

# The Year 1998

- Tandberg Data surpassed MNOK 1000 in year revenue
- Tandberg Data surpassed MNOK 100 in revenue for a single month

## OEM agreements

- New OEM agreement with Siemens for deliveries of SLR5 (4/8GB tape drive)
- New OEM agreement with Fujitsu/ICL for deliveries of SLR5 (4/8GB tape drive)
- IBM expands its OEM agreement to include SLR5 for use in AS/400e servers and systems
- New OEM agreement entered into with Acer, for deliveries of SLR32 (MLR1)
- IBM expands its OEM agreement to also include SLR50 (MLR3) for use in the AS/400 series
- Siemens expands its OEM agreement to include SLR50
- Fujitsu ICL Computers expands its OEM agreement to include SLR50

## Partnerships

- Agreement entered into with Overland Data for development and manufacturing of SLR automation products. An agreement was also entered into concerning use of the VR<sup>2</sup> technology in SLR tape drives
- Agreement entered into with Quantum Corporation concerning marketing and licence manufacturing of DLT tape drives
- Agreement with ADIC concerning the production of a DLT auto-loader

## New products

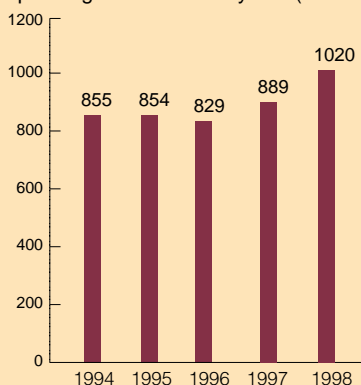
- SLR50 25/50 GB (MLR3) tape drive launched
- Travan product series expanded through introduction of Tandberg NS20, a 20 GB 3.5" tape drive directed at the SOHO entry level market
- Tandberg Data expanded its library range by integrating its SLR50 (50 GB tape drives) in existing library products, thus providing storage capacities of up to 2 TB.
- Tandberg Data introduced SLR24 (24 GB tape drive) on 09.07.98.
- Tandberg Data introduced DLT4000 and DLT7000, based on Quantum's DLT technology, on 14.12.98.
- Tandberg Data introduced its "Advanced Replacement Service – ARS" for all Tandberg Data products.

# 2 Key Financial Figures 1994–1998

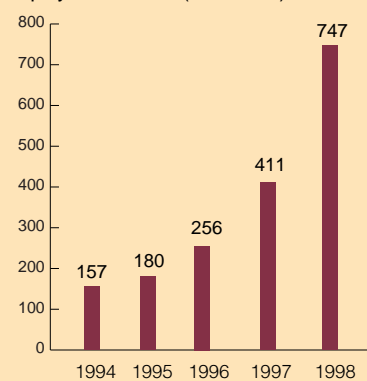
Based on proforma accounting figures for 1994 and 1995 for the Data Storage business

		1998	1997	1996	1995	1994
<b>Revenues</b>						
Operating income	NOK mill.	<b>1 020</b>	889	* 829	854	855
Annual growth in operating income	%	<b>14.8</b>	3.9	- 2.9	- 0.2	16.7
Export Share	%	<b>96.6</b>	97.2	97.7	97.9	97.4
<b>Profit/Loss</b>						
Operating profit	NOK mill.	<b>1.6</b>	66.0	* 49.9	44.0	44.4
Operating profit in % of opr. income	%	<b>0.2</b>	7.4	* 6.0	5.2	5.2
Profit before tax	NOK mill.	<b>- 3.2</b>	70.9	* 42.8	36.7	37.8
Profit before tax in % of opr. income	%	<b>- 0.3</b>	8.0	* 5.2	4.3	4.4
<b>Profitability</b>						
Return on total assets <sup>1)</sup>	%	<b>- 0.04</b>	13.4	* 10.3	8.8	9.2
Return on equity <sup>2)</sup>	%	<b>- 0.5</b>	21.3	* 19.6	20.2	24.0
Return on capital employed <sup>3)</sup>	%	<b>- 2.0</b>	18.6	* 14.7		
<b>Solvency/Liquidity</b>						
Total assets accounted for	NOK mill.	<b>939</b>	605	499	510	492
Equity	NOK mill.	<b>747</b>	411	256	180	157
Equity ratio <sup>4)</sup>	%	<b>79.6</b>	67.9	51.3	35.3	32.0
Liquidity ratio 1 <sup>5)</sup>		<b>4.9</b>	3.2	2.8	1.9	1.7
Liquidity ratio 2 <sup>6)</sup>		<b>3.8</b>	2.1	2.2	1.2	1.1

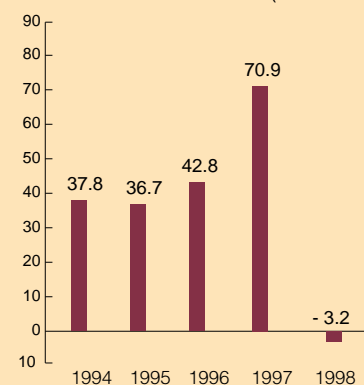
Operating incomes last 5 years (NOK mill.)



Equity 1994-1998 (NOK mill.)



Profit before tax 1994-1998 (NOK mill.)



Shares**		1998	1997	1996	1995	1994
Earnings per share <sup>7)</sup> **	NOK	- 0.31	1.53	* 1.25	1.13	1.07
Cash-flow per share <sup>8)</sup> **	NOK	0.39	2.21	* 1.94	1.87	1.67
Share capital on 31.12	NOK mill.	116.3	103.5	57.6	55.0	55.0
Market price (Oslo Stock Exchange) **	NOK	26.50	85.00	26.33	7.51	4.55
P/E <sup>9)</sup> **		- 84.8	55.5	* 21.1	6.6	4.2
Risk value **	NOK	0.00	1.41	0.33	0.75	0.00

\* Adjusted for contribution from sale of Oslo premises corresponding to NOK 49.0 mill., as well as restructuring costs and guarantee costs amounting to NOK 30.3 mill.

\*\* Adjusted for split of shares in 4 on 28.04.95 and split in 3 on 14.10.97, as well as demerger of ASK ASA in August 1996.

#### Personnel

No. of employees on 31.12		586	640	555	595	584
Salaries and social costs	NOK mill.	279	235	226	208	205
Sales revenue per employee <sup>10)</sup>	NOK 1000	1 741	1 389	1 493	1 435	1 465

1) Return on total assets  

$$\frac{(\text{Profit before extraordinary items} + \text{interest costs}) \times 100}{\text{Average total capital}}$$

4) Equity ratio  $\frac{(\text{Equity on 31/12}) \times 100}{\text{Total assets on 31/12}}$

8) Cash-flow per share  

$$\frac{\text{Profit/Loss for year} + \text{ord. deprec., adjusted for min. interests}}{\text{Average number of shares}}$$

2) Return on equity  

$$\frac{(\text{Profit before extra items}) \times 100}{\text{Average equity}}$$

5) Liquidity ratio 1  

$$\frac{\text{Current assets on 31/12}}{\text{Current liabilities on 31/12}}$$

9) P/E  

$$\frac{\text{Market price}}{\text{Profit per share}}$$

3) Return on capital employed  

$$\frac{(\text{Profit before tax} + \text{debt interest}) \times 100}{\text{Average interest-bearing liability and equity}}$$

6) Liquidity ratio 2  

$$\frac{\text{Liquidities} + \text{short-term receivables on 31/12}}{\text{Current liabilities on 31/12}}$$

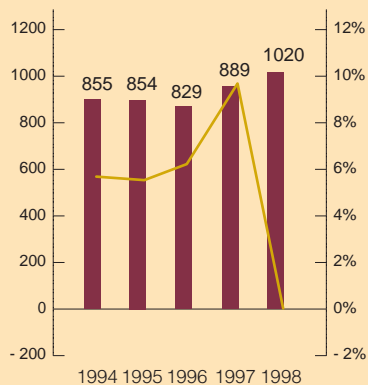
10) Sales revenues per employee  

$$\frac{\text{Sales revenue}}{\text{Average number of employees}}$$

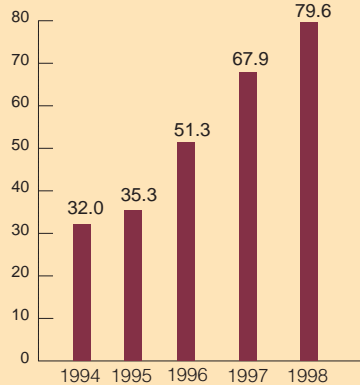
7) Earnings per share  

$$\frac{\text{Profit/Loss for year adjusted for minority interests}}{\text{Average number of shares}}$$

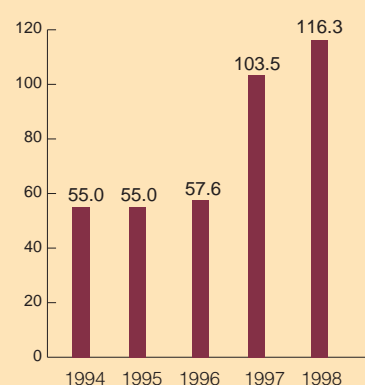
Profit before tax in % of operating incomes



Equity ratio the last 5 years (%)



Share Capital 1994-1998 (NOK mill.)



An SLR24 24GB tape drive

stores just as  
much data  
in three  
hours as a

person . . .

writing ten closely-written  
A4 pages with text every  
day all year round

can produce in 800.000 days, or more than

2190  
years

•The calculation is based on one A4 page  
consisting of 3000 letters.

## Growth in revenues for Tandberg Data in 1998

First half-year 1998 was influenced by a weak global market with decline in revenues. Tandberg Data ASA ("Tandberg Data") was positioned for growth in revenues and consequently the company's cost level was too high. The company experienced shortfalls in turnover especially during the second quarter 1998, and as consequence a negative result.

Based on revenue and profit developments for the first half-year the company initiated activities to increase the revenue and reduce the costs. The company decided to increase the market activities to secure growth in revenues and to reduce the manpower by up to 80 man-years in order to adapt costs and capacity to the expected revenue level.

Second half-year was influenced by the efficiency measures the company had initiated immediately. These measures have provided positive revenue, as well as cost and streamlining effects. At the same time, Tandberg Data experienced improvements in the market for data storage products. Growth in sales during fourth quarter 1998 was 25% compared to fourth quarter 1997 and 47% compared to second quarter 1998. Growth in revenues during the second half-year led to some delay in the planned personnel reductions. The company expects further effect of these reductions during first quarter 1999.

The operating profit improved significantly in the second half-year. From a negative operating profit in the second quarter of NOK -18.5 mill., Tandberg Data achieved a positive operating profit for the fourth quarter of NOK 11.0 mill. Profit before tax developed also positively from a loss in the second quarter of NOK 32.9 mill. to a positive result for the fourth quarter amounting to NOK 21.3 mill.

The company's main goals for 1999 are growth and increased profitability. Through a more market-oriented and cost-effective organization with strong focus on total solutions for the customer, combined with the launch of several new market and customer driven products, the company should be well positioned to achieve these goals. New products include SLR tape drives, automation systems and further expansion of the product portfolio with DLT products.

The company's cost-effectiveness will be further improved based on a review of all areas of Tandberg Data's flow of goods, from raw materials to deliveries of finished products to customers. The company will deploy the opportunities provided by modern Supply Chain Management, with emphasis on module-based production. This will lead to a reduction on the number of suppliers as well as more effective administration of materials and logistics operations. In order to maintain competitiveness it is decisive to maintain control over the value-chain. This includes improved supplier controls, shorter lead times, reduced resource consumption and a reduction in compulsory savings.

