Subj: Re: TTI

Date: 3/7/2000 1:54:49 AM Eastern Standard Time

From: kbz@elron.net (Koby Ben-Zvi)

To: Burtgrad@aol.com

Burt.

The TTI deal was put on hold, for now. Main reason... their stock reached \$40+ within few days during our negotiations. I will give you more details when we meet each other in Israel. I will ask Sima to arrange for us to get together at Elron during your forthcoming visit to Israel.

#### Regards

#### Koby

— Original Message — From: <Burtgrad@aol.com> To: <kbz@elron.net> Sent: Monday, March 06, 2000 10:56 PM Subject: TTI

- > What is happening on TTI? Anything new? Will you want me to do anything
- > before March 22?

>

- > Carol Anne and I are visiting Israel on vacation from March 24 to April
- > We will be in Jerusalem, Tiberias, Haifa and then Tel Aviv. We would
- > certainly look forward to visiting Elron's offices and, if possible, visit
- > with you and Doron.

>

- > I will be available in my office at 203-222-8718 or at home at 203-222-8821
- > all week and look forward to talking with you.

>

------ Headers

Return-Path: <kbz@elron.net>

Received: from rly-yd03.mx.aol.com (rly-yd03.mail.aol.com [172.18.150.3]) by air-yd02.mail.aol.com (v69.17) with ESMTP;

Tue, 07 Mar 2000 01:54:49 -0500

Received: from alpha.netvision.net.il (alpha.netvision.net.il [194.90.1.13]) by rly-yd03.mx.aol.com (v69.17) with ESMTP; Tue, 07 Mar 2000 01:54:30 -0500

Received: from kbz (ras3-p223.hfa.netvision.net.il [62.0.147.223])

by alpha.netvision.net.il (8.9.3/8.8.6) with SMTP id IAA14203

for <Burtgrad@aol.com>; Tue, 7 Mar 2000 08:54:29 +0200 (IST)

Message-ID: <002f01bf8803\$8a8f74c0\$df93003e@kbz>

From: "Koby Ben-Zvi" <kbz@elron.net>

To: <Burtgrad@aol.com>

References: <a5.2e587af.25f57591@aol.com>

Subject: Re: TII

Date: Tue, 7 Mar 2000 09:05:36 +0200

MIME-Version: 1.0 Content-Type: text/plain; charset="iso-8859-1"



#### BURTON GRAD ASSOCIATES, INC.

7 WHITNEY STREET EXTENSION, WESTPORT, CONNECTICUT 06880 (203) 222-8718 FAX: (203) 222-8728

E-MAIL: BURTGRAD@AOL.COM

Date:

February 8, 2000

To:

Koby Ben-Zvi

cc:

Yair Bar-Touv

From:

Burton Grad Sento Just

Subject:

TCSI

I have reviewed some of the website information available about TCSI. They are an OSS supplier to the Telecom industry. After some significant previous growth, TCSI had a flat year during 1998 (higher product sales, but lower services) with a significant loss of \$4.5M in 1998. Nevertheless, they still had a very strong balance sheet with \$60M in cash, cash equivalents and receivables and with less than \$10M in liabilities at the end of 1998 (see 1998 and 1997 financials attached).

Unfortunately, TCSI had a dreadful 1999. While they haven't yet published their official results, they have indicated a per share loss of \$.53 to \$.60 which translates into a loss of up to \$13.5M (see 1/14/00 press release).

However, as of 2/7/00 TCSI announced an agreement with 3COM to use TCSI's Catalant OSS platform for 3COM's next-generation packet-based networks for service providers (see attached 2/7 press release). The result was to double the price of TCSI's stock from around \$3.50/share to close to \$7.00/share on 2/7.

Do you see TCSI as an alternative acquisition to TTI? Does the increase in market value to \$150M reduce your interest? Does TCSI have the sales/marketing/service infrastructure that you need for the US?

If you wish us to look further, we can review their latest 10Q's and 10K's, their annual reports, brokerage recommendations, etc. Do you have access to any telecom software market analysis reports from Gartner, Yankee Group, etc. which might provide comparative reports on the companies and their products/services. Let me know.

For further information on TCSI Corporation, please call our automated faxback line (800) 264-1603 or join us on the World Wide Web at http://www.tcsi.com.

TCSI, SolutionCore, SolutionSuites, and SolutionServices are trademarks of TCSI Corpor All other product and services listed herein are trademarks of their respective compani

## **Unaudited Condensed Statements of Operations**

(In thousands, except for per share amounts)

	Three months ended December 31,		Years ended December 31,	
	1998	1997	1998	1997
Revenues:				
Services	\$ 7,406	\$ 7,873	\$ 31,560	\$ 33,970
Software licensing fees	3,054	2,610	10,760	5,608
m + 1	10,460	10,483	42,320	39,578
Total revenues	10,460	10,403	42,320	39,370
Costs, expenses, and special item		-		
Services	5,305	5,172		21,071
Product development	3,602	1,711	12,311	5,932
Selling, general, and				
administrative	5,231	5,402	16,164	18,563
Write-off of in-process				
technology acquired	831	-	831	-
Non-recurring special items	-	-	(550)	1,088
	14,969	12,285	49,053	46,654
Loss from operations	(4,509)	(1,802)	(6,733)	(7,076)
Other Income and expense	915	818	3,266	3,104
Loss before income tax provision (benefit)	(3,594)	(984)	(3,467)	(3,972)
Income tax provision (benefit)	534	(335)	1,054	(1,350)

Net loss	\$ (4,128)	\$ (649)	\$ (4,521)	\$ (2,622)
Net loss per share (EPS)- Basic and Diluted	\$ (0.18)	\$ (0.03)	\$ (0.20)	\$ (0.12)
Shares used in calculation of EPS - Basic and Diluted	22,452	22,015	22,349	21,638

