420 Model-7 tape subsystem.

James M. MacGuire, Vice President - Field Operations -- Mr. MacGuire has held marketing positions with IBM and MAI Equipment Corporation, and most recently was Vice President - Field Operations of Telex Corporation.

Zoltan L. Herger, Vice President - Engineering -- Mr. Herger was associated with IBM for over five years and most recently was Engineering Manager for the IBM 2420 Model-7 tape subsystem.

Raymond S. Livingstone, Jr., Vice President - Finance -- Mr. Livingstone is a C. P. A. and previously was Controller of the Electrical Products Group of AMF, Inc.

Barry E. Cunningham, Vice President - Operations -- Mr. Cunningham was associated with IBM for over 10 years in various capacities, including

Control Unit Development, 360/65 CPU Emulation and 85 channel design, and with the Component Division.

Mr. Aweida and Mr. MacGuire are members of the Board of Directors. Other directors are as follows:

David J. Dunn - Partner in Idanta Partners, and formerly a partner in J. H. Whitney & Co.

Richard C. Steadman - Partner in J. H. Whitney & Co.

Reid W. Dennis - President of American Express Investment Management Company.

Thomas B. Horgan - President of Inforex, Inc.

### Tape Drives and Disk Drives

The use of magnetic tape as a storage media for computers goes back to the early days of the industry. The technology of tape equipment has been advancing steadily and today is one of the two peripheral devices that can approximate the internal speeds of computers. The advances have come in the speed at which tape can be moved past the recording (read) head, in packing density of information, and in improved operating features.

A unit of information (byte) is recorded horizontally across the tape, is followed by another, and so on. Huge amounts of data can be stored on a reel of tape, so that on a per-unit-of-information basis, tape is probably the lowest cost method of data storage. These characteristics suggest a wide variety of applications, including records of all types, sequentially processed information, intermediate storage for later processing, and data transfer among installations.

Disk drives are of more recent origin, reaching a volume product status only with the introduction of the IBM 360 computer systems. On this equipment, information is recorded magnetically on a medium that resembles a series of phonograph records. Although the medium in modern systems is removable and is capable of both large volume storage and rapid data transfer, the equipment is relatively expensive. These characteristics suggest use where rapid access to random data is required.

There are some areas of overlap between the two, in both cost and performance. Greater use of "on-line" processing, however, has not resulted in a decrease of tape units, but has resulted rather in a faster growth rate for disk drives.

We will discuss the tape business first.

Tape Drive Industry Conditions

If we exclude older IBM 729 series equipment used with second generation computer systems, there are an estimated 125,000 tape units in the field of IBM's 2400, a newer series used with 360/370 computer systems. IBM no longer is in production of 2400 series tape units, however, having begun shipments last October of high performance models of a new 3400 series. Between 5,000 and 10,000 of the new series have been produced by IBM to date, and we now estimate current IBM domestic production at somewhat over 1,000 per month. (Low performance models of the 3400 have been announced by IBM but are not yet in production.) If we assume a typical unit selling price of roundly \$25,000, it can readily be seen that tape drives are in widespread use and represent a large market.

Against this backdrop, IBM "unbundled" its products in 1969, i. e., established separate charges for products and support services. This factor, along with the growing sophistication of large users, and the cost-consciousness created by the economic recession, led to rapid establishment and success for independent vendors of lower-priced, plug-compatible replacement equipment. The leading producers, Telex Corporation and Potter Instrument Company, probably have installed around 10,000 units in replacement of IBM 2400 equipment.

This success has led to a response from IBM. The new 2420/3420 series of tape equipment continues only the highest performance models of the 2400 series (of which relatively few were produced), incorporates the most modern features, and is significantly lower in price than comparable 2400 models. The combination of modern equipment, lower prices, and the Fixed Term Lease Plan, appear to us to be part of the reason why IBM is steadily regaining market position in tape drives. Perhaps another reason is that neither Telex nor Potter (nor Calcomp, a recent entrant) has yet been able to deliver a comparable product.