With its SLR product line, Tandberg Data possesses a technology and a set of core skills which are among the world-leading technologies within the data storage industry. The company will continue to focus on developing its own products based on this technology.

## Profitability restored and financial positioned strengthened

Tandberg Data restored profitable operations during fourth quarter 1998. In 1998 Tandberg Data's sales revenues amounted to NOK 1.020 mill. compared to a corresponding NOK 889 mill. for 1997. This is equivalent to a growth in revenues of 15%. Sales revenues during the second half-year increased 27.5% compared to the first half-year 1998. Sales revenues for the first half-year were lower than anticipated, mainly due a weak market situation in USA and Asia. The company's market developments during this period were in line with developments experienced by our competitors. This weak market situation continued into the third quarter.

As a consequence of the company budgeting with a considerably higher revenue and activity level for 1998, the cost base in the company increased significantly compared to the year before. The company immediately initiated cost and efficiency measures to adapt cost and activity levels to expected revenues. Reduced revenues and higher costs led to an operating profit for the first half-year of minus NOK 3.3 mill.

Operating profit for 1998 was NOK 1.6 mill. compared to

NOK 66.0 mill. in 1997. Operating profit in % of sales revenues amounted to 0.2% for 1998 compared to 7.4% for 1997. Profit before tax for the Group was a loss of NOK 3.2 mill. in 1998 compared to NOK 70.9 mill. in 1997.

As a result of the Board's decision in June 1998 to change the company's currency policy, Tandberg Data realized a currency loss of NOK 14.4 mill. through out-phasing of existing forward exchange contracts. This resulted in a negative net finance result for the year of NOK 4.8 mill. such that profit before tax was a loss of NOK 3.2 mill. Tandberg Data has maintained its strong financial position during 1998. Equity has been further strengthened during the year. On 31.12.98 equity recorded was NOK 747 mill., representing an equity ratio of 80%. Corresponding equity ratio at end 1997 was 68%.

Tandberg Data carried out a stock issue amounting to NOK 339.5 mill. in March 1998, subject to issue cost deductions of NOK 13.5 mill. As a result, the company's liquidity has been considerably strengthened. Liquidity reserves at year end 1998 were NOK 444 mill.

An important factor for growth in revenues during the second half-year has been the company's increased market and sales activities directed at the distribution market and OEM customers. Several OEM agreements entered into during 1997 and 1998 have led to significantly positive sales developments especially for SLR5 in 1998. At the same time, several product qualification activities have been initiated at our OEM partners for the company's SLR50 product with 50GB storage capacity. OEM agreements for this product were entered into with IBM, Siemens and Fujitsu ICL Computers during first quarter 1999.

Tandberg Data began delivering its new SLR50 tape drive during first quarter 1998. Simultaneously the company launched three new library systems with capacities ranging from 250GB to 2TB based on the new SLR50 tape drive. The SLR24 tape drive, with up to 24GB storage capacity, was introduced during third quarter 1998. The company also launched Tandberg DLT 4000 and Tandberg DLT 7000 on 14.12.98 in USA.

In 1998 sales to OEM customers amounted to 49% of the company's revenues, compared to 59% in 1997. Sales to the distribution market were 51% compared to 41% in 1997. The company's total turnover is geographically divided with 45% to America, 47% to Europe and 8% to Asia.

### **The Market**

The Market for Tandberg Data's products includes areas such as storage, securing, protecting, re-use, restore and administration of digital information. The demand for the company's products for storage of digital information showed a positive development during the second half-year and is expected to grow further over the next few years. Tandberg Data expects that the fastest growth will come within storage of digital information in network systems. Customers increasingly demand unmanned, reliable information storage solutions with higher operational performance ability, maximum operation time and ease of use.

### **Products**

Tandberg Data's product strategy is based on secondary storage of digital information on removable media. The company focuses on the "Entry-Level" and "Midrange" segments in the professional market.

Today, Tandberg Data offers complete solutions for storage of digital information on magnetic tape (media). The product range and the product strategy for the future includes tape drives, automation systems and magnetic tape that are adapted to computer manufacturers' total systems and solutions. In the future the company will place more emphasis on total solutions for the customer, including the introduction of several automation solutions integrating SLR and DLT tape drives.

The company's information storage solutions place great emphasis on performance, reliability, scalability, backward compatibility and system compatibility. With the company's new SLR and DLT products the company is well positioned to strengthen its market position.

Today, Tandberg Data markets three technology platforms – all based on "Linear Recording":

- TravanNS – primarily for the SOHO and “Low End Entry Level” markets
- SLR – primarily for the “Entry Level” market and upwards
- DLT – primarily for the “Midrange” market and upwards.

Tandberg Data will continue to position its SLR products through focus on price-performance, and the DLT products through focus on added-value related to customer support and customer service. The company will increase its resource contributions during the period ahead to ensure that its products obtain wider support from operative systems and software applications in connection with information storage and hardware system platforms. In addition, Tandberg Data will launch a series of automation products during 1999. This will be done to further increase the sales potential for the company's products and is in line with the strategy to develop the company to become an information storage partner with focus on solutions.

Tandberg Data will work at improving its customer support and customer service to become market-leading within these areas.

### Partnerships

In 1999 Tandberg Data will continue the work of developing existing partnerships and establishing new strategic partner-

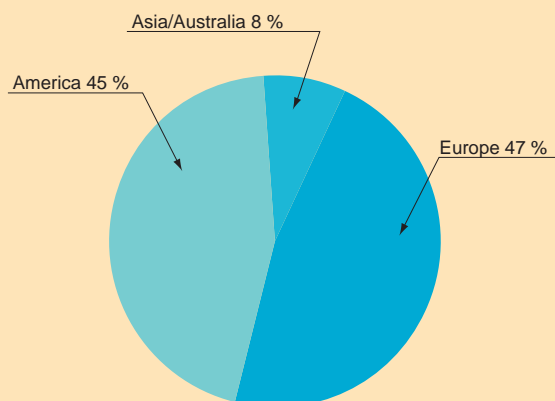
ships as an important contribution to achieving the company's ambitions related to growth in revenues and improved profitability. Tandberg Data will endeavour to establish close, binding co-operation with strategically important partners that can contribute to the company as a whole being more capable of marketing and delivering customer-oriented information storage solutions.

### Overland Data Inc.

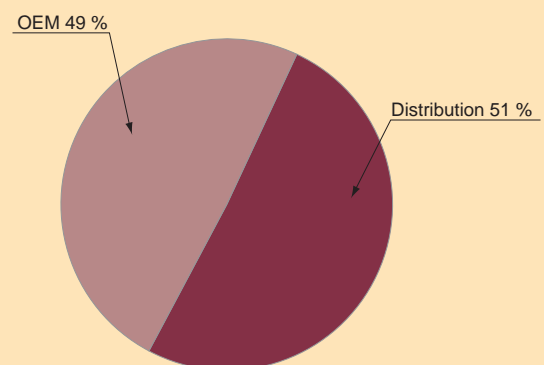
Since April 1998 Tandberg Data has had a strategic partnership with Overland Data. This partnership entails that Overland Data develops, manufactures and integrates automation systems for SLR tape drives. Both Overland Data and Tandberg Data will independently market and sell these SLR automation solutions under their respective trade marks in addition to OEM sales. The first SLR automation solutions from this co-operation will be delivered by the company during second quarter 1999.

The agreement with Overland also includes Tandberg Data's access to Overland's VR<sup>2</sup>-technology. This technology increases both storage capacity and transfer rates for future SLR products. The capacity increase is expected to be 1.5 times today's technology. With the help of this technology, Tandberg Data will increase its competitiveness in the net-

Sales per region



Sales to OEM customers and to distributors



work market, especially compared to DAT and 8mm products, that currently have a market share of approx. 50% of the total market. Tandberg Data is the first company to adopt VR<sup>2</sup> technology on tape.

### Quantum Corporation

In September 1998 Tandberg Data entered into a partnership with Quantum Corporation concerning licence manufacturing and marketing of DLT products – as an independent “second source” supplier. The licence agreement with Quantum is a further step in the growth strategy the company has chosen.

Tandberg Data’s agreement with Quantum is following the time schedules. In the so-called OEM phase (phase 1) Tandberg Data began to deliver Quantum’s DLT 4000 and 7000 tape drives in December 1998. During first quarter 1999 (phase 2) Tandberg Data will commence semi-production of the DLT 7000 products in Oslo. Tandberg Data plans to start full production of DLT 7000 tape drives in Oslo during third quarter 1999. Quantum’s DLT 4000 products will not be manufactured by Tandberg Data. The partnership with Quantum also includes future generations of DLT tape drives.

The agreement with Quantum has also given Tandberg Data a stronger opportunity to direct its own-developed SLR products at the market segment where the company has its established customer base and strongest market position for future growth.

### Tandberg Data’s SLR & MLR technologies combined in one common brand: SLR

Tandberg Data decided in September 1998 to adopt the SLR brand name for all its SLR and MLR products with effect from March 1999. This was done in order to further build on the positive customer experiences of SLR in the market. The previous SLR and MLR products are now brought together in one common brand: SLR – Scalable Linear Recording. This SLR product line of tape drives is characterized by scalability, backward compatibility and very high reliability.

The world’s largest computer manufacturers today using SLR products include IBM, Sun Microsystems, Compaq

Computer Corporation, Siemens and Fujitsu ICL computers. The SLR (incl. MLR) investment in the Entry-Level segment, combined with the common brand for all SLR (incl. MLR) products, is an important contribution to SLR becoming a de-facto standard in the market.

### Sales

#### Distribution Market

To increase sales through the distributor market, special emphasis has been placed during 1998 on further developing a professional and authorized dealer network. In 1998 the company’s share of sales to the distribution market grew from 41% in 1997 to 51% of the company’s total revenues in 1998.

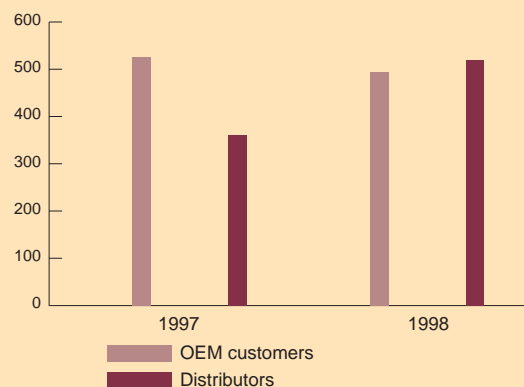
#### OEM Market

Qualification and sales of new products at our international OEM customers are regarded by Tandberg Data as being very important. OEM customers contribute to creating increased demand for our products in the distributor market. Below follows the most significant new OEM launches of SLR products in 1998 and first quarter 1999.

#### New OEM launches and deliveries

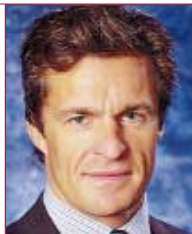
- **IBM**, SLR50 (MLR3) to the AS/400 series (*February 1999*)
- **Siemens-Nixdorf**, SLR50 (*January 1999*)

Sales to OEM customers and distributors 1997—1998 (NOK mill.)





Einar J. Greve

Jan Haudemann  
AndersenÅsmund  
R. Sløgedal

Jon E. Bjørstad

- **Fujitsu ICL Computers**, SLR50 (*January 1999*)
- **Nortel Networks**, SLR5 for use in the company's Call-Pilot unified messaging system. (*January 1999*)
- **Acer America Corp.**, SLR50 tape drive as option in their new Altos 1100 network server (*September 1998*)
- **Lucent Technologies**, SLR5 for use as standard in the company's INTUITY(TM) AUDIX(R) Multimedia Messaging System. (*September 1998*)
- **IBM**, SLR5 to a number of the AS/400 models. (*March 1998*)
- **Siemens**, SLR5 to a number of their new Primergy PC server products launched the same month (*January 1998*)
- **Fujitsu ICL Computers**, SLR5 to Fujitsu teamserver Ci and teamserver Gi single and dual processor servers (*January 1998*)

#### The Sales Channels

The company is working to achieve SLR as de-facto standard in the Entry Level market segment, while positioning the DLT products in the Mid Range segment. The breadth this creates, in addition to Travan NS, means that the company's product portfolio gives Tandberg Data the opportunity to expand its existing customer base through the ability to offer a larger product range.