#### Unaudited Condensed Balance Sheets (In thousands)

	December 31,	
	1998	1997
Assets		
Cash, cash equivalents, and investments Receivables Other receivables Deferred income taxes Leasehold improvements, equipment, and furniture Other assets	\$ 48,983 11,570 922 3,690 10,599 5,065	\$ 55,467 11,803 682 4,461 10,165 1,653
Total assets	\$ 80,829	\$ 84,231
Liabilities and Shareholders' Equity		
Accounts payable and other accruals Accrued compensation and related costs Deferred revenue Income taxes	\$ 4,446 3,198 1,379 662	\$ 2,410 2,880 3,640 1,153
Total liabilities Shareholders' equity	9,685 71,144	10,083 74,148
Total liabilities and shareholders' equity	\$ 80,829	\$ 84,231

This financial information should also be read in conjunction with the Company's Form 10-K to be filed with the Securities and Exchange Commission.



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### 01/14/2000 - TCSI Corporation Announces Preliminary Results for the Fourth Quarter of 1999

ALAMEDA, CALIFORNIA – January 14, 2000 - TCSI Corporation (Nasdaq: TCSI) today announced that, based on preliminary information, it anticipates financial results for the fourth quarter ended December 31, 1999 to be below expectations. The Company expects revenue for the fourth quarter of 1999 to be approximately \$5 million, with a net loss per share for the quarter in the range of \$0.53 to \$0.60.

The anticipated results are due in part to less than expected license and service revenues accompanied by increased expenses due to non-recurring charges. These include the write off of \$3.7 million in deferred tax assets and \$2.4 million related to the write-down of certain other assets, reorganization expenses, and consolidation of the Company's operations. The Company plans to release operating results for its fourth quarter and year ended December 31, 1999 in early February 2000.

#### **About TCSI Corporation**

TCSI is a leading provider of integrated software products and services for the global telecom industry. A recognized innovator in component-based applications technology, TCSI products and services enable telecom service providers, equipment manufacturers, and systems integrators to rapidly meet the growing demand for automated management of a wide range of networks and services. The Company offers SolutionCore®, a telecom applications development and deployment platform, SolutionSuites®, sets of packaged, highly-configurable OSS applications, and SolutionServices™, specialized OSS related consulting services. TCSI serves its customers in offices throughout North America, Europe, and the Pacific Rim. TCSI is located at 1080 Marina Village Parkway, Alameda, CA, 94501, +1 510-749-8500, fax: +1 510-749-8700, http://www.tcsi.com.

This press release contains certain forward-looking statements concerning revenue and earnings, which are covered by the Private Securities Litigation Reform Act of 1995. Such forward-looking statements are subject to a number of risks and uncertainties which could cause actual results to differ materially from those projected. Actual final results for the quarter and the year could differ depending on a number of factors, including accounting adjustments made during the course of closing the year. Further risks are detailed in the Company's filings with the Securities and Exchange Commission, including its most recent Annual Report on Form 10-K and Quarterly Reports on Form 10-Q.

TCSI Corporation

Phone: +1 510-749-8500 Fax: +1 510-749-8700

FaxBack: 800-264-1603 or +1 213-253-5641

info@tcsi.com



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Contact Us The Mag 02/07/2000 - 3Com and TCSI Sign Multi-Year Partnership Agreement;

TCSI's Catalant® OSS Platform Selected for 3Com's Carrier-Class Network and Service Management System

ALAMEDA, CALIFORNIA February 7, 2000 - TCSI Corporation (Nasdaq: TCSI), a leading provider of software for the global telecommunications industry, has announced the completion of an agreement that will supply 3Com Corporation (Nasdaq: COMS) with TCSI's Catalant® network management application and engineering services. 3Com will use Catalant as the framework for its CommWorks® 5000 Network and Service Management System.

3Com is a leading provider of next-generation packet-based networks (NGN) for service providers that allow them to offer differentiated services, create new business opportunities and stake out unique positions in the competitive communications market. The company recently announced its strategy for delivering e-Networks to Service Providers - packet-based networks characterized by their openness, versatility and scalability. The CommWorks 5000 Network and Service Management System is an overarching component within 3Com's strategy.

"A strong network and service management solution is essential as service providers migrate from legacy circuit-switched architectures to next-generation packet-based networks," said Irfan Ali, senior vice president and general manager, 3Com Carrier Systems. "We evaluated several different platforms for our CommWorks 5000 Network and Service Management System. TCSI's Catalant platform delivers the carrier-class performance and scalability we require."

The multi-million dollar, four-year agreement is intended to supply 3Com with products and engineering services for the development of 3Com's products. Under terms of the agreement, 3Com and TCSI will create a Center of Excellence for Catalant at 3Com's facilities in the Chicago area. This multi-year program is a powerful combination of TCSI's product and on-site engineering expertise and 3Com's NGN market plans to accelerate the delivery of carrier class solutions.

"3Com's choice of Catalant for their CommWorks 5000 Network and Service Management System is a powerful endorsement of our product line and world class engineering team," said Ira Rotenberg, senior vice president, TCSI. "Catalant will enable 3Com to bring powerful IP network and service management solutions to market faster, with the highest levels of scalability, performance and quality. This partnership will help us advance our state-of-the-art products under a cooperative business relationship. The Center of Excellence program captures the spirit of this partnership and further demonstrates TCSI's commitment to our customers' success."

**About 3Com Corporation** 

With over 300 million customer connections worldwide, 3Com Corporation connects more people and organizations to information and each other in more innovative, simple and reliable ways than any other networking company. 3Com delivers e-Networking solutions through information access products and network systems to enterprises, small businesses, consumers, carriers, and network service providers.

press site at www.3com.com/pressbox.