IBM's Fixed Term Plan, announced in May, 1971, offered users of tape drives (and certain other peripheral products) an 8% discount for a one year lease, and a 16% discount for a two year lease. This plan not only forced independent producers to lower prices sharply, but also tended to "lock up" the systems for IBM. Whether the traditional tape suppliers can return to their past rate of success is still an open question, and to us appears doubtful.

Considering this background and that STC did not commence production until September, 1970, the success of the Company is a considerable achievement. We estimate that the field population of STC units exceeded 800 by the end of 1971, may exceed 3,600 by the end of 1972, and may possibly exceed 6,600 by the end of 1973.

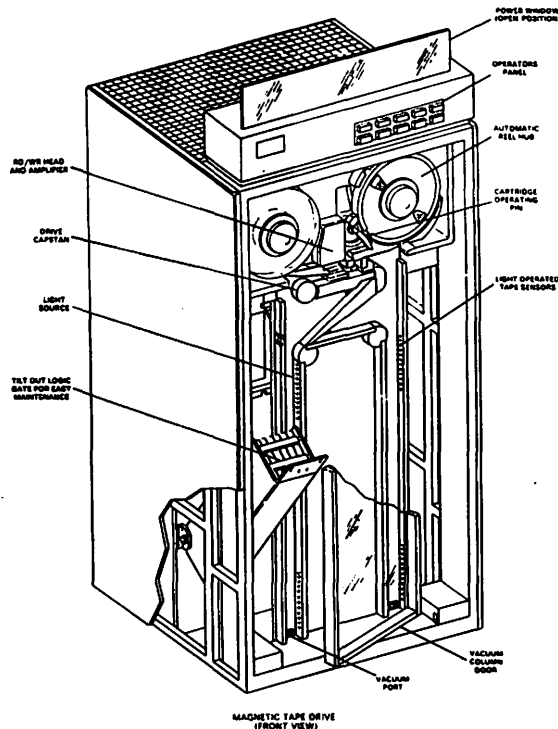
The reasons that lie behind our expectations lead to a discussion of the Company's products and policies. It may be useful to first define the terms as they will be used throughout this report.

Definition of Terms

**Magnetic Tape Subsystem** - A tape control unit and one to eight tape drives.

**Tape Control Unit** - A complex electronic equipment designed to interface the system to the central processor, and which controls the individual drives.

**Tape Drive** - The unit which actually reads or writes on tape. A drawing of a tape drive is reproduced below.



**Tape** - One-half inch standard computer tape.

**ips** - Inches per second, a measure of speed.

**bpi** - Bytes (units of information) per inch, a measure of recording density.

**KB** - Kilo (thousand) bytes per second, the measure of data transfer rates.

The Storage Technology Product Line In Tape

STC has available drives and control units equivalent to IBM 2401 and 2420 drives and 2803 controllers, but the bulk of present business is in the new 3400 series area. IBM made its initial shipments in this series in October, 1971, and STC made theirs just two months later. It is significant to note that STC 2420 - 2803 equivalents are field-upgradeable to 3420 sub-systems and are not, therefore, an obsolescence problem.

The tape drive line is summarized below, together with its IBM equivalents. Primarily we are attempting to show that STC offers a range of equipment unmatched by IBM, and that throughput is superior to IBM at the high end of the line.

<u>Model No.</u> <u>STC Drives</u>	<u>Speed</u>	<u>Model No.</u> <u>IBM Equivalent</u>
3430	75 ips	3420-3
3440	100 ips	none
3450	125 ips	3420-5
3470	200 ips	3420-7
3480	250 ips	none

The high technology 3470 and super performance 3480 are currently the Company's most popular models, although the 3480 only enters commercial shipment during the current calendar quarter. Prices are slightly below IBM on comparable equipment, but the 3480 is equal to the top of the IBM line.