The company's larger and more competitive product range provides conditions for increasing revenues in both distributor and OEM markets. During the period ahead the company will maintain its strong sales focus in both of these markets. In the distributor market the company will continue its efforts to further develop the professional authorized dealer network. Both in the OEM and distributor markets, special importance is attached to quality improvement measures, increased understanding for the real needs of end-users and dealers, increased system compatibility for the company's products, and better customer support and customer service.

#### Research, product developments and strengthened product portfolio

Research and development is centrally important at Tandberg Data. The establishment of technology partnerships reduces development time and risks associated with the devel-

opment of new products. In 1998 Tandberg Data used 9% of its total revenues for research and development activities. Technology exchange and partnership with suppliers of critical components is also an important part of the company's efforts to create improved profitability through module-based production.

In 1998 a number of new products were launched. Of these, SLR is developed and manufactured by the company itself, while DLT, Travan NS and the library products are manufactured by partners, either according to Tandberg Data specifications or as standard solutions.

#### Year 2000

All data storage products manufactured by Tandberg Data after 1. January 1992 will be able to process data exactly from, to and between the 19. and 20. centuries provided they are used in accordance with Tandberg Data's published specifications.

#### Product launches in 1998

- SLR50 25/50 GB (MLR3) tape drive (*January*)
- 3 new SLR library systems based on SLR50 (*February*)
- TRAVAN NS20 Pro 20GB tape drive for Small Business servers (*July*)
- SLR24 12/24GB tape drive (*July*)
- DLT4000 and DLT7000 products (*December*)

#### Total Quality

In the information storage market Tandberg Data is regarded as a quality supplier. The company intends to maintain this competitive advantage and to further strengthen it through ensuring that quality management continues to be a guiding principle at Tandberg Data. The company will exercise focus on customers and employees, work with ongoing improvements and evaluate contributions through result measurements of different parameters. Through a focus on total quality linked to improvement tasks and results of these across the company's business processes managers and employees will be motivated to secure Tandberg Data's goals.

The company is a member of the European Foundation for Quality Management (EFQM). During the period ahead the



Jan Andresen



Augusto  
Konestabo



Morten Ween

company will focus more on process management. Tandberg Data's quality system was certified according to NS-EN ISO 9001 in 1994.

### Organization

Motivated employees, necessary organizational flexibility, increased skills and increased productivity are prerequisites for future profitable operations.

### Skills, motivation and flexibility

As technology company in a market with rapid changes, skills are an important competitive element. Our future depends on us having correct skills to develop, manufacture, market and sell today's product portfolio in keeping with the customers' needs. In addition we need to exercise the flexibility and sufficient foresight to follow trends and developments in the market.

The skills of our individuals, based on formal education and experience, but also on an ability, will and opportunity to apply these skills, will receive necessary focus, and be updated and maintained in accordance with the challenges Tandberg Data meets. Managers must have necessary knowledge and security to practise management in such a way that employees view their roles in a wider perspective. Through interaction in and between departments workers' involvement and creativity will contribute to increasing Tandberg Data's organizational skills.

One of Tandberg Data's goals is to further develop the skills our company's employees have and through this to ensure that the company can offer the market best possible, cost-effective products. To secure this, the company will strive to pursue a human resource development policy that aims to further develop and secure access to further skills.

### Health, environment & safety

Tandberg Data places significant emphasis on ensuring that the business is operated in such a way as to avoid damage to persons, the external environment or materials. Due regard to health, environment and safety is an integral and natural part of planning and implementation of our business activities.

Among areas of focus for 1999 include an investigation of →

### The Board

#### **Einar J. Greve, (38)** Chairman

Lawyer and partner, Wikborg, Rein & Co. Miscellaneous chairmanships and memberships of Boards in listed and non-listed companies.

#### **Jan Haudemann Andersen, (41)**

Graduate in economics, investor, Board member of ASK Proxima ASA, Q-Free ASA and Nexus Informatics ASA.

#### **Åsmund R. Sløgedal, (62)**

Graduate in Engineering, Purdue University. From 01.04.99 Managing Director of Mosvold-Farsund AS. Previously Director for Investments, Mosvold-Farsund AS. Chairman of the Board, Teknoinvest V. Miscellaneous Board memberships in Norway and USA.

#### **Jon E. Bjørstad, (45)**

MBA, University of Wisconsin, USA. Chairman of the Board, Nexus Informatics ASA. Miscellaneous other Board memberships. Previously Managing Director, Tandberg Data ASA and DnB Finans. Hired as Managing Director of miscellaneous companies.

#### *Employee representatives:*

#### **Jan Andresen, (57)**

#### **Augusto Konestabo, (56)**

#### **Morten Ween, (41)**

### Corporate Assembly

#### *Voted in by the shareholders:*

Tore Egil Holte (Chairman)

Bjørn C. Kaaber

Eivind Astrup

Harald Arnet

Henrik A. Christensen

Svein F. Lien

Birger Nergaard

#### *Voted in by the employees:*

Tom Bjørnsen

Bjørn Stanger

Esther Meier Strømme

Anne Siri Solberg

the company's working environment, establishment of an environmental control system according to the demands of the NS-EN ISO 14001 standard, and completion of safety/security risk analyses. The company's safety protection measures are regarded as satisfactory. Absences due to illness for employees decreased and the figure was 5.7 % for 1998. As far as the company is aware, it does not pollute the atmosphere through its business activities.

### Employees

On 31.12.98 Tandberg Data had 610 employees worldwide (215 women; 395 men), compared to 640 on the same date in 1997. The reduction in the number of employees is mainly due to the company's announced rationalization measures implemented during the third and fourth quarters 1998. At year-end 1998 the employees were distributed between 492 in Norway and 118 in subsidiaries across the world. In December 1998 the company began appointing employees in connection with the future establishment of DLT production.

Hans Christian Qvist replaced Jon E. Bjørstad as new President & CEO of Tandberg Data with effect from 01.03.98. Hans Christian Qvist was ill from the beginning of July 1998. Due to Tandberg Data having undergone several changes during the second quarter 1998 the parties jointly agreed that Qvist resign from his position at Tandberg Data with effect from 1. March 1999. Erik Normann, CFO, Tandberg Data, has been Acting President & CEO during Hans Christian Qvist's leave of absence and has now taken over as President & CEO. In connection with Hans Christian Qvist's retirement he received a one-time lump sum corresponding to two year salaries (NOK 3 mill.). In addition Hans Christian Qvist retains his share option scheme of 350.000 shares approved by the extraordinary general meeting of shareholders at Tandberg Data on 2. July 1998. Exercise price is as previously announced NOK 29 per share with an addition of 1% per month during the option scheme's period to maturity. The option scheme matures on 15. August 2000.

### Shareholder conditions

The current ownership structure is dominated by Norwegian, institutional investors and private finance investors.

Jon E. Bjørstad was elected as new Board Member in March 1998. Tore Egil Holte brought to a close his period as Chairman of the Board in April 1998. Jan Chr. Opsahl was elected new Chairman of the Board in the same month. Einar J. Greve was elected new Chairman of the Board in August 1998.

On 31.12.98 Tandberg Data had 3.802 shareholders, of which 106 were foreign. The foreign share was 14.9 %. In February 1998 Tandberg Data carried out a stock issue directed at management and key personnel with an issue of 772.783 shares at share-price NOK 23.33 per share.

On 20.03.98 Tandberg Data decided to carry out a private placement directed at Norwegian and foreign institutional investors of 3.500.000 shares, each at face value NOK 3.00 per share, at share-price NOK 97.00 per share. The company's share capital was increased by NOK 10.500.000 from NOK 105.774.699 to NOK 116.274.699. The total number of shares following this was 38.758.233. Total issue amount prior to expenses amounted to NOK 339.500.000.

At a general meeting of shareholders held on 21.08.96 the Board was granted authority to increase the company's share capital by up to NOK 2.888.250 through issue of up to 549.000 shares each at face value NOK 5.25 (or an adjusted number and face value in the event of share split), for the purpose of undertaking private placements to the Group's employees in line with the incentive scheme determined by the Board. The Board was granted authority to determine the subscription rate and related conditions. The term of authority is valid until the Annual General Meeting of Shareholders 1999.

In addition the Board was granted authority in the Annual General Meeting of shareholders held on 22.04.98 to increase the company's share capital by up to 700.000 shares, each at face value NOK 3.00, in total NOK 2.100.000, through a private placement to leading employees and at a share-price to be determined by the Board.

As of today, the company has altogether authority to allocate 1.528.776 shares.

At an extraordinary general meeting of shareholders held on 2. July 1998 it was decided to recommend to the Board a change in exercise price from NOK 70,- to NOK 40,- per share in connection with existing share purchase schemes for employees and management.

Shares, as of 31.12.98, owned or administered by members of the Board, the Company Assembly and the President and CEO, are as follows:

<b>The Board</b>	<b>No. of shares</b>
Einar J. Greve	150.000
Jan Haudemann Andersen (Datum as)	4.095.400
Jon E. Bjørstad (Mocca Holding as)	190.000
Åsmund R. Sløgedal (Mosvold-Farsund AS)	2.361.000
Jan Andresen	3.284
Augusto Konestabo	4.524
Morten Ween	2.524

<b>Corporate Assembly</b>	<b>No. of shares</b>
<i>Elected by shareholders:</i>	
Tore Egil Holte (Servus)	10.000
Eivind Astrup (Pactum as)	20.000

<b>President &amp; CEO</b>	<b>No. of shares</b>
Erik Normann (Nebula AS)	25.300

#### **Future prospects**

With the new products launched in 1998, the main part of

the company's existing product portfolio is now well-positioned in the growth part of the total product life-cycle curve. In 1999 Tandberg Data plans further product launches both within Entry-Level (company's SLR products) and Mid-Range (mainly DLT) segments, as well as automation.

It is expected that more OEM agreements will be made for the company's SLR and DLT products in 1999 and that the growth in sales for the company's SLR family will be further strengthened throughout the year. The company will continue the task of creating a stronger market position for SLR and DLT products.

In addition the company will work objectively to position itself as an information storage partner through strategic alliances associated with technology, market and complementary equipment.

#### **Other items**

Remuneration to the Board is outlined in Note 4 in the accounts.

#### **Allocation of Profit/Loss**

Profit before tax for Tandberg Data ASA was negative at NOK 9.143 mill., and after tax negative at NOK 9.152 mill. The Board proposes that the year deficit be covered as follows:

From distributable reserves	NOK 9.152 mill.
Sum covered	NOK 9.152 mill.

*Oslo, 11. March 1999*

Einar J. Greve  
(*sign.*)  
Chairman

Jan Haudemann Andersen  
(*sign.*)

Åsmund R. Sløgedal  
(*sign.*)

Jon E. Bjørstad  
(*sign.*)

Augusto Konestabo  
(*sign.*)

Jan Andresen  
(*sign.*)

Morten Ween  
(*sign.*)

Erik Normann  
(*sign.*)  
President & CEO

The estimated average time interval between each time a technical error occurs on an SLR tape drive is so long,

...

that an employee  
would have to work  
for 166 years with-  
out absence to be  
equally stable!