**About TCSI Corporation** 

TCSI is a leading provider of integrated software products and services for the global telecom industry. A recognized innovator in component-based applications technology, TCSI products and services enable telecom service providers, equipment manufacturers, and systems integrators to rapidly meet the growing demand for automated management of a wide range of networks and services. The Company offers SolutionCore®, a telecom applications development and deployment platform, SolutionSuites®, sets of packaged, highly-configurable OSS applications, and SolutionServices™, specialized OSS related consulting services. TCSI serves its customers in offices throughout North America, Europe, and the Pacific Rim. TCSI is located at 1080 Marina Village Parkway, Alameda, CA, 94501, +1 510-749-8500, fax: +1 510-749-8700, http://www.tcsi.com.

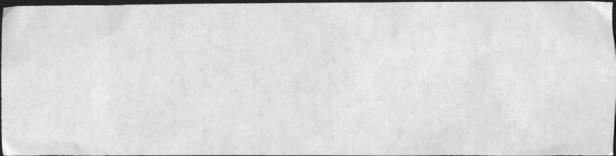
This press release contains certain forward-looking statements as that phrase is defined in the Private Securities Litigation Reform Act of 1995. Such forward-looking statements are subject to a number of risks and uncertainties which could cause actual results to differ materially from those projected. Such risks include but are not limited to the following: That TCSI's products may not deliver all expected benefits to 3Com and that the partnership may not help TCSI advance its products. Further risks are detailed in the Company's filings with the Securities and Exchange Commission, including its most recent Annual Report on Form 10-K and Quarterly Reports on Form 10-C.

TCSI Corporation

Phone: +1 510-749-8500 Fax: +1 510-749-8700

FaxBack: 800-264-1603 or +1 213-253-5641

info@tcsi.com



Elron/ Tes I Subi: TCSI 1/31/00 1:11:19 AM Eastern Standard Time Date: From: ybert@ibm.net (Yair Bar-Touv) Reply-to: vhert@ibm net To: burtgrad@aol.com Hi Burt I think Koby is going to meet with Meir Lifchietz this week. In additiona Koby asked me to talk to you if you could do a preliminary check on TCSI (TCSI,COM) headquartered in California. They just relieved their CEO Ram Banin. They are a public company. Koby would like to consider approaching them but we need to understand more about their product, thir customers, why has revenue growth stopped, why is their stock so low? etc.

Thanks

Yair

Return-Path: <vbert@ibm.net>

Received: from rly-yd05.mx.aol.com (rly-yd05.mail.aol.com [172.18.150.5]) by air-yd04.mail.aol.com (v67\_b1.21) with

ESMTP; Mon, 31 Jan 2000 01:11:19 -0500

Received: from prserv.net (out4.prserv.net [32.97.166.34]) by rly-yd05.mx.aol.com (v67\_b1.21) with ESMTP; Mon, 31 Jan 2000 01:11:14 -0500

Received: from ibm.net ([139.92.182.75]) by prserv.net (out4) with SMTP

id <20000131061112239006f8o7e>; Mon, 31 Jan 2000 06:11:13 +0000

Message-ID: <3894ACBC.4BC72B97@ibm.net>

Date: Sun, 30 Jan 2000 13:27:26 -0800 From: Yair Bar-Touv <ybert@ibm.net>

From: Yair Bar-Touv <ybert@ibm.net>
Reply-To: ybert@ibm.net

Organization: Elron Software

X-Mailer: Mozilla 4.7 [en] (WinNT; I)

X-Accept-Language: en MIME-Version: 1.0 To: burtgrad@aol.com

Subject: TCSI

Content-Type: text/plain; charset=us-ascii

Content-Transfer-Encoding: 7bit





#### **Our Company**

Our mission is to be the unparalleled provider of innovative software and services that support the daily operations and business processes of the telecom industry's leading system integrators, equipment manufacturers and service providers.

For more than 15 years, TCSI has implemented software solutions for some of the biggest names in today's telecom industry. Our service provider customers include Bell Atlantic, Bellsouth, AT&T in North America, The Dutch PTT and SITA in Europe, and NTT, Korea Telecom, and IDC in the Asia-Pacific Region. Telecom equipment suppliers and systems integrators such as NEC, Motorola, Lucent, Italtel, Hughes, and Siemens-Nixdorf SNI are bidding, developing, and deploying systems that incorporate TCSI software and innovation at the very heart of what they do.

### Corporate Overview

A comprehensive overview of TCSI's products and services.

#### **Our Customers**

Since TCSI's beginning 15 years ago, we have had the pleasure of working with leading system integrators, equipment manufacturers and service providers, such as Motorola, Italtel, and Lucent, among others. Our customers span 150 countries across the globe and are at the forefront of setting the standards that define today's telecommunication industry.

#### Our Team

**Board of Directors** 

The TCSI Board of Directors comprises representatives from a variety of business and industry backgrounds.

**Executive Officers** 

A complete listing of TCSI's Executive Officers and their brief biographies.

#### **TCSI Core Values**

#### TCSI Worldwide

TCSI's global presence is supported by offices around the world.



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#### 07/20/1999 - TCSI CORPORATION REPORTS SECOND QUARTER 1999 RESULTS

ALAMEDA, California – July 20, 1999 - TCSI Corporation (Nasdaq: TCSI), a global provider of software to the telecom industry, for the second quarter ended June 30, 1999. This compares to revenues of \$11.1 million in the same period last year. The Comp approximately \$2.6 million and a net loss per share of \$0.12 on a diluted basis. This compares to net income and net income per \$0.02, respectively, for the second quarter of 1998.