Of course, factors other than speed or throughput must be considered. Reliability is extremely important, and here our checks with users give STC high ratings.

From a performance standpoint, too, other factors must be considered. Leaving out technical explanations, the highlights of STC product features might include the following:

Control Unit

- Improved phase encoded error correction technique\*
- Read-only memory control
- Integral tape drive switching
- Monolithic MSI Circuit Density
- Self-contained Microprogrammed Diagnostics
- Programmable Maintenance Memory\*
- Adjustment-free Read Detection\*
- Radial Tape Drive Interface
- Field upgradeable

Drive Unit

- Dynamic amplitude control\*
- Automatic Reel Hub\*
- Analog Capstan Control\*
- Velocity Feedback Reel Control\*
- Linear High-speed Rewind\*
- Field upgradeable

\* Patent issued or pending

While these may be important technical features, perhaps the most significant areas of difference from IBM equipment lie in the controller. STC equipment has the capability of dealing with an intermixture of drives, which IBM does not. STC can perform certain maintenance on one drive while others are operating, while IBM typically shuts down the entire sub-system or uses more main frame time. STC uses its own diagnostic software in a self-contained memory, while IBM typically utilizes the central processor for diagnostics. Also, STC has a set of diagnostics that can exercise the whole sub-system. Thus, the control unit permits utilization of tape drives that are superior to, but not plug-compatible with, IBM drives.

These strong technical sales features are now being buttressed by a technological "first" in the form of Storage Technology's newly announced 3500/3800 series of tape drives which operate on 3200 bpi density---double the maximum density in use anywhere in the industry. Announced in March, initial customer delivery is expected in the first quarter of 1973. Speeds will range across the board, from 75 ips to 250 ips.

As an example of the significance of the announcement, if we look at the top of the line model, we come up with an 800KB data transfer rate, which compares with an upper limit of 312KB on present IBM equipment. In addition to higher throughput, this new subsystem reduces the size of user tape libraries, an important advantage. Prices are about 30%-40% higher than IBM single-density models. User interest appears very high.

While we believe IBM will announce products having similar capabilities in the future, STC's announcement at this time tends to enhance its reputation as the technology leader in the industry.



Manufacturing

Storage Technology assembles drives and controllers in two facilities near Boulder, Colorado (Louisville and Broomfield). Production space is crowded but still improving in both output and efficiency. Completion of a 70,000 s.f. addition at Louisville in the next several months should relieve the crowding and permit production to stabilize at a high level.

Marketing and Service

In January of this year, the Company's domestic Field Operations Division had 23 salesmen, 63 field servicemen and 12 technical and administrative support people. These men operate out of 13 branch offices located in major metropolitan areas where most large users are located.

As a matter of philosophy, STC prefers to market its products directly to end users rather than to sell to original equipment manufacturers (OEM). A number of companies wishing to buy on an OEM basis and re-sell to end users have been refused. It may be that the Company would accept an OEM order from a computer main-frame manufacturer, and at least one such contract is under present negotiation.

In the sales area, we expect offices and people will be added at a very slow rate, since the Company is presently production-constrained rather than sales-constrained. STC's technical reputation has enabled it to attract high quality, experienced, data-processing salesmen.

In service, we estimate that 100 new men a year will be required, at least through 1973. We doubt if more than 40 units can be serviced by one man, while a ratio of 20 to 1 in low tape population density areas may not be uncommon. These ratios were considered in our projection of manpower requirements. Service is a loss area for STC as it is with most small peripheral companies, but losses should diminish as the number and geographical density of tape units installed grows.