**Profit and Loss**

Tandberg Data Group

Amounts in NOK 1.000

Tandberg Data ASA

1997	1998		Notes	1998	1997
888 827	1 020 191	<b>Sales Revenue</b>	2	837 298	778 587
428 959	541 216	Cost of materials and inventory changes	3	495 830	422 808
244 957	278 777	Salaries and other personal expenses	4	215 119	189 463
123 161	169 769	Other operating expenses		105 617	79 410
22 738	26 403	Depreciation	15	23 439	20 399
2 984	2 385	Bad debts	9	2 516	3 236
822 799	1 018 550	Total operating expenses		842 521	715 316
66 028	1 641	<b>Operating profit</b>		(5 223)	63 271
6 128	18 991	Interest income		19 000	4 393
2 037	291	Other financial incomes		0	3 098
(3 304)	(1 797)	Interest expenses		(1 122)	(1 726)
0	(22 293)	Other financial expenses		(21 798)	0
4 861	(4 808)	<b>Total financial income and expenses</b>		(3 920)	5 765
70 889	(3 167)	<b>Profit before taxes</b>		(9 143)	69 036
(19 606)	(8 810)	Taxes	7	(9)	(18 885)
51 283	(11 977)	<b>Profit for the year</b>		(9 152)	50 151
(9)	176	Minorities share of Profit	16		
51 274	(11 801)	<b>Corporate profit for the year</b>			
		<b>Parent company's allocations</b>		1998	1997
		<b>Year profit</b>		(9 152)	50 151
		Transferred from/allocated to distributable reserves		(9 152)	50 151

## Balance Sheet

Tandberg Data Group		Amounts in NOK 1.000		Tandberg Data ASA	
31.12.97	31.12.98		Notes	31.12.98	31.12.97
182 641	443 822	<b>Cash and deposits in bank</b>	8	390 743	141 729
147 173	182 754	Accounts receivable	9	127 011	113 224
19 703	27 223	Other short term receivables	10,11	59 145	24 035
166 876	209 977	<b>Total short term receivables</b>		186 156	137 259
172 128	202 362	<b>Total inventories</b>	12	166 743	131 822
521 645	856 161	<b>Total current assets</b>		743 642	410 810
831	1 080	Long term receivables		0	0
0	0	Shares in subsidiaries	13	44 212	44 212
831	1 080	<b>Total long term investments</b>		44 212	44 212
54 901	47 109	Tools and instruments		46 683	54 569
13 996	17 742	Vehicles, EDP equipment & furnishings		12 064	9 581
12 135	16 544	Buildings & building alterations/ fittings		4 296	692
81 032	81 395	<b>Total fixed assets</b>	15	63 043	64 842
81 863	82 475	<b>Total capital assets</b>		107 255	109 054
603 508	938 636	<b>Total assets</b>		850 897	519 864

Tandberg Data Group		Amounts in NOK 1.000		Tandberg Data ASA	
31.12.97	31.12.98		Notes	31.12.98	31.12.97
17 713	6 851	Short term liabilities	19	0	253
61 785	60 797	VAT, tax with holdings, assessed tax, & vac. pay		46 642	46 463
20 261	9 252	Tax payable	7	0	18 848
45 237	78 964	Accounts payable		67 262	41 090
19 674	17 513	Other short term liabilities		15 299	16 526
164 670	173 377	<b>Total short term liabilities</b>		129 203	123 180
1 183	435	Mortgage loans	20	0	0
16 894	8 365	Other long term liabilities		8 349	16 554
9 003	8 621	Pension liabilities	6	8 621	9 003
27 080	17 421	<b>Total long term liabilities</b>		16 970	25 557
788	596	<b>Minority interests</b>	16		
103 456	116 275	Share capital		116 275	103 456
0	0	Legal reserve		118 535	118 535
0	0	Temporary restricted retained earnings		469 914	149 136
307 514	630 967	Group funds		0	0
410 970	747 242	<b>Total equity</b>	17	704 724	371 127
603 508	938 636	<b>Total liabilities and equity</b>		850 897	519 864

**Balance developments (%)**

<b>Assets</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>
Cash and deposits in bank	5	10	40	30	47
Short term receivables	46	34	27	28	22
Inventories	24	28	19	28	22
Fixed assets	25	28	14	14	9

<b>Liabilities and equity</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>
Short term liabilities	44	38	31	27	18
Long term liabilities, deferred tax and minority interests	24	27	18	5	2
Equity	32	35	51	68	80

## Cash Flow Analysis

Tandberg Data Group		Amounts in NOK 1.000	Tandberg Data ASA	
1997	1998		1998	1997
<b>Cash flows from operational activities</b>				
51274	- 11801	Adjustments made to balance the result after tax (loss) against net cash from operational activities:	- 9152	50151
22738	26403	Ordinary depreciation	23439	20399
- 204	- 26	Profit (loss) based on sale of fixed assets	- 26	0
9	- 176	Minority interests		
- 884		Profit based on sale of investments in shares	0	-884
6102	3894	Other	0	0
Changes in operational assets and liabilities:				
- 29841	- 43101	Trade debtors and other short term debts	- 47859	- 35442
- 75408	- 30234	Inventories	- 34921	- 58333
- 14967	33727	Trade creditors	27210	- 18043
6134	- 3149	Accrued costs, social benefits and other liabilities	- 1048	6035
- 753	- 382	Pension liabilities	- 382	- 753
12955	- 11009	Tax payable	- 18848	14648
- 22845	- 35854	Net cash flow from (deployed for) operational activities	- 61587	- 22222
<b>Cash flows from investment activities:</b>				
- 39 455	- 25 512	Payments in connection with purchase of fixed assets	- 21 799	- 36 728
630	185	Deposits in connection with sale of fixed assets	185	630
174	- 249	Net changes long term debts	0	0
1 099		Deposits in connection with sale of shares and other investments	0	1 099
- 37 552	- 25 576	Net cash flow from (deloyed for) investment activities	- 21 614	- 34 999
<b>Cash flows from financing activities:</b>				
8 482	- 10 862	Net changes in short term financing of debts	- 253	- 1 201
- 53 238	- 748	Payments for repayment of long term liabilities	0	- 52 283
- 6 978	- 8 529	Leasing costs paid associated with financial leasing	- 8 205	- 7 318
97 756	342 750	Deposits of new equity	342 750	97 756
46 022	322 611	Net liquid assets from financial activities	334 292	36 954
		Effect of exchange rate changes on cash and cash equivalents	- 2 077	866
- 14 375	261 181	Net increase (reduction) cash and cash equivalents	249 014	-19 401
<b>Cash reserves and reserves of cash equivalents</b>				
197 016	182 641	at beginning of period	141 729	161 130
<b>Cash reserves and reserves of cash equivalents</b>				
182 641	443 822	at end of period	390 743	141 729

# Accounting Principles

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## General

The Group accounts show the total financial result and the total financial position of the parent company and its ownership shares in other companies presented as one entity. Tandberg Data's financial statement is presented in accordance with Norwegian laws and generally accepted accounting standards.

## Consolidation Principles

The Group financial statements show the company's financial position as one single entity. Tandberg Data's consolidated financial statement includes the parent company and the companies where Tandberg Data directly or indirectly owns more than 50% of the shares. The companies are specified in note 12. Minority interests are shown as a separate item in the financial statements. This means that all financial items above the line of minority interests, both in the Profit & Loss accounts and the Balance sheet, include the minority's share of these items.

Transactions and accounts between the corporate companies are eliminated. All internal gains in inventories are eliminated in the financial statement. For consolidation of foreign subsidiaries, the profit & loss statement is converted into NOK according to the year's average exchange rate. Assets and liabilities are converted according to the exchange rate on the date for closing of books. Conversion differences are included directly in the Group's equity.

## Principles related to Classification and Evaluation

The financial statement is based on the basic principles of historic costs, comparisons, going concerns, congruence and conservatism. Liquid assets consist of funds, postgiro, bank deposits and short-term capital bank placings. The classification of current assets includes all assets associated with the flow of goods, and demands refunded within one year, as well as assets that are decided not for permanent ownership or use by the business. All other assets are fixed assets.

Evaluation of current assets is made by taking the lowest of the two figures for 1) acquisition cost, and 2) real value. Fixed assets are evaluated at acquisition cost minus the company's financial depreciations. The Group's trade debtors in NOK are evaluated at lowest value of real value and face value. Provisions for hidden losses are described in note 9.

Inventories are estimated by taking the lowest of the two figures for 1) cost-price according to the "first-in, first-out" principle, and 2) the estimated sales price. The cost price consists of direct materials and direct wages as well as the share of indirect expenses associated with manufacturing and procurement costs for goods purchased. Value of obsolete stock is estimated continuously and reduces the value of inventories.

## Capital Assets

Total fixed assets are recorded in the Balance sheet at acquisition cost plus re-evaluation minus accumulated depreciations. All fixed assets with a cost-price of over NOK 15.000 are capitalised. Improvements are capitalised and direct maintenance is cost-accounted. Depreciations are calculated on a linear basis according to the different assets' financial life-time. For the company's assets, machinery, furnishings and fittings the depreciation period varies from 2–7 years. The shortest life-time is for computer equipment and office automation as well as for investments in manufacturing equipment.

## Short-term Liabilities

Short-term liabilities are liabilities where the final payment date is within one year, including bank-rate limitations for long-term liabilities.

## Provisions for Bad Debts

Individual accruals are made for bad debts when debts are particularly uncertain. There is a special focus on age distribution, the degree of legal right of the debt and on instances for which it is known that the debtor has payment difficulties.

## Guarantee Accruals

Accruals for future product guarantees are based on data from previously incurred guarantee expenses as well as the year's sales revenue and guarantee liability. The guarantee accruals are shown as part of the short-term liabilities.

### **Pension Expenses**

The company has a Group Pension Scheme (secured contributions) for its employees. This provides a defined future pension contribution. The pension contribution is based on the number of accrued years as member of the scheme and wage level at maturity of pension.

### **Income and Cost Recording Principles**

The year accounts are drawn up in accordance with the historic cost principle. Incomes are recorded at the time of contribution. Accounts are registered when costs are due. On termination of product groups, the costs associated are accounted for at time of decision.

### **R&D Expenses**

All costs in connection with research and development are cost-accounted continuously.

### **Tax Expenses**

Tax expenses consist of tax-payable and deferred tax. Deferred tax is calculated on the basis of temporary differences between accounting and tax-related values, the tax rate being that of balance day.

According to Norwegian accounting principles, deferred tax assets (deferred tax advantages) can only be recorded if they are assumed to be realisable, and limited to the size of the company's estimated deferred tax liability.

### **Foreign Currency**

Transactions in foreign currency are converted to NOK according to the exchange rate at time of transaction. Liquid assets, short-term debts and short-term liabilities in foreign currency are recalculated according to the exchange rate at the time of books closing. Long-term liabilities in foreign currency are recalculated to lowest of the year's closing rate and historic rate. Long-term assets in foreign currency are recalculated to highest of the year's closing rate and historic rate.

Long-term debts and liabilities within the same currency are evaluated collectively. Net realised loss disagio is cost-accounted in financial expenses. Net unrealised agio for long-term items are only recorded if they reverse previously registered unrealised disagio.

### **Leasing**

Leasing agreements that transfer the major part of the risk and advantages associated with owning capital equipment to a renter are classified as financial leasing. Assets obtained through financial leasing are activated and depreciate throughout the asset's economic life-time. Correspondingly, the leasing obligation is recorded as a liability. The rent element is recorded as a financial expense, while the capital element is recorded as liability instalments. Leasing agreements that fail to satisfy the above-mentioned demands, are regarded as operational leasing. Leasing costs, in such instances, are recorded as ordinary operative expenses.