"Shifting TCSI's business model from a custom software project model to a product-based software model is very challenging. I positioned to address the needs of high growth segments of the telecom industry with select products from our SolutionCore; and Ram Banin, TCSI's President and Chief Executive Officer. "We are very encouraged by the interest we have been receiving fro our recently launched Catalant product. In addition, our WorldWin Suite, acquired from GTE NMO at the end of last year, is gain providers, and has been an excellent addition to our product portfolio. Both of these products have significantly shorter sales and value proposition. We are beginning to achieve a repeatable sales process with referenceable customers in these sectors with the now well positioned to take advantage of the tremendous need for competitively priced, rapidly deployable, pre-packaged softwa added.

#### **About TCSI Corporation**

TCSI is a leading provider of integrated software products and services for the global telecom industry. A recognized innovator i TCSI products and services enable telecom service providers, equipment manufacturers, and systems integrators to rapidly mee management of a wide range of networks and services. The Company offers SolutionCore®, a telecom applications developmen SolutionSuites®, sets of packaged, highly-configurable OSS applications, and SolutionServices™, specialized OSS related cons in offices throughout North America, Europe, and the Pacific Rim. TCSI is located at 1080 Marina Village Parkway, Alameda, C 749-8700, http://www.tcsi.com.

This press release contains certain forward-looking statements as that term is defined in the Private Securities Litigation Reform statements include those with respect to the Company's achievement of repeatable sales; the need for pre-packaged software s positioning of the Company to take advantage of this need. Such forward-looking statements are subject to a number of risks an results to differ materially from those projected. The Company may not achieve desired levels of repeatable sales; the need for expected rates; and the Company may be unable to take advantage of market opportunities. Further risks are detailed in the Co Exchange Commission, including its most recent Annual Report on Form 10-K and Quarterly Reports on Form 10-Q.

	Three months ended June 30,		Six Months ended June 30,	
	1999	1998	1999	1998
Revenues: Services Software licensing fees	\$ 8,176 1,979	\$ 8,640 2,499	\$ 14,633 5,591	\$ 16,771 5,373
Total revenues	10,155	11,139	20,224	22,144
Costs, expenses:     Services     Product development     Selling, general, and         administrative     Non-recurring special lost         gain	5,019 3,898 3,940	2,902	9,951 7,861 7,609	9,614 5,445 7,508 (550)
Income loss from operations	(2,702)	33	(5,197)	127
Interest income	477	782	1,159	1,548
<pre>Income (loss) before income tax provision (benefit)</pre>	(2,225)		(4,038)	1,675
Income tax provision (benefit)	387	326	386	670
Net income (loss)	\$ (2,612) ======	\$ 489	\$ (4,424)	\$ 1,005 ======
Earnings (loss) per share (EPS)- Basic	\$ (0.12)	\$ 0.02	\$ (0.20)	\$ 0.04
Shares used in calculation of EPS - Basic	22,578	22,312	22,454	22,266
Earnings (loss) per share (EPS)- Diluted	\$ (0.12)	\$ 0.02	\$ (0.20)	\$ 0.04

Shares used in calculation of EPS - Diluted

22,578

22,516

22,454

22,605

#### Unaudited Condensed Balance Sheets (In thousands)

	June 30,	December 31
	1999	1998
Assets		
Cash, cash equivalents, and investments Receivables Other receivables Deferred income taxes Furniture, equipment and leasehold improvements, net Other assets	\$ 39,841 12,352 1,752 3,690 9,869 6,242	\$ 48,983 11,570 922 3,690 10,599 5,065
Total assets	\$ 73,746	\$ 80,829
Liabilities and Shareholders' Equity		
Accounts payable and other accruals Accrued compensation and related costs Deferred revenue Income taxes	\$ 1,241 3,837 406 1,130	\$ 4,446 3,198 1,379 662
Total liabilities Shareholders' equity	6,614 67,132	9,685 71,144
Total liabilities and shareholders' equity	\$ 73,746	\$ 80,829

This financial information should also be read in conjunction with the Company's Form 10-K to be filed with the Securities and Exchange Commission.

#### **TCSI Corporation**

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info@tcsi.com



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### 04/15/1999 - TCSI Corporation Reports First Quarter 1999 Results

ALAMEDA, California - April 15, 1999 - TCSI Corporation (Nasdaq: TCSI), a global provider of software to the telecom industry ended March 31, 1999. This compares to revenues of \$11.0 million reported in the first quarter of 1998. License fee revenues as quarter of 1999. License fee revenues for the first quarter of 1999 represented 36 percent of total revenues as compared to 26 p loss of approximately \$1.8 million and a net loss per share of \$0.08, on a diluted basis for the first quarter of 1999. This compare first quarter of 1998 of \$0.5 million and \$0.02, respectively.

"At the end of last year, we completed our product portfolio. We now have a complete suite of products that can serve new entra to maintain their competitive advantage. During the first quarter of this year, TCSI focused on training our sales people and cond that we have identified several significant opportunities for each of our products and now we are beginning to fill the pipeline," sa maintain our position as the leading telecom platform supplier and believe our entire product portfolio is well positioned to serve

#### **About TCSI Corporation**

TCSI is a leading provider of integrated software products and services for the global telecom industry. A recognized innovator i services enable telecom service providers, equipment manufacturers, and systems integrators to rapidly meet the growing dema services. The Company offers SolutionCore®, a telecom applications development and deployment platform, SolutionSuites®, s SolutionServices™, specialized OSS related consulting services. TCSI serves its customers in offices throughout North America Parkway, Alameda, CA, 94501, +1 510-749-8500, fax: +1 510-749-8700, http://www.tcsi.com.