It should be recognized that with a small sales force and very high performance products, the great majority of customers to date have been the "Fortune 500" accounts, plus the Federal Government. A representative sampling of customers includes the following organizations:

State Farm Insurance	Chase Manhattan Bank
Chevrolet Engineering	Union Carbide
Federal Deposit Insurance Corp.	Ford Motor
Union America Bank	Western Electric
National Biscuit	Cleveland Trust
Equitable Life	Humble Oil

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The largest customer is currently Ford, with about 174 units, but it may be surpassed by the Social Security Administration. SSA has 105 units on firm order and has options on an additional 840 units.

Abroad, very little has been accomplished so far. In May, 1971, an agreement was signed with Promodata, S. A. of France to act as exclusive distributor in France and as non-exclusive distributor elsewhere in Europe. Shipments to Promodata are on an outright, OEM sales basis. Promodata has been doing well, buying \$900,000 worth of equipment last year. We forecast a much higher shipment rate this year.

In September, 1971, Electro Marketing Corporation in Japan was signed as the Japanese distributor, but little has been done to date and it may be 1973 before significant volume develops.

While these arrangements are satisfactory and call for a reasonable quantity of minimum shipments, it is clear also that STC must have a much stronger base in Europe and Great Britain. We believe the Company will establish its own offices and will sell direct rather than through distributors, and that some initial steps will be taken this year.

Finally, we note that all marketing and service costs, including start-up expense, have been expensed as incurred in corporate income statements.

### Research and Development

We have already stated that we consider the Company to have an outstanding technical group. Moreover, we believe this capability is broad, and includes a degree of software and central processor technology. We do not look upon STC as solely and forever a tape drive company.

We do expect continued technical advances in tape drives. For example, perhaps instead of 1/2 inch tape, something like 2.7 inch tape might be used. IBM is believed to be considering such an approach. Greater concentration of data on that type of system would greatly increase the speed of access to such data, thereby reducing a limitation of tape. In our judgment, STC is fully aware and abreast of possible changes in the state of the art.

Perhaps most interesting is the Company's plan to spend \$2.2 million on R & D in 1972. This is a significant sum for many businesses, and certainly is large in relation to 1971 reported revenues of \$3.7 million.

From an accounting standpoint, STC pursues conservative policies, perhaps the most conservative in the industry. All R & D is expensed as incurred, and there are no deferrals of any type.

Business Prospects for STC Tape Equipment

By our estimates, STC is averaging slightly over \$500 a month in rental income per unit (including maintenance), considering the mix of controllers and drives. Purchase prices may average \$21,000-\$22,000. In our 1972 estimates, we have used \$500 and \$20,000 respectively. Looking ahead to 1973, we believe the rental figure will be at least \$575 on the basis of the probable new mix, and this is the only adjustment made.

We are estimating that STC will install on a rental basis to end users approximately 2,500 units in 1972 and 1973, as compared with 700 in 1971. We consider these to be conservative figures, since an increase in shipments abroad and a level installation rate suggests a domestic decline, which we do not expect, but use merely as a safety factor.

Our estimates include a low figure, 150 units, to be sold outright to end users in 1972 and 1973, as compared to an estimated 50 in 1971.

Sales to foreign distributors are made at OEM prices. We do not know STC's arrangement, but customary industry practice is 50% off list price, in this case \$10,000 per unit. We expect foreign distributors to take 300 units this year, up from 90 in 1971, and predict 400 units in 1973.

This data will be combined into a financial forecast in a later section of this report. We turn next to Storage Technology's second product line, disk drives.

Disk Drive Industry Conditions

The explosive growth of highly priced disk storage in IBM 360 installations gave rise to a very much larger and more competitive independent industry than that involving tape. It was fostered by the same conditions that established tape, but was materially aided by long delivery dates from IBM plus the fact that IBM had fairly slow-operating equipment. The major companies in this industry at its peak were Memorex Corporation, Telex Corporation (marketing drives built by Information Storage Systems, Inc.), and California Computer Products, Inc., through its Century Data Systems subsidiary. Lesser factors included Marshall Industries, through its then subsidiary Marshall Data Systems, Potter Instrument Company, and Control Data Corporation.