### **Future exchange rate contracts**

The company has changed its policy concerning currency hedging and as of 31.12.98 the company has no open future exchange contracts.

### **Share issues**

During 1998, the company has carried out 2 share issues. An issue directed at leading employees in the company was carried out in March, and amounted to a total of 772.783 shares. This increased the company's equity by a total of NOK 16.829.000. A private placement directed at a group of institutional investors was also carried out in March 1998, amounting to a total of 3.500.000 shares. After deductions for issue costs involved this increased the company's equity by a further NOK 325.920.000.

The company's share capital is subsequently NOK 116.3 mill. divided between 38.758.233 shares each at face value NOK 3.00.

## 2. Operating incomes

	(Amounts in NOK 1000)		1998	1997
Operating income			1 020 191	888 827

## 3. Cost of materials

TD Group		(Amounts in NOK 1000)	TD ASA	
1997	1998		1998	1997
457 752	541 984	Purchase of raw materials and goods	501 356	447 455
28 793	768	Changes in inventories, WIP and finished goods	5 526	24 647
<b>428 959</b>	<b>541 216</b>	<b>Total materials consumption</b>	<b>495 830</b>	<b>422 808</b>

## 4. Salaries and other remunerations

President & CEO was ill during the year. Salary and payments to acting President & CEO have been NOK 933.471. In addition comes the value of car and share option scheme. Remuneration to the Board and Corporate Assembly amount to NOK 539.000 and NOK 100.000 respectively. The company's Chairman of the Board has also received a legal fee remuneration of NOK 940.200 for tasks outside the Board's ordinary work. Auditor fees for 1998 are cost-accounted at NOK 682.850. Hereof audit: NOK 253.000, and additional assistance: NOK 429.850. In connection with President & CEO Hans Christian Qvist's retirement on 1. March 1999 a one-time gratuity corresponding two year salaries is paid, in total NOK 3 mill. In addition he maintains his share option scheme of 350.000 shares at exercise price NOK 29.00 per share, with an addition of 1% per month during the shares' term to maturity. The shares mature on 15. August 2000. In addition to the 350.000 shares owned by the previous President & CEO, 150.000 shares have been issued to the Marketing Director at share price NOK 23.00, with an addition of 1% per month during the shares' term to maturity. These shares mature on 31. December 2000.

The Board has on 31. December 1998 authority to allocate 1.528.776 shares to leading employees. In January 1999 the Board approved a total framework for share option schemes to leading employees for 1999 and 2000 limited to a maximum of 1 mill. shares. The shares will have an exercising share-price of NOK 40.00.

## 5. Research and Development Costs

Research and developments costs are included in operating costs. The total research and developments costs for 1996, 1997 and 1998 are NOK 62.921.000, NOK 80.648.000 and NOK 100.576.000 respectively. These costs accumulate for the business in Norway only.

## 6. Pension expenses

Tandberg Data has a group pension scheme covering wages up to 12 G (Norwegian pension authorities). The company's pension scheme is regarded as a benefit plan. The pension scheme covers a total of 458 active and 96 invalid/pensioned employees.

Assumptions for the calculations:

Discount rate	6.0 %	Inflation	2.5 %
Assumed rate of return	7.0 %	Pension adjustments	2.0 %
Salary increase	3.3 %	AFP withdrawal	50.0 %

TD Group		(Amounts in NOK 1000)	TD ASA	
1997	1998		1998	1997
4 163	5 278	The year's pension earnings	5 278	4 163
3 307	3 745	Interest expenses of pension liabilities	3 745	3 307
(2 294)	(3 307)	Assumed return on pension assets	(3 307)	(2 294)
0	(93)	Repayment of implementation gains	(93)	0
502	151	Employer's National Insurance contributions	151	502
<b>5 678</b>	<b>5 774</b>	<b>Net pension expenses</b>	<b>5 774</b>	<b>5 678</b>

TD Group		(Amounts in NOK 1000)	TD ASA	
1997	1998		1998	1997
<b>Pension liabilities</b>				
48 362	63 498	Pension liabilities at the beginning of the year	63 498	48 362
3 352	4 973	The year's pension earnings	4 973	3 352
3 307	3 745	Interest expenses of pension liabilities	3 745	3 307
4 825	(93)	Repayment of implementation (gains) / losses	(93)	4 825
(2 236)	(1 943)	Pension payments	(1 943)	(2 236)
<b>57 610</b>	<b>70 180</b>	<b>Pension liabilities at the end of the year</b>	<b>70 180</b>	<b>57 610</b>
<b>Pension funds</b>				
41 227	45 513	Pension funds at the beginning of the year	45 513	41 227
1 161	3 307	Expected dividends	3 307	1 161
4 265	4 680	Pension premium deposits	4 680	4 265
(1 165)	(1 230)	Pension payments	(1 230)	(1 165)
45 488	52 270	Pension funds at the end of the year	52 270	45 488
<b>Net liabilities</b>				
12 122	17 910	Net pension liabilities	17 910	12 122
(3 731)	(4 161)	Not profit & loss accounted estimation changes	(4 161)	(3 731)
0	(5 386)	Not profit & loss accounted implementation effect	(5 386)	0
612	258	Employer's contribution	258	612
<b>9 003</b>	<b>8 621</b>	<b>Net pension liabilities on 31.12.</b>	<b>8 621</b>	<b>9 003</b>

Pension benefits concern parent company only. The subsidiaries have no benefit plans.

## 7. Taxes

TD Group		(Amounts in NOK 1000)	TD ASA	
1997	1998		1998	1997
<b>The year's tax expenses</b>				
18 848	0	Tax payable for the year's taxable profit	0	18 848
37	9	Tax previous year	9	37
721	8 801	Tax for foreign subsidiaries	0	0
19 606	8 810	The year's tax expenses	9	18 885

The tax effects of temporary differences and deficits carried forward that have given rise to deferred tax and deferred tax advantages (obligations) as of 31. December 1997 and 1998 are shown below: Tax rates in the different countries are used during calculation of the tax effect for the different advantages.

TD Group		(Amounts in NOK 1000)	TD ASA	
1997	1998		1998	1997
		<b>Short-term items</b>		
480	1 180	Trade debtors	1 180	480
1 615	521	Inventories	521	1 615
7 489	11 761	Allocations	3 575	4 092
		<b>Long-term items</b>		
- 7 900	- 750	Fixed assets	- 750	- 7 899
1 600	511	Other assets	2 373	2 373
2 521	2 414	Pension liabilities	2 414	2 521
4 101	6 048	Loss to be carried forward	0	0
9 906	21 686	TOTAL	9 314	3 181
- 9 906	- 21 686	Reduction due to upper limit rule	- 9 314	- 3 181
0	0	<b>Deferred tax advantage / deferred tax liabilities</b>	0	0

Estimated RISK amount on 01.01.1999 is NOK 0.00 per share.

## 8. Liquidities

Tax deductions tied up for Tandberg Data ASA amount to NOK 9.327.095.

## 9. Trade debtors

TD Group		(Amounts in NOK 1000)	TD ASA	
31.12.97	31.12.98		31.12.98	31.12.97
151 551	193 261	Trade debtors gross	131 227	114 937
-4 378	-10 507	Allocations for hidden losses	-4 216	-1 713
<b>147 173</b>	<b>182 754</b>	<b>Trade debtors 31.12.</b>	<b>127 011</b>	<b>113 224</b>
<b>2 984</b>	<b>2 385</b>	<b>Loss on demands in the accounts</b>	<b>2 516</b>	<b>3 236</b>

## 10. Group receivables and debts

Including the following intercompany accounts for TD ASA accounts:

(Amounts in NOK 1000)	TD ASA	
	31.12.98	31.12.97
Trade debtors	78 437	54 693
Other short-term receivables	42 762	16 022
Supplier liabilities	2 939	3 719
<b>Total intercompany accounts for the Group</b>	<b>124 138</b>	<b>74 434</b>

## 11. Other short-term receivables

TD Group		(Amounts in NOK 1000)	TD ASA	
31.12.97	31.12.98		31.12.98	31.12.97
257	9 609	Employee-related receivables	2 354	114
7 407	12 808	VAT recoverable	11 722	7 007
12 039	4 806	Prepayments to suppliers	2 307	892
0	0	Receivables: subsidiaries	42 762	16 022
<b>19 703</b>	<b>27 223</b>	<b>Total other short-term receivables</b>	<b>59 145</b>	<b>24 035</b>

## 12. Inventories

TD Group		(Amounts in NOK 1000)	TD ASA	
31.12.97	31.12.98		31.12.98	31.12.97
85 750	113 485	Raw materials	113 327	85 663
19 140	19 822	Work in process	19 822	19 140
84 863	85 790	Finished goods	44 878	39 515
(17 625)	(16 735)	Provision for obsolete goods	(11 284)	(12 496)
<b>172 128</b>	<b>202 362</b>	<b>Total inventories</b>	<b>166 743</b>	<b>131 822</b>

## 13. Shares in subsidiaries

(Amounts in NOK 1000)	Currency	Share Capital	Owner-ship in %	Book value 31.12.97	Book value 31.12.98
Tandberg Data Storage AS	NOK	50	100.0%	50	50
Tandberg Data GmbH	DEM	5 200	100.0%	12 725	12 725
Tandberg Data Inc.	USD	1 000	100.0%	6 000	6 000
Tandberg Data SA	FRF	8 100	100.0%	10 877	10 877
Tandberg Data Japan	JPY	1 400 000	100.0%	7 730	7 730
Tandberg Data Asia	SGD	1 500	87.0%	5 804	5 804
Tandberg Data UK	GBP	100	100.0%	1 026	1 026
<b>Total shares in subsidiaries</b>				<b>44 212</b>	<b>44 212</b>

## 14. Shares in other companies

(Amounts in NOK 1000)	Currency	Ownership in %	Book value 31.12.97	Book value 31.12.98
HGL Int. AB	SEK	5.0	0	0
<b>Total shares in other companies</b>			<b>0</b>	<b>0</b>

The shares in HGL Int. AB were acquired in connection with our sale of Tandberg Data Display AS to HGL Int. AB in March 1996. The shares are recorded at cost-price NOK 1.00

## 15. Fixed assets

Tandberg Data ASA	Tools and instruments	Vehicles, equipment and fittings	Building alterations & fittings	Total
(Amounts in NOK 1000)				
Original cost 1.1.	149 998	58 329	705	209 032
Add-in	9 550	8 575	3 674	21 799
Disposal	804	138	0	942
Total original cost 31.12.	158 744	66 766	4 379	229 889
Accumulated depreciations 1.1.	94 784	48 610	13	143 407
The year's depreciations	17 277	6 092	70	23 439
Total accumulated depreciations	112 061	54 702	83	166 846
<b>Total book-accounted value 31. Dec.</b>	<b>46 683</b>	<b>12 064</b>	<b>4 296</b>	<b>63 043</b>

Tandberg Data ASA	Tools and instruments	Vehicles, equipment and fixtures	Building alterations & fittings	Total
<b>(Amounts in NOK 1000)</b>				
Original costs 1.1.	151 288	75 999	16 161	243 448
Add-in	9 828	12 010	3 675	25 512
Disposal	804	1 078	0	1 882
Currency adjustments	150	1 448	1 624	3 222
Total original costs 31.12.	160 462	88 379	21 460	270 300
Accumulated depreciations 1.1.	96 387	62 003	4 852	163 242
The year's depreciations	17 679	8 247	477	26 403
Currency adjustments	(714)	387	(413)	(740)
Total accumulated depreciations	113 352	70 637	4 916	188 905
<b>Total book-accounted value 31. Dec.</b>	<b>47 110</b>	<b>17 742</b>	<b>16 544</b>	<b>81 395</b>