This press release contains certain forward-looking statements as that term is defined in the Private Securities Litigation Reform number of risks and uncertainties which could cause actual results to differ materially from those projected. Such risks include, b TCSI's products and services will not materialize in the manner anticipated by TCSI, or that TCSI will not be able to capitalize on technologies and platforms and not to invest in others, TCSI's decisions concerning the direction of its research and developmen deployment, will not distinguish TCSI from the competition; that TCSI will not be able to broaden its product portfolio through a be able to successfully expand its relationships with existing customers or add new ones; and that TCSI's partnering programs wi successful. Further risks are detailed in the Company's filings with the Securities and Exchange Commission, including its most r 10-Q.

#### **Unaudited Condensed Statements of Operations**

(In thousands, except for per share amounts) Three months ended March 31,

	1999	1998
Revenues:		
Services	\$ 6,457	\$ 8,131
Software licensing fees	3,612	2,874
Total revenues	10,069	11,005
7-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		
Costs and expenses: Services	4,932	4,558
Product development	3,963	2,543
Selling, general, and administrative	3,668	3,810
Selling, general, and administrative		
	12,563	10,911
Income (loss) from operations	(2,494)	94
Interest income	682	766
Income (loss) before income tax provision	(1,812)	860
Income tax provision	=	344
Income and Providence		
Net income (loss)	\$ (1,812)	\$ 516
Earnings (loss) per share (EPS) - Diluted	\$ (0.08)	\$ 0.02
Shares used in calculation of EPS - Diluted	22,538	22,991

#### Unaudited Condensed Balance Sheets (In thousands)

	March 31, 1999	December 31, 1998
Assets		
Cash, cash equivalents, and investments Trade receivables Other receivables Deferred tax assets	\$ 47,039 11,549 812 3,690	\$ 48,983 11,570 922 3,690

Leasehold improvements, equipment, and furniture Other assets	e 10,061 5,824	10,599 5,065
Total assets	\$ 78,975	\$ 80,829
Liabilities and Shareholders' Equity		
Accounts payable and other accruals Accrued compensation and related expenditures Deferred revenue Income tax payable	\$ 2,187 3,895 2,178 817	\$ 4,446 3,198 1,379 662
Total liabilities Shareholders' equity	9,077 69,898	9,685 71,144
Total liabilities and shareholders' equity	\$ 78,975	\$ 80,829

This financial information should also be read in conjunction with the Company's Form 10-Q to b

TCSI Corporation
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info@tcsi.com



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## 2/4/99 - TCSI Corporation Reports 1998 Results

ALAMEDA, California - February 4, 1999 - TCSI Corporation (Nasdaq: TCSI), a global provider of software to the telecom indu for the year and quarter ended December 31, 1998. Revenues for the fourth quarter ended December 31, 1998 of \$10.5 million quarter of 1997. The Company also reported a fourth quarter 1998 net loss of approximately \$4.1 million and a loss per share of process research and development of approximately \$0.8 million associated with the Company's acquisition of GTE's Network M December of 1998 and one-time payments of \$1.2 million to GTE for managing NMO's operations during the first month of TCSI Without the write-off of in-process research and development and one-time payments, net loss and loss per share for the quarter been \$2.1 million and \$0.09, respectively. Net loss and loss per share for the fourth quarter of 1997 was \$0.6 million and \$0.03, r

For the year ended December 31, 1998, the Company reported revenues of \$42.3 million, a modest increase over 1997 revenue was \$4.5 million, or a loss per share of \$0.20. Without the aforementioned write-off of in-process research and development and share for year ended December 31, 1998 would have been \$2.5 million and \$0.11, respectively. Net loss and loss per share for t \$0.12, respectively.

"While overall financial results this year were disappointing, our software license revenues increased by 92%, we improved our g balance sheet remains strong," said Ram Banin, TCSI's President and Chief Executive Officer. "We've taken a significant step t cost Operations Support System (OSS) solutions for telecom service providers and equipment manufacturers by using best-of-br play technology. In addition, I believe that TCSI's domain expertise, solid customer references, and reputation for quality deliver customers evaluate us as their software supplier of choice. With increased product content, our objective now is to accelerate ou

**About TCSI Corporation** 

Founded in 1983, TCSI is a leading provider of integrated software products and services for the global telecom industry. A reco applications technology, TCSI products and services enable telecom service providers, equipment manufacturers, and systems i demand for automated management of a wide range of networks and services. The Company offers SolutionCore®, a telecom a platform, SolutionSuites®, sets of packaged, highly-configurable OSS applications, and SolutionServices™, specialized OSS rel customers in offices throughout North America, Europe, and the Pacific Rim. TCSI is located at 1080 Marina Village Parkway, Al +1 510-749-8700, http://www.tcsi.com.

This press release contains certain forward-looking statements as that phrase is defined in the Private Securities Litigation Refor statements are subject to a number of risks and uncertainties which could cause actual results to differ materially from those proj to the following: that TCSI may not accelerate its sales and delivery cycles. Further risks are detailed in the Company's filings wit Commission, including the Company's Form 10-K to be filed with the Securities and Exchange Commission.

####









Catalant is a pre-packaged management system for next generation networks.

For IP equipment manufacturers, Catalant reduces the time it takes to bring new products to market while still delivering a truly differentiated management solution.

Catalant enables next generation carriers to create new services in hours as opposed to days, and ensure the quality of these services by monitoring their most critical network links.

As a leading provider of integrated management solutions for IP based telecom networks, TCSI has incorporated its expertise and proven technology into Catalant. The result is robust, carrier-class functionality that lets you proactively deploy and manage new network elements and new IP services.

More ...