As in the case of tape, IBM responded to competitive forces. In December, 1970, prices were in effect reduced by 20%, and in May, 1971, the Fixed Term Plan for one and two year leases, with their 8% and 16%

discounts were made applicable to disk drives. The principal IBM model, the 2314 system of a controller and up to eight drives, has probably been out of new production for a year.

And, as with tape, IBM has responded technically. It has introduced a high speed, current state of the art system called the Model 3330, consisting of a controller (Model 3830) and two, four, six or eight drives (spindles). A typical system of a controller and four spindles would sell for \$199,760 and rent for \$5,000 per month at IBM prices. It is, however, available under the Fixed Term Plan. These prices are roughly 50% higher than the Model 2314, but the Model 3330 system has a maximum storage of 800 million bytes and will transfer data at 806KB -- dramatic improvement over 233 million bytes and 312KB for the Model 2314, to say nothing of its capability for twice the speed. The Model 3330 is offered only to IBM 370 system users.

The characteristics of the 3330 market may be quite different from those of the 2314 market. This unit is far more complex, far more expensive, and far more critical to a user's system. Most users, moreover, are believed committed to a one or two year lease with IBM. Although IBM began shipping to customers in August, 1971, no independent has shipped one, and we doubt if a commercial product will be delivered by anyone in the industry much before August, 1972.

We believe penetration by independents as a group in the 3330 will be slow. User reports of the IBM 3330 are glowing, and the product is excellent. Users are dubious of the technical ability of the independents and may wish to see a record of demonstrated success, as well as wait for their leases with IBM to expire. Although a number of independents have announced that they will be supplying this market, we believe the number who will be successful will be few.

As the brief description of the characteristics of the 3330 suggests, this disk drive system is so enormous that only large computer users will be utilizing it on the upper Model 370 systems. IBM is believed to be developing for introduction soon new disk drives which may affect the market below this level, including design changes to make independent attachment more difficult. This lower product area is at present irrelevant to Storage Technology.

#### Storage Technology's Role in Disk Drives

In February, 1972, STC announced that it would market disk drive subsystems that are the equivalent of IBM 3330. These subsystems would be built by Information Storage Systems, Inc. (ISS), a subsidiary of ITEL Corporation and sold on an OEM basis to STC for re-marketing under the STC

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name. The agreement runs four years, is non-exclusive, is world-wide, and calls for initial shipment to customers in August, 1972. Other terms are not available, except that STC has agreed to purchase 300 spindles and 60 controllers before March 31, 1973. ISS will train STC personnel, who will service the equipment.

Until the equipment is actually running in a user environment, we can not forecast acceptance. In our judgment, however, we consider ISS to be the technological leader among independents in the disk drive business. ISS, like STC, was formed by former IBM advanced development engineers. We expect an outstanding product which will complement nicely the tape drive line, be sold to very much the same users, and provide a significant profit opportunity for Storage Technology.

It is too soon to review technical characteristics. One obvious difference from IBM, though, is that STC will offer up to eight spindles in any number as compared to IBM equipment which is packaged in pairs of spindles. This permits a user to order only what he needs and to expand gradually, and is a selling feature of some value.

In the broad, overall picture, STC is adding another high technology subsystem to its line.

### Business Prospects in Disk Drives

We estimate that 100% of disk subsystems will be rented rather than sold, and that a typical configuration will be five spindles with one controller. Such a configuration will rent for \$4,645 a month on a one year lease basis.

Our appraisal is that STC will become a major supplier of this equipment, but that the build-up may be rather slow. We estimate 30 subsystems will be delivered this year and 60 subsystems next year. This number is likely to be conservative, but even so, would still represent an annual rental stream of \$5 million.