#### Investments and disposals

<b>(Amounts in NOK 1000)</b>	1998		1997		1996	
	Add-on	Disposal	Add-on	Disposal	Add-on	Disposal
Fixtures and fittings	18 125	942	36 023	16 198	11 835	3 302
Buildings	3 674	0	705	0		80 307
<b>TOTAL TANDBERG DATA ASA</b>	<b>21 799</b>	<b>942</b>	<b>36 728</b>	<b>16 198</b>	<b>11 835</b>	<b>83 609</b>

Fixtures and fittings	21 837	1 882	38 709	17 159	12 964	11 053
Buildings	3 675	0	746	0	0	86 668
<b>TOTAL TANDBERG DATA GROUP</b>	<b>25 512</b>	<b>1 882</b>	<b>39 455</b>	<b>17 159</b>	<b>12 964</b>	<b>97 721</b>

<b>(Amounts in NOK 1000)</b>	1995		1993/94	
	Add-on	Disposal	Add-on	Disposal
Fixtures and fittings	43 076	575	20 118	3 579
Buildings	0	0	3 067	1
<b>TOTAL TANDBERG DATA ASA</b>	<b>43 076</b>	<b>575</b>	<b>23 185</b>	<b>3 580</b>
Fixtures and fittings	48 615	2 704	30 544	62 792
Buildings	40	2 306	2 258	1
<b>TOTAL TANDBERG DATA GROUP</b>	<b>48 655</b>	<b>5 010</b>	<b>32 802</b>	<b>62 793</b>

#### 16. Minority interests

(Amounts in NOK 1000)

Minority interests on 31.12.97	788
Minority share of the year's net profit	(176)
Reduction minority interests	0
Changes in conversion differences	(16)
Minority interests on 31.12.98	596

## 17. Equity for Tandberg Data ASA

(Amounts in NOK 1000)	Share Capital	Legal Reserves	Redemp. Funds	Total Equity
Tandberg Data ASA 31.12.97	103 456	118 535	149 136	371 127
Employee share issue February 98	2 319		14 511	16 829
Issue March 98	10 500		315 420	325 920
The year's deficit			(9 152)	(9 152)
<b>Equity on 31.12.98</b>	<b>116 275</b>	<b>118 535</b>	<b>469 915</b>	<b>704 724</b>

At year-end, the share capital consists of a total of 38.758.233 shares.

## Equity for Tandberg Data Group

(Amounts in NOK 1000)	Share Capital	Consol. Reserves	Total Equity
Equity on 31.12.97	103 456	307 514	410 970
Employee issue February 98	2 318	14 511	16 829
Issue March 98	10 500	315 420	325 920
The year's deficit		(11 800)	(11 800)
Conversion difference, change in year		5 323	5 323
<b>Equity on 31.12.98</b>	<b>116 274</b>	<b>630 968</b>	<b>747 242</b>

## 18. Earnings per share

Earnings per share is calculated by taking the year's profit adjusted for minority interests divided by the average number of shares during the period.

	Year profit after min. int.	Average no. shares	Earnings per share
Earnings per share 1997	51 274	33 453 052	1,53
Earnings per share 1998	- 11 801	37 754 486	- 0,31

## 19. Short-term deduction facilities

(Amounts in NOK 1000)	Interest Rate	Amount in Currency	Amount in NOK
Dresner Bank	3.5 %	DEM 1.500	6 851

Tandberg Data ASA had on 31.12.98 an unexercised short-term deduction facility in Skandinaviska Enskilda Banken amounting to a total of NOK 140 mill. This consists of a short-term deduction facility of NOK 90 mill., as well as a multi-currency bank overdraft of NOK 50 mill. Mortgage in the company's trade debtors and inventories is taken as security.

## 20. Mortgages and guarantee liabilities

TD Group		(Amounts in NOK 1000)	TD ASA	
31.12.97	31.12.98		31.12.98	31.12.97
1 183	435	Secured by mortgages	0	0
10 814	11 674	Book value of mortgaged buildings	0	0
16 553	8 349	Debts secured in assets	8 349	16 553
0	0	Guarantees for subsidiaries	0	8 418

Of the company's total long-term liabilities, NOK 0.4 mill. is secured in buildings. Of the company's other liabilities NOK 8.3 mill. is secured in assets.

## 21. Leasing / building rent agreements

Tandberg Data ASA has ongoing leasing responsibilities for vehicles amounting to NOK 2.150.000 per year, until mid-year 2001. The company's premises in Kjelsåsveien 161, Oslo, Norway were sold in December 1996, and rented back for a period of 11 years, with the right to a further extension of 5 + 5 years. Annual rent is NOK 10.5 mill. adjusted for consumer price index.

Part of the company's and the group's production equipment is financed by financial leasing. Annual liability amounts are listed below. After expiry of leasing period, the company has the right to continue the leasing arrangement at reduced leasing cost.

1999	5 592
2000	3 207
2001	140
2002 and thereafter	—
<b>Total</b>	<b>8 939</b>
<b>Long term liabilities</b>	<b>8 349</b>

## 22. Comparative figures 1994 - 1998 for the Group

(Amounts in NOK 1000)	1998	1997	1996	1995	1994
<b>Operating incomes</b>	<b>1 020.2</b>	<b>888.8</b>	<b>877.8</b>	<b>853.7</b>	<b>855.4</b>
Operating expenses	1 018.6	822.8	809.1	809.7	811.0
<b>Operating profit</b>	<b>1.6</b>	<b>66.0</b>	<b>68.7</b>	<b>44.0</b>	<b>44.4</b>
Total finance items	(4.8)	4.9	(7.1)	(7.6)	(7.4)
Share of profits in associated companies	0.0	0.0	0.0	0.3	0.8
<b>Profit before tax</b>	<b>(3.2)</b>	<b>70.9</b>	<b>61.6</b>	<b>36.7</b>	<b>37.8</b>

## 23. Geographic distribution of Data Storage revenues

The geographic distribution of sales is based on the customers' localisation.

(Amounts in NOK 1000)	1998	1997	1996	1995
Europe	495 292	403 950	360 507	412 345
USA	456 335	389 850	351 390	366 244
Asia	64 442	95 027	116 855	75 127
Africa	4 122			
<b>Total operating incomes</b>	<b>1 020 191</b>	<b>888 827</b>	<b>828 752</b>	<b>853 716</b>

# Auditor's report

to the Annual General Meeting of Shareholders in Tandberg Data ASA

## **Audit Report 1998 (translation from Norwegian)**

We have audited the financial statements for Tandberg Data ASA for 1998, showing an annual deficit of NOK 9.152.000 for the parent company and an annual deficit of NOK 11.801.000 for the group. The financial statements, consisting of the Board of Directors' report, profit and loss account, balance sheet, cash flow statement, notes and consolidated financial statements, have been presented by the company's Board of Directors and its President & CEO.

Our responsibility is to examine the company's financial statements, the accounts and accounting records and other related matters. We have performed the audit in accordance with the relevant laws, regulations and generally accepted auditing standards. We have performed the audit procedures which we have considered necessary to confirm that the annual report and accounts are free of material errors or misstatements. We have examined on a sample basis the evidence supporting the accounting items and assessed the accounting principles applied, the estimates made by management, and the overall financial statements' content and presentation. To the extent required by generally accepted auditing standards we have reviewed the company's management routines and internal controls.

The Board's proposal to cover the year deficit is in accordance with the requirements of the Joint Stock Companies' Act.

In our opinion, the financial statements are prepared in accordance with the Joint Stock Companies' Act and present fairly the financial position of the company and the group as of 31.12.98, and the result of the operations in the accounting year in compliance with generally accepted accounting principles.

Oslo, 11. March 1999

**PricewaterhouseCoopers DA**



Erling Elsrud

State Authorized Public Accountant (Norway)

## **Statement of the Company Assembly to the Annual General Meeting**

The company assembly made the following recommendation to the Annual General Meeting:

"In a meeting held on 18. March 1999, the Company Assembly decided to recommend that the Annual General Meeting approve the Board's proposed Financial Statements for Tandberg Data ASA (parent company) and the Tandberg Data Group, as well as the Board's proposal to cover the negative year result from the distributable reserves of Tandberg Data ASA."

Oslo, 18. March 1999



**Tore Egil Holte**

Chairman, Company Assembly

# Shareholders and Shareholder policy

## Goals for our Shareholders

Tandberg Data's goals relate to all areas of the company's business activities. One of these goals is to maximise return on investments for our shareholders. It is the company's opinion that this is best achieved by focusing on growth in sales revenue and profits.

## Share-Price Developments

The positive share-price developments in 1997 stagnated during 1st. Quarter 1998, and subsequently declined significantly throughout the 2nd. and 3rd. Quarter. In the 4th. Quarter, and the first two months of 1999, the Tandberg Data share gradually increased in value. At the start of 1998 the share-price of the Tandberg Data share was NOK 85.00. On 31.12.1998 the share-price of the Tandberg Data share was NOK 26.50, capitalizing the company at NOK 1.027 mill.

The decline in share-price for the year period was 68.8%.

During the same period the total index of Oslo Stock Exchange fell by 26.7%. The liquidity of the Tandberg Data share throughout the year has been good with a turnover rate for the number of shares issued of 204.3%. The Tandberg Data share was the fifth most liquid share on the Oslo Stock Exchange, related to capitalized value.

During 1998 the company carried out 2 private placements.

In February 1998 Tandberg Data ASA carried out an issue of 772.783 shares, at share-price NOK 23.33 per share, directed at key employees.

On 20.03.98 Tandberg Data decided to carry out a private placement of 3.500.000 shares, each at face value NOK 3.00 per share and share-price NOK 97.00 per share, directed at Norwegian and foreign institutional investors. The company's share capital was increased by NOK 10.500.000 from NOK 105.774.699 to NOK 116.274.699. The total number of

Share Price Developments – Tandberg Data



shares after this issue was 38.758.233. The total issue amount prior to expenses amounted to NOK 339.500.000.

At the Annual General Meeting of shareholders held on 22. April 1998, the board was granted authority to increase the company's share capital by up to 700.000 shares, each at face value NOK 3.00, and in total NOK 2.100.000,- through a private placement directed at leading employees and operative board members at a share-price to be decided by the Board.

In an extraordinary general meeting of shareholders held on 2. July 1998, a decision was made to recommend to the Board a change in exercise price from NOK 70.00 to NOK 40.00 per share in connection with existing share purchase arrangements for employees and management.

#### Information – Investor Relations

It is important that the market be given prompt and relevant information regarding the company's business goals and vision in order for the share-price to reflect the company's developments. In addition to the Annual Report, Tandberg Data publishes Quarterly Reports with key figures. The company also holds presentations for individual investors and shareholders and also for larger groups both in Norway and abroad. Tandberg Data strives to provide ongoing information to the market concerning events that can have a bearing on determination of the share-price.

#### Composition of Shareholders

At the end of 1998, Tandberg Data had 3.802 shareholders, of which 106 were foreign. 14.9 % of the shares were owned by foreign investors.

The 20 largest shareholders as of 08.03.1999 are listed below.

Largest shareholder as of 08.03.1999 was Datum AS with 10.6% of the share capital.