## WORLDWIN.

Offers a complete OSS suite for emerging communications providers, including Service Assurance, Service Fulfillment, and Billing Interfaces. <u>Announcing WorldWin</u> 1.4.1!

## INCOMECONNECT\*

A carrier-class mediation platform with installations globally, IncomeConnect offers data independent formatting, filtering and distribution capabilities. Such flexibility gives you control over your data collection environment, letting you take advantage of usage information across your entire enterprise. More...

## SolutionCore

TCSI's SolutionCore offers a full set of development tools and re-useable frameworks for building distributed telecom applications. It is also the industry's first network management software designed to support thousands of users and unlimited application servers, while allowing operators to change an application location during operation without impacting performance. To protect investments, developers can also integrate SolutionCore applications with applications based on any CORBA 2 platform including those from Hewlett Packard, IBM, DEC, and SUN Microsystems. More . . .

Page 1 of 2

## **SolutionServices**

TCSI is a recognized leader in operational support systems for telecom operators and equipment suppliers around the world. SolutionServices, TCSI's integrated suite of professional services, is designed to deliver our telecom customers with high value, effective systems that automate their key business processes. More...

Visit our <u>Customer Care</u> pages to find out more about TCSI's support offerings, and the new Customer Service Online.

The <u>Educational Services</u> pages give the latest information about on our current courses, including class schedules and registration.

## SolutionPartners

In today's highly competitive telecommunications marketplace, new opportunities are appearing every day. Yet, at the same time, the window to win the business opportunities is getting shorter and shorter. Few companies, if any, offer a total range of products and services to meet the challenges and capitalize on the huge global market being generated as telcos old and new invest to survive and prosper in the new competitive era. That's why alliances and cooperation between vendors makes so much sense. Harnessing complementary skills and competencies through well structured alliances can significantly improve the chances of success for both players. More . . .

## Register With TCSI

At TCSI we are dedicated to delivering a solution that suits your needs. We can tailor a solution package to fit your individual requirements. By registering with TCSI, you can learn more about the solutions we can offer you, and stay in touch with what is happening at TCSI. Registering is quick and easy - to start just click here.



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## 12/20/1999 - TCSI Announces Chief Executive Officer Changes

ALAMEDA, CA – December 20, 1999 - TCSI Corporation announced today that the Board of Directors has named Norman E. Friedmann, Ph.D., a Director of TCSI since 1998, as interim President and Chief Executive Officer. He will fill vacancies in these positions resulting from the resignation of Ram Banin, Ph.D., effective December 17, 1999. The Company announced that it would commence a search for a permanent Chief Executive Officer immediately.

Since its founding in 1990, Friedmann has managed Friedmann Enterprises, which provides investment capital and management expertise to early stage Internet technology companies. Concurrent with his responsibilities at Friedmann Enterprises, he served as Executive Vice President and Chief Operating Officer of Herbalife International, Inc. from 1992 to 1995. Previously, Friedmann served as President, Chief Executive Officer, and member of the Board of Directors of Daisy Systems from 1987 to 1989. Daisy Systems provided computer aided engineering and design software for integrated circuit design and printed circuit board layout. Previously, Friedmann served as President, Chief Executive Officer, and Chairman of the Board of Cordura Corporation, a company he founded in 1965. Cordura Corporation developed software systems for compiling and distributing on-line databases in the automotive insurance and healthcare industries. Friedmann serves on the Board of Governors of UCLA and is the founder and donor of the Friedmann Chair in Knowledge Sciences at UCLA.

Friedmann, on behalf of the Board of Directors, stated, "We greatly appreciate Ram's contributions during his seven and a half years with TCSI. He was instrumental in guiding the Company's focus to telecom software products. We wish him the best."

About TCSI Corporation

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## 12/07/1999 - Access Point Selects TCSI's WorldWin® for Management of Integrated Network and Services; WorldWin Provides the Competitive Edge for Fast Growing CLEC

LAS VEGAS, NEVADA - December 7, 1999 - TCSI Corporation (Nasdaq: TCSI), a leading provider of software for the telecommunications industry, today announced that Access Point, a North Carolina-based Integrated Services Provider, has chosen TCSI's WorldWin as its Operations Support System (OSS) to manage its expanding network. This solution will enable Access Point to increase operational efficiency with a low cost of integration and ownership.

Access Point, one of the fastest growing integrated communications providers, is in the process of transitioning from a switchless reseller to a facilities-based communications provider. The company turned to TCSI for a solution that would provide an integrated enterprise-wide database, flexible flow-through provisioning and work order management.

"We evaluated several OSS vendors and decided on TCSI," said Hugh Petty, Vice President of Operations, Access Point. "WorldWin provides a combination of performance, functionality, and value which was key to our decision." This deal provides Access Point the competitive edge to deliver services to customers faster, and the flexibility to add new service types quickly.

TCSI's WorldWin is a fully integrated "telco-in-a-box" OSS suite that offers Access Point the flexibility to manage network configuration including automated provisioning of customer services, service order processing, and customer management. WorldWin's flexibility enables service providers to win the "time-to-market" race by deploying innovative revenue generating services in a few weeks.

"We're delighted to offer a solution as part of this transition for Access Point," said Peter Kos, Vice President and General Manager for the Americas, TCSI. "WorldWin will allow Access Point to differentiate their network delivery and management process and provide quality service to their customers."