### Revenue and Earnings Outlook

With one exception, the basis for our revenue projections has already be explained. The exception arises because on December 15, 1971, the Company entered into an agreement with Decimus Corporation, a subsidiary of BankAmerica Corporation, whereby Decimus will purchase outright up to \$7 million of tape subsystems annually, for a three year period. These systems will be those rented by STC to end users. As a consideration, Decimus purchases at a price below list price (our estimates assume 25% off). STC must maintain such systems, but receives regular maintenance

fees for such service, and is required to do best efforts remarketing should the equipment on lease be returned. The agreement is more complicated than that, but these are perhaps the salient provisions. Decimus also receives warrants to purchase up to 110,000 shares of STC at \$13 per share subject to various conditions.

From Storage Technology's viewpoint, perhaps the major consideration is cash generation, although the Company by our estimate also records a profit. Both the S.E.C. and the Company's auditors, Arthur Andersen & Co., have approved accounting treatment of the transaction as a bona fide outright sale.

Thus, we develop the revenue projections as in Table I, following:

Table I

Revenue Projections  
(data in \$000)

	<u>1973E</u>	<u>1972E</u>	<u>1971</u>
Sales - Tape Drives			
To End Users	\$ 3,000	\$ 3,000	\$ 1,148
To Decimus	7,000	7,000	-----
To Distributors Abroad	<u>4,000</u>	<u>3,000</u>	<u>900</u>
Total Sales	14,000	13,000	2,048
Rental & Service-Tape Drives	16,400	8,500	1,616
Rental & Service-Disk Drives	<u>3,340</u>	<u>200</u>	-----
Total Revenue	\$33,740	\$21,700	\$ 3,664

We have had to make assumptions as to cost of manufacture. This is a closely guarded secret, as with most companies, and one we cannot determine from published data. Our estimate is that the Company will fall within the \$4,000 - \$6,000 per unit parameters we consider generally applicable to the industry, once in stable, high volume production. In this report we have used an assumption of \$5,000 in 1973, and believe that if this is too low, we have built in a safety factor in our conservative assessment of revenue. In 1972, non-recurring start up expense and new model introductions will lead to considerably higher costs. We have arbitrarily assigned \$1.5 million to cost of goods sold to account for these costs.

R & D data are publicly released by the Company, and remaining cost data has been conventionally forecast by estimating sales and service manpower needs and bank loans.

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This leaves only depreciation of rental equipment. STC utilizes five year, straight line depreciation to zero salvage value. This is extremely conservative in the industry, and we consider the Company's accounting generally to be equalled or exceeded only by IBM. Our depreciation estimate is based on the unit forecast for equipment leased.

Combining revenue data from Table I with our estimated costs develops an earnings projection which we present in Table II below:

Table II

Sales and Earnings Forecast  
(Data in \$000)

	<u>1973E</u>	<u>1972E</u>	<u>1971</u>	<u>1970</u>
Total Revenue	\$33,740	\$21,700	\$ 3,664	\$ ---
Cost of Goods Sold	4,950	6,000	3,331	561
Selling, General & Admin. Exp.	3,500	3,100	1,686	500
Cost of Maintenance	4,100	3,200	600	200
Research & Development	2,500	2,200	1,700	1,200
Interest	1,200	900	343	6
Total Operating Expenses	<u>\$16,250</u>	<u>\$15,400</u>	<u>\$ 7,317</u>	<u>\$ 2,467</u>
Depreciation of Rental Equip.	4,970	1,900	432	---
Pretax Profit	12,520	4,400	(4,085)	(2,467)
Pretax Profit Margin	37.1%	19.4%	def.	def.
Income Taxes @ 48%	6,010	2,112	---	---
Net Income	6,510	2,288	(4,085)	(2,467)
E.P.S. (3,274,000 shares 1972-3 2,669,480 shares 1971 1,618,316 shares 1970)	\$2.00	\$0.70	(\$1.53)	(\$1.52)

Financing Corporate Growth

We estimate that Storage Technology will be shipping products valued at selling prices as follows:

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### Value of Shipments

1973E	\$84 million
1972E	\$64 million
1971	\$18 million
1970	none

For a Company organized in 1969, these figures suggest significant financial requirements. Original equity capital (including private placements) of about \$6 million, was increased by about \$3.5 million in June, 1971, by an initial public equity offering, followed by an \$8 million equity offering in May, 1972. Bank credit lines of \$10 million with a group headed by First National City Bank, under an April, 1971, agreement, have now been increased to \$20 million.