#### The 20 largest shareholders as of 08.03.99

		<i>No. shares</i>	<i>%</i>
		<i>as of 08.03.99</i>	<i>share</i>
Datum AS	NOR	4 095 400	10.6
Mosvold-Farsund AS	NOR	2 361 000	6.1
Kommunal Landspensjonskasse	NOR	1 916 150	4.9
Adrian AS	NOR	1 530 000	3.9
State Street Bank & Trust Co.	USA	1 474 313	3.8
Hartog & Co. AS	NOR	1 100 000	2.8
Horisonten AS	NOR	970 000	2.5
Verdipapirfondet Delphi Norge	NOR	900 000	2.3
Cedel Bank	LUX	798 400	2.1
Storebrand Livsforsikring AS	NOR	790 000	2.0
Norsk Hydros Pensjonskasse	NOR	775 000	2.0
Pinnacle AS	NOR	750 000	1.9
Omega Investment Fund	NOR	679 350	1.8
Industrifinans Aktiv	NOR	601 000	1.6
Aksjefondet Gambak	NOR	600 000	1.5
Armadillo AS	NOR	580 000	1.5
Vital Forsikring AS	NOR	545 800	1.4
Vår Livsforsikring AS	NOR	541 000	1.4
Voldberg, Tore Aksel	NOR	540 012	1.4
Leif Høegh & Co. Shipping AS	NOR	460 000	1.2

If all tape drives already sold by

# Tandberg Data

take one backup each,

it would correspond to the  
same amount of informati-  
on

as if all

# people

in the  
world  
received  
a book  
of 420  
pages.

# 34 Tandberg Data faces the challenges



Erik Normann

For Tandberg Data, 1998 has been a year filled with challenges. After a turbulent first half-year with failing revenues and a negative result the company has achieved, during the course of the year, significant growth in revenues and recovered profitability.

Second half-year 1998 was characterized by positive market developments and also positive effects derived from the activities the company immediately initiated to increase sales and improve cost efficiencies.

The company's goals for the second half-year included surpassing 100 MNOK in revenues for a single month, achieving 300 MNOK in revenues in a single quarter, and breaking through the 1000 MNOK revenue limit for the year.

All of these goals were achieved during fourth quarter 1998. The company's planned streamlining measures have been put into effect and Tandberg Data is in the process of adapting its cost structure to expected market developments. The company's financial position has been further strengthened during the year, thus providing good conditions for reaching the company's future goals.

The market is again experiencing growth. Tandberg Data has the necessary products in its product portfolio to make use of this position. The company continues to pursue the task of market orientating its business. The balance between focusing on the customer, exceeding the customer's expectations for product and service, and at the same time retaining a correct technological focus represents a challenge for the time ahead. Tandberg Data wishes to be regarded as a market-oriented technology company.

As a consequence of the licence agreement entered into with Quantum regarding marketing and manufacturing of DLT tape drives, the company has adjusted its product positioning of the SLR (and MLR) products to focus these on the professional entry level segment. The midrange segment is covered with the assistance of the DLT product line. The company will, with undiminished strength, maintain the current focus on sales and the further development of the SLR product line, including automation products.

The company is now well positioned for exploiting current market potential, and new strategic partnerships will be important in order to achieve the company's growth and positioning strategy. As an "Information Storage Partner" Tandberg Data will endeavour to establish close co-operation and commitments with strategically important partners.

The future within information storage offers significant opportunities.

Tandberg Data is well positioned and views the coming years with optimism.

*Erik Normann*

*(sign.)*

*President & CEO*

*Tandberg Data ASA*

# Tape Information Storage



The demand for storage of digital information within the professional market is expected to grow continuously during the years immediately ahead. Within this market segment fastest growth is anticipated for information storage solutions and network systems.

This trend increases the need for very reliable and intelligent information storage units, systems and solutions of high quality. Customers increasingly request unattended information storage solutions offering improved operational performance, maximum active period of operation and simplicity of use.

## Market prospects

Within the *Entry-Level* and *Midrange* market segments, the global market in 1998 for digital information storage on magnetic tape, measured in revenues, was:

- US\$ 2.4 billion for tape drives  
(source: *Dataquest, August 1998*)
- US\$ 1.2 billion US\$ for automation products  
(source: *Freeman 1998*)
- US\$ 1.6 billion for magnetic tape media  
(source: *Peripheral Research 1998*)

Due to leading price-performance rates, tape-based information storage is expected to grow continuously and to remain the leading media for digital information storage within small to medium-sized and large organizations. The market for unattended, magnetic tape based automation systems with tape drives integrated will increase at a faster pace than for tape drives alone.

Two special technologies predominate among the different digital information storage products on the market. These are:

- *Linear Recording* used in Travan NS, SLR (and MLR) and DLT as well as the new LTO technology supported by IBM, Seagate and Hewlett Packard (expected in the market from the year 2000).

- *Helical Scan* used in DAT(DDS) and 8mm products.

Global revenues for the Linear Recording technology continued to grow. This technology strengthened its market position in 1998 and is expected to grow to more than 60% of global market revenues in the year 2002 .

The explanation lies in this technology's leading performance, reliability, scalability, backward compatibility and price-performance ratio.

New tape drives partly based on new technologies and that are expected to be announced as available on the market during the next two years, will probably face difficulties in achieving market acceptance due to the lack of compatibility with customers' existing installations.

## Markets and products

Tandberg Data focuses today on the professional market for so-called *secondary-storage* digital storage of information on magnetic tape. The company focuses on the *Entry-Level* and *Midrange* market segments. The products are sold worldwide through the world's leading manufacturers of computer systems, so-called OEM customers, as well as through a global network of distributors and dealers.

Today, with its Travan NS, SLR and DLT product groups, Tandberg Data offers the market's widest product range of digital information storage solutions within the Entry Level and Midrange segments. In addition to customer-adapted OEM solutions, Tandberg Data also offers several market-oriented information storage configurations sold through distributors and dealers across the world. These solutions are supported by all of the most important operative systems and software applications.

The product strategy is based on the possession of a multi-technological platform and the ability to offer complete solutions for information storage on magnetic tape. The solutions include tape drives, automation systems and magnetic tape (media) adapted to computer manufacturers' total systems and solutions.



NS 20



SLR24



SLR 50

**New main products from Tandberg Data in 1998**

Tandberg Data introduced the following products in 1998 to further strengthen its competitive situation:

**• Travan NS Product Group:**

– *Tandberg NS20 products – available on the market from July 1998*

The Travan NS product group was expanded with the introduction of a new high capacity tape drive – Tandberg NS20 Pro – in July 1998. This product offers 20GB storage capacity and a transfer rate of 7.2GB per hour (assuming 2:1 data compression).

**• SLR Product Group:**

– *Tandberg SLR50 (previously MLR3) – available on the market from 1st. quarter 1998*

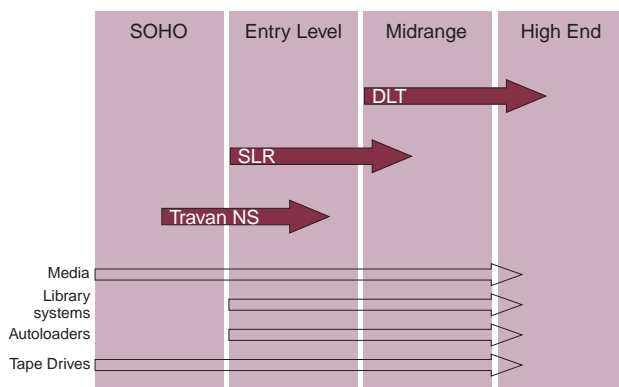
The company commenced deliveries of its new Tandberg SLR50 tape drive from first quarter 1998. SLR50 has 50GB storage capacity and a transfer rate of 14.4GB per hour (assuming 2:1 data compression)

At the same time the company launched three new library systems with capacities ranging from 250GB to 2TB, all based on the new SLR50 tape drive.

– *Tandberg SLR24 – on the market from July 1998*

The SLR product group was further strengthened by the

**Product strategy and market positioning**



introduction of the new high capacity, very reliable and competitively priced Tandberg SLR24 tape drive in July 1998. This product offers 24GB storage capacity and a transfer rate of 8.6GB per hour (assuming 2:1 data compression).

The SLR product line now offers storage capacities ranging from 0.5GB to 50GB with transfer rates between 0.7GB and 14.4GB per hour (assuming 2:1 data compression).

– *SLR products with 3 years guarantee.*

Since May 1998 Tandberg Data offers 3 years guarantee for its flagship products: – SLR5 4/8GB\*, SLR24 (SLR6) 12/24GB\*, SLR32 (MLR1) 16/32GB\* and SLR50 (MLR3) 25/50GB\*.

– **Advanced Replacement Service (ARS) Program**

Tandberg Data’s strategy is to be “Best in Class” concerning customer service. Since May 1998 Tandberg Data has expanded its customer service program to offer customers a two day Advanced Replacement Service program.

The customer receives a replacement product within two days for a product that fails during its first year.

The customer is also given the opportunity to extend the ARS period by two or three years. This service comes in addition to the fact that the company’s SLR portfolio represents the industry’s most reliable product line.

**• DLT Product Group:**

– *Tandberg DLT4000 and DLT7000*

Tandberg Data launched DLT4000 and DLT7000 in the market December 1998.

– *DLT tape drives with two days ARS program as for SLR tape drives*

The company will focus on offering better customer support and better customer service to stimulate and satisfy customers’ demands for Tandberg Data’s DLT products.

\* = assuming 2:1 data compression



DLT 4000

DLT 7000

SLR Autoloader

DLT Autoloader

**Tandberg Data products in 1999 and beyond**

For digital information storage solutions within our chosen market segments, Tandberg Data will continue to utilize the Travan NS, SLR and DLT technology platforms. These product groups will include complete information storage solutions within each technology and consist of tape drives, automation systems and magnetic tape (media) adapted to computer manufacturers' systems and solutions.

- The company will further strengthen and further develop the tape drives' and the automation systems' compatibility with the operative systems and software applications used in association with information storage and hardware system platforms.

- The product plans also include a complete product portfolio of automation solutions for the *Entry-Level* and *Midrange* market segments. As first step in this direction, during first quarter 1999 Tandberg Data launched autoloaders for both SLR and DLT.

- Furthermore, during third quarter 1999 the company will introduce the SLR100 tape drive with up to 100 GB storage capacity and a transfer rate of 36GB per hour (assuming 2:1 data compression). SLR100 will also be integrated in automation systems.

- SLR tape drives (from 0.5GB to 100GB storage capacity during 1999) are recognized for :

- Offering the industry's best scalability
- Offering the industry's best backward compatibility
- Offering the industry's most reliable tape drives
- Offering very competitive total ownership costs
- Being chosen and recommended by the world's leading OEM computer manufacturers

- Tandberg Data will uphold its high level of research and development associated with new competitive information storage products. With the planned new SLR products' increased performances, their favourable combination of scalability, backward compatibility, high reliability and advant-

ageous price-performance ratio, will allow SLR to be able to win further market shares during the years ahead.

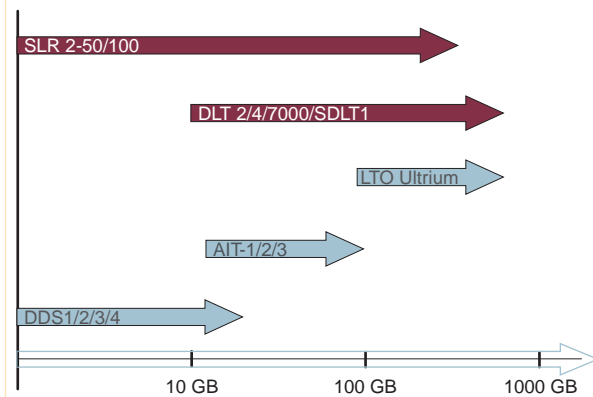
- The company will continue to improve its customer support and customer service in order to be market-leading within these areas.

- The company is also working continuously to acquire increased knowledge of the customers' requirements and demands within each respective market area. This work is ongoing to be able to offer an attractive and wide product portfolio as well as to become the preferred supplier and partner-in-cooperation for the Entry-Level and Midrange markets.