#### **About Access Point**

Access Point is a fast growing, integrated services telecommunications company. They provide local and long distance voice and data solutions primarily to business customers. Located in Cary, North Carolina, the company was founded in 1996 by a management team with over 40 years of successful industry experience. Today, that team has grown to include over a century of experience in telecommunications. Access Point's goal is to be the company that provides all of the telecommunication services that their business customers need. Their commitment is to deliver innovative solutions and the best service to every one of their customers. Access Point's product portfolio includes a wide range of voice, data and integrated services that can point the way to the right telecommunication answers for your company. Access Point provides long distance service nationwide and Local Service throughout the Southeast from their Corporate offices in Cary, North Carolina and from Sales Offices strategically located throughout their service area. They may be contacted at 1-800-57-6468, fax 1-919-851-5422. http://apitelecom.com

**About TCSI Corporation** 

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This press release contains certain forward-looking statements as that phrase is defined in the Private Securities Litigation Reform Act of 1995. Such forward-looking statements are subject to a number of risks and uncertainties which could cause actual results to differ materially from those projected. Such risks include but are not limited to the following: TCSI's ability to successfully integrate the WorldWin product into Access Point's existing infrastructure and WorldWin's ability to enable Access Point to differentiate its quality of service to their customers. Further risks are detailed in the Company's filings with the Securities and Exchange Commission, including its most recent Annual Report on Form 10-K and Quarterly Reports on Form 10-Q.

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Contact Us Site Map 12/06/1999 - TCSI Partners with NEC to Gain Initial Entry into Burgeoning Brazilian Telecom Industry; NEC Selects SolutionCore® to Deploy Switch Management System

LAS VEGAS, NEVADA - December 6, 1999 - TCSI Corporation (Nasdaq: <u>TCSI</u>), a leading provider of software for the global telecommunications industry, has announced the completion of a deal that supplied NEC do Brasil (NDB) with TCSI's SolutionCore telecom application platform. NDB used SolutionCore as the basis for development of the NEC NCOM 200E Network Element Management System, built in conformance to TMN Architecture Standards. SolutionCore supports a full-featured object environment, enables rapid deployment of applications and provides unprecedented scalability and reliability for carrier-class Operations Support Systems (OSS) - benefits critical to the 24 x 7 environment of telecommunications service providers.

Facing the need to improve the management system for NEC telephone switches, NDB turned to TCSI for a solution that would deliver rapid time-to-market applications geared toward the efficient management of large volumes of information. "SolutionCore was chosen because it is cost effective, fast to deploy, scalable and compliant with current standards," states Mr. Carlos Alberto Curotto, Manager, NDB Network Engineering and System Integration Department. "This powerful application platform enabled NDB to build a centralized solution for management of switches, thus reducing operations and training costs."

"The NDB deal marks a significant opportunity for TCSI in the emerging South American telecommunications market," said Peter Kos, Vice President and General Manager for the Americas, TCSI. "This partnering arrangement with NEC will provide strong product positioning for TCSI as well as serve as a building block for increased opportunities in this important, growing sector."

**Brazil Provides New Opportunities for TCSI** 

As a result of last year's de-regulation of the Brazilian telecommunications market, new and incumbent service providers are looking to equipment manufacturers to support the growth and implementation of new and expanding facilities. Within the coming months, it is expected that an additional eleven cellular operators, as well as, three wireline and one long distance service provider will enter the rapidly expanding Brazilian market.

TCSI is a direct supplier to leading telecommunications providers around the world. Growing relationships with telecom system integrators and equipment suppliers like NEC will promote TCSI as a global force in telecommunications software.

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**TCSI Corporation** 

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## 11/09/1999 - TCSI Joins Forces with Brazilian Telecom Teaching Institution; Alliance Results in Strategic Positioning of TCSI Products in Brazil

ALAMEDA, CALIFORNIA - November 9, 1999 - TCSI Corporation (Nasdaq: TCSI), a leading provider of software for the telecommunications industry, and Instituto Nacional de Telecomunicações (INATEL), a Brazilian telecommunications engineering institute, today announced their alliance to market professional services and utilize the school's talent to support telecom-based projects in Brazil.

This new relationship introduces TCSI's SolutionCore®, Catalant™ and WorldWin® products in Brazil, and enables CCTMN/INATEL (the TMN Competence Center of INATEL) to improve their skills and performance in delivering solutions, while speeding up the training, research and development activities done in the institution.

This partnership has opened doors for TCSI into a market that has recently liberalized its telecommunications policies. With CCTMN/INATEL serving as a reference for the Brazilian TMN market and TCSI's experience as a leading provider of telecom management solutions, both organizations benefit from this agreement and also share the costs of providing these products to the Brazilian Institute.

"This alliance is very important to CCTMN/INATEL, as it strengthens our commitment to deliver solutions to the telecommunications sector," said Pedro Sergio Monti, General Director of the Institution. "TCSI's leadership in telecom management products extends our capabilities to develop technology projects and promote technology transfer to the Brazilian telecommunications industry."

"We're helping the university gain experience and stay on the forefront of technology outside of Brazil," said Peter Kos, Vice President and General Manager of Sales for the Americas, TCSI. "In turn, we gain access to the Brazilian market and leverage CCTMN/INATEL's resources."

#### About INATEL

INATEL is a traditional Brazilian center of graduation in Telecommunications Engineering, offering specialized training services and project development in the areas of Telecommunications, Telecommunications Management Network, Electronics, and Computer Science applied to telecommunications, business and quality. INATEL also offers a complete post-graduation program for telecommunication engineers, in lato sensu system, specialized in Communications Systems, Networks and Strategic Telecommunications Management.

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# 11/08/1999 - Key Promotions Strengthen TCSI's Position as Technology Innovator; Team to Lead TCSI into IP/Next Generation Network Management

ALAMEDA, CALIFORNIA - November 8, 1999 - TCSI Corporation (Nasdaq: TCSI), a leading provider of software for the telecommunications industry, today announced that it has named Dr. James Storey as Chief Scientist, Peter Buckner as Chief Technology Officer (CTO), Michael Curry as Corporate Fellow, and John Ullstrom as Engineering Fellow. These new responsibilities strengthen TCSI's position as a technology leader in the next generation of telecom software.