In addition to these sources, the Decimus agreement in the first two years of its three year term will provide up to \$14 million in sales financing and nearly \$1 million in equity capital. Further, as part of the agreement to buy ISS tape drives, ITEL Corporation has agreed to finance up to \$10 million worth of such purchases.

A final consideration is that major internal cash generation should be taking place by 1973. Our data show that in 1973 depreciation of \$5 million and pretax profit of \$12 million, a total of \$17 million, may be fairly close to cash actually generated. We have made a bookkeeping entry for income taxes, but some of this may not be paid because of a tax loss carry forward.

These estimates add up to well over \$60 million and are more than adequate for the development of the business from inception through 1973.

### Market Valuation

The risks in Storage Technology Corporation are readily recognizable, and include among others:

- a major technology or price change by IBM, i. e., the inherent risk of the peripheral industry
- inability to finance the business on a continuing basis
- large scale return of rental equipment
- limited amount of publicly held common stock, suggesting the possibility of illiquidity should prospects deteriorate



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Counterbalancing these risks, in our opinion, is the shortage of genuine technology companies and the shortage of identifiable growth stocks in this industry. Storage Technology has the potential, in our opinion, to measure up to these standards if developments occur as we foresee.

We believe a high multiple will be placed on STC earnings, not simply for these reasons, but also because of (1) its expected rapid growth rate, (2) the unusually conservative nature of its accounting, and (3) the high quality of its rental base earnings.

We recommend purchase in aggressive, growth-oriented accounts cognizant of the risks involved.

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Incorporated

Peter Labé

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Quarterly Earnings Record 1970-1971

	<u>Revenues</u> (000)	<u>Loss Before Taxes</u> (000)	<u>E.P.S.</u>
1972 1Q	\$3,732	\$ 207	\$0.07*
1971 4Q	\$1,937	\$ (231)	(\$0.05)
3Q	1,464	(766)	( 0.24)
2Q	213	(1,399)	( 0.54)
1Q	50	(1,689)	( 0.70)
1970 4Q	--	(\$1,129)	(\$0.61)
3Q	--	(689)	( 0.44)
2Q	--	(382)	( 0.26)
1Q	--	(271)	( 0.21)

\* Owing to tax loss carry forward, this figure is equivalent to pretax profit.

STORAGE TECHNOLOGY CORPORATION

Financial Summary (a)

<u>Years Ended</u> <u>December 31</u>	<u>Revenues</u> (000)	<u>Net Income</u> <u>Before Taxes</u> (000)	<u>Pretax</u> <u>Margin</u>	<u>Tax</u> <u>Rate</u>	<u>Net</u> <u>Income</u> (000)	<u>Return on Year-</u> <u>End Common</u> <u>Equity</u>	<u>Per Share</u>			
							<u>Earnings</u>	<u>Dividend</u>	<u>Price</u> <u>Range</u>	<u>P/E</u> <u>Range</u>
1971	\$3,664	\$(4,085)	Def.	--	\$(4,085)	NIL	\$(1.53)	---	18- 7 <sup>(b)</sup>	N.C.
1970	---	(2,467)	Def.	--	(2,467)	NIL	(1.52)	---	---	---
1969	---	( 259)	Def.	--	( 259)	NIL	(0.36)	---	---	---

(a) Record from inception of the Company August 11, 1969.

(b) Range since initial public offering on June 23, 1971 of 375,000 shares at \$10.

N.C. - not calculable.