**Technology leader within "Linear Tape"**

Within information storage on tape there are currently two main technologies in the market: "Linear" and "Helical Scan". Both of these technologies have different types of cassettes and data formats. The most important product types within the linear group are DLT, Magstar, Magstar MP, SLR (and MLR) and Travan.

**Capacity developments**



The figure shows capacity developments for the most important tape technologies based on expected technological developments over the next six to seven years.

Within the helical scan area the main technology platforms are 8mm and 4mm (DDS). The 4mm platform has dominated the entry-level market for some time, while linear technology in general has retained a firm hold on the midrange to high-end of the market.

Today we witness a clear shift of focus towards the dominance of linear technology within all segments of the professional market. There are mainly two reasons for this:

- 1) DDS, which is interpreted by many to be one of the de facto standards within the Helical Scan area, is beginning to meet the physical limitations embedded in this technology and will probably face difficulties in continuing to meet demands for capacity, transfer rate and quality. (8mm technology can go a little further, but also has its own limitations).
- 2) New technological advancements within linear tape will now allow products from this technology to be stretched considerably far regarding performance, while at the same time offering the opportunity to maintain product costs at a competitive level.

There are mainly three triggering technologies that have led to the success of linear tape during the last few years:

- a) **Thin-film Magnetic Resistive (MR)** heads for reading and writing data on the tape. This makes it possible to read/write many tracks simultaneously, thereby achieving a high transfer rate of the data.
- b) **Servo for track monitoring.** This technology makes it possible to operate with a large number of tracks on the tape and thereby increase the capacity without danger of destroying data on the neighbouring tracks.
- c) **New methods for coding the data (PRML).** By adopting these PRML techniques, it is possible to store large amounts of data on the same tape area (within the same tracks) without squeezing the physical density on the tape.

Of the three linear technologies included in the figure on the previous page, LTO and DLT/SDLT use 1/2" tape, while SLR today uses 1/4" tape, but shifts to 8mm wide tape from the SLR100 generation onwards. This increases available tape area by 27%. Because LTO and DLT only use one reel inside the cassette, the available tape area becomes relatively large. However, the tape must be pulled out of the cassette to go around a recording reel inside the drive. With SLR both tape reels are inside the cassette. Over time this will provide opportunities for faster access times ("center load") and possibly also thinner tape. With expected improvements it is anticipated that LTO and SDLT will be able to reach capacities in the area of 500 to 800 GB, while SLR should be able to reach capacities in the area of 300–400 GB.

Linear technology has also a larger potential in transfer rates due to the fact that it can more easily write and read on many parallel tracks. The success of information storage products in this class is not only dependent on having a credible technological future, but just as much on having a large existing customer base. As new technology on the market AIT has experienced this, and LTO will be in the same situation when launching its products. It is first and foremost IBM, HP and Seagate that are behind the LTO format with accompanying cassette. The first products are expected in the year 2000. For comparison, there are approx. three million SLR and 1 million DLT tape drives already in the market.

Quantum is at the same time further developing DLT. It is expected that the new high-end SDLT will be available on the market during autumn 1999. LTO will compete mainly with SDLT.

Tandberg Data has been a pioneer for use of the three technologies: thin-film MR heads, servo track monitoring and PRML data coding, and has been alone in the main part of this market with MR heads and servo track monitoring since the introduction of SLR32 (MLR1) in 1996. We will also be first in the linear market to use the PRML data channel when SLR100 is launched during second half-year 1999. SLR100 will use the VR<sup>2</sup> implementation of PRML developed by Tandberg Datas partner Overland Data.

Tandberg Data's lead within this technology, and long experience with linear tape technology provides a good basis for launching competitive products also in the more price-sensitive entry-level part of the professional market. This implies that the company has a very good starting point for taking market shares in this important and large market, even though new players are making their stake to enter the market.

**Focus on core skills**

In the future the company will work even closer together with selected suppliers in the area of product development, and to a greater extent than previously base those parts of the product not encompassed by the definition "competition differentiated core technology" on external development activities.

Tandberg Data has also worked at establishing a new integrated process for product developments that will further improve the reliability of our products, the capability of our manufacturing processes and the assurance that our new products are launched according to plan, thus meeting the market window for each particular product.

**Supply Chain**

Tandberg Data is investing in deploying the opportunities that modern Supply Chain Management concepts provide and is currently engaged in a review and restructuring of all processes associated with Tandberg Data's flow of goods, from raw materials to supply of finished products.

The process changes are expected to provide improved product quality, lower costs per unit, and a cost and capital structure that allows the company to continuously improve its competitiveness in order to secure future growth.

The process changes are time-consuming and impose large demands on the ability to adapt. It will therefore be not until the beginning of the year 2000 before the effects of these process changes provide noticeable effects in Tandberg Data's accounts. The concept, that is based on a fully implemented modulation of the different products, will in more

specific terms result in shorter lead times (shorter time from customer places an order until it is delivered), a reduced need for capital and shorter development times for new products.

The Supply Chain project's implementation also includes the opportunity for Tandberg Data to grow substantially in Oslo, without having to move the core of the company's business activities.

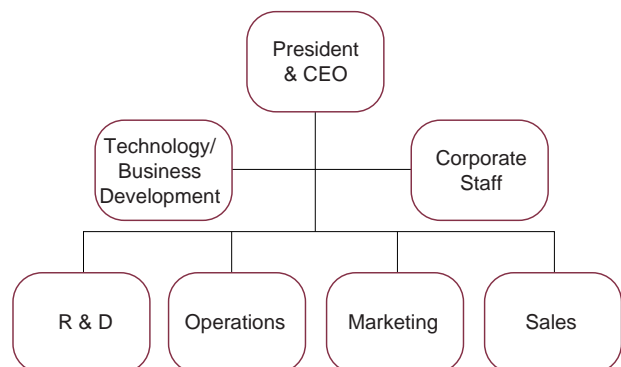
**Sales**

Through a market-oriented and customer-aligned approach, Tandberg Data endeavours to be the preferred partner for storage of digital information within its chosen market segments.

It is important for the company to sell its products both through OEM customers, distributors and professional dealers in order to achieve desired and effective sales.

- Tandberg Data will work objectively towards ensuring that leading international OEM customers offer Tandberg SLR and Tandberg DLT products.
- The company will regularly review and update the distributors selling Tandberg Data's products.

**Tandberg Data Organization**



- The company will focus on further developing the network of professional authorized dealers that actively market Tandberg Data's products.
- In 1999, Tandberg Data will develop a worldwide dealer strategy and a plan for automation products in order to achieve its planned growth in the automation market during the years ahead.

Tandberg Data operates in a strongly emphatic global market, and the company's marketing and sales strategy is based on "thinking global, and acting local".

The company wishes to be recognized as a global company, represented in many countries, with own adaptations to the respective regional and local conditions.

The company structure at Tandberg Data is unchanged since 1997, with six subsidiaries each with main responsibility for functioning as the local market participant within the respective geographical areas.

Independent of the subsidiaries' structure, Tandberg Data has during 1998 organized sales activities in three regions: Europe, America and Asia.

The company focuses on continuously further developing customer support and customer service. This focus will now be directed also at further developing customer support and customer service associated with installation, operations and repair of our products, in addition to securing competitive customer solutions in the respective market areas.

### **Subsidiaries**

#### **Tandberg Data Inc.**

Tandberg Data Inc., was established in 1990 and is responsible for sales and marketing in USA, Canada, and South America. The main office is in Simi Valley, north of Los Angeles, California. The company's regional offices include Boston (Massachusetts), San José (California), Tampa (Florida), Arnold (Maryland) and Austin (Texas).

Revenues in 1998 were at NOK 303.7 mill. compared to the previous year's revenues of NOK 282.7 mill.

The company had 45 employees on 31.12.1998.

#### **Tandberg Data (Asia) Pte. Ltd.**

Tandberg Data (Asia) Pte. Ltd was established in 1992 and is responsible for sales and marketing in Asia (except Japan), Australia and New Zealand. The main office is in Singapore with regional offices in Sydney, Australia and Beijing, China.

Revenues for 1998 were at NOK 59.3 mill. compared to NOK 75.7 mill. in 1997. The decline in revenues for 1998 is due to general financial instability in the region.

The company had 17 employees as of 31.12.98.

#### **Tandberg Data (Japan) Inc.**

Tandberg Data (Japan) Inc. was established in 1992 and has dedicated market responsibility for Japan. The company's office is in Tokyo.

Revenues for 1998 were at NOK 21 mill. compared to the previous year's NOK 27.7 mill. The decline in revenues at Tandberg Data (Japan) Inc. is due mainly to the country's reduced investment tempo as well as the region's financial instability with accompanying decline in the country's currency rate.

The company had 7 employees on 31.12.98.

#### **Tandberg Data GmbH**

Tandberg Data GmbH was established in 1980 with main office in Dortmund, Germany. From June 1998 TD GmbH is the centre for the company's European Sales region (EMEA), which includes all sales and marketing activities in Europe, the Middle-East and Africa. In this region TD SA (France) and TD UK are affiliated, each with their respective geographical area of responsibility.

This reorganization has been implemented to establish larger synergies for our sales and marketing activities in a more open Europe.

Revenues for Tandberg Data GmbH in 1998 were NOK 142.3 mill., an increase of 42% compared to NOK 99.7 mill. for 1997.

The company had 29 employees on 31.12.98.

**Tandberg Data S.A.**

Tandberg Data S.A. was established in 1985. The office is in Velizy, 6 km south-west of Paris. In addition to serving the French market, the office has responsibility for sales and marketing in the Middle-East and Africa.

Revenues in 1998 were at NOK 86.3 mill. compared to NOK 72.1 mill. in 1997.

The company had 13 employees on 31.12.1998.

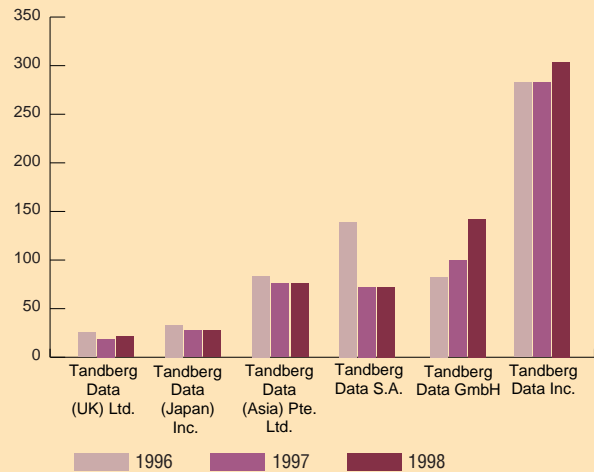
**Tandberg Data (UK) Ltd.**

Tandberg Data (UK) Ltd. was established in May 1995, with main responsibility for England, Scotland, Wales, Northern Ireland and Eire. The office is in Harpenden, north of London.

Revenues for 1998 were NOK 21.2 mill., compared to the previous year's NOK 18.6 mill.

The company had 7 employees on 31.12.1998.

Revenues for the subsidiaries (NOK mill.)



# The average

number of storage  
errors for a tape  
drive in the

*SLR series*

...

is estimated to  
be so small,  
that it can be  
compared to all

*people*

in the world  
each writing a  
ten volume  
encyclopedia  
without making  
a single spelling  
mistake.

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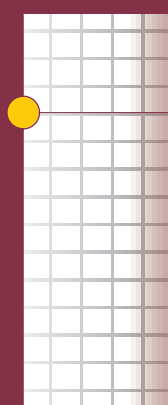
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report  
1998

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# annual report 1998

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Report 1. Quarter 1999	16.04.99
Report 2. Quarter 1999	12.08.99
Report 3. Quarter 1999	13.10.99
Preliminary Result 1999	February 2000
Annual General Meeting	April 2000

# Tandberg Data

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