"Our objective is to be the leader in component-based telecom applications," said Dr. Ram Banin, President and Chief Executive Officer, TCSI. "These promotions are part of a continuing program to leverage TCSI's traditional position as technology innovator, to rapidly bring new, leading edge products to market."

As Chief Scientist, Dr. James Storey will be responsible for research initiatives involving new software and communication technologies, in partnership with academic institutions, industry forums and standards bodies. Dr. Storey has over 13 years of experience with TCSI. Prior to this promotion, Dr. Storey served as Corporate Fellow and was the chief architect of TCSI's Catalant™ and SolutionCore® products. Dr. Storey received his Ph.D. in Electrical Engineering from Stanford University. He is also an active participant in the technical work within the TeleManagement Forum (TMF) and Object Management Group (OMG) organizations.

As CTO, Peter Buckner will be responsible for the architecture of new application products, and the selection of new technologies to commercialize and support those products. In his new role, Buckner will also serve as TCSI's technology evangelist to customers, telecom industry analysts, and the media. In his 14 years with TCSI, Buckner has been a key contributor to some of TCSI's largest and most successful projects. Most recently, he served as a Corporate Fellow and chief application architect for TCSI's SolutionServices™ projects. Prior to TCSI, Buckner held a variety of engineering positions at AT&T Bell Labs. Buckner received his MS in Computer Science from Stanford University.

In his new role, Michael Curry will lead major product specifications, architecture and design efforts. Curry has a wide range of experience spanning user interfaces, equipment interfaces and management protocol mediation, as well as several NMS development projects. Prior to his promotion as Corporate Fellow, he served as an Engineering Fellow and chief architect for TCSI's TMN communication products. He has been with TCSI for over 11 years and has actively contributed to a number of standards groups and industry consortia, including TMF and OMG. Curry received an undergraduate degree in Computer Science from the University of California, Berkeley.

As Engineering Fellow at TCSI, John Ullstrom will lead product architecture and design efforts. To this role, Ullstrom brings over 30 years of experience in the telecom industry. He joined TCSI as part of the GTE NMO acquisition where he served as chief architect in the design and development of the WorldWin® product line. Previously, Ullstrom developed network management solutions for Diederich and

Associates and US West

About TCSI Corporation

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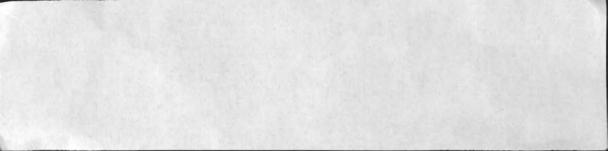
This press release contains certain forward-looking statements as that phrase is defined in the Private Securities Litigation Reform Act of 1995, including statements regarding TCSI's ability to timely deploy its products. Such forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially from those projected. Such risks include but are not limited to the following: Our abilities to successfully develop and market our technologies. Further risks are detailed in the Company's filings with the Securities and Exchange Commission, including its most recent Annual Report on Form 10-K and Quarterly Reports on Form 10-Q.

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Subj: Re: TTI Team Telecom

Date: 2/5/2000 12:53:50 PM Eastern Standard Time

From: kbz@elron.net (Koby Ben-Zvi)

To: Burtgrad@aol.com

Hi Burt.

The meeting went well; Meir suppose to discuss our concept/offer with his partner and come back to me early next week. I will get to you as soon as I here from him.

Koby

— Original Message — From: <Burtgrad@aol.com> To: <kbz@elron.net> Cc: <vairb@ncc.co.il>

Sent: Friday, February 04, 2000 10:59 PM

Subject: TTI Team Telecom

>

> How did your meeting go with Meir Lipchitz? Please keep me posted on your

> status and if there is anything you will want to have me do.

Headers

Return-Path: <kbz@elron.net>

Received: from rly-yc03.mx.aol.com (rly-yc03.mail.aol.com [172.18.149.35]) by air-yc05.mail.aol.com (v67\_b1.21) with

ESMTP: Sat. 05 Feb 2000 12:53:50 -0500

Received: from mailgw2.netvision.net.il (mailgw2.netvision.net.il [194.90.1.9]) by rly-yc03.mx.aol.com (v67\_b1.21) with

ESMTP; Sat, 05 Feb 2000 12:53:46 -0500

Received: from kbz (ras2-p116.hfa.netvision.net.il [62.0.146.116]) by mailgw2.netvision.net.il (8.9.3/8.9.3) with SMTP id TAA25061

for <Burtgrad@aol.com>; Sat, 5 Feb 2000 19:53:43 +0200 (IST)

Message-ID: <000601bf7003\$2d1ab100\$7492003e@kbz>

From: "Koby Ben-Zvi" <kbz@elron.net>

To: <Burtgrad@aol.com>

References: <6b.15f174e.25cc97a9@aol.com>

Subject: Re: TII Team Telecom

Date: Sat, 5 Feb 2000 20:02:31 +0200

MIME-Version: 1.0 Content-Type: text/plain; charset="iso-8859-1"

Content-Transfer-Encoding: 7bit

X-Priority: 3

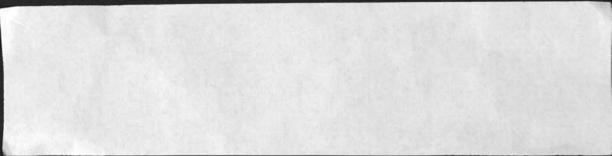
X-MSMail-Priority: Normal

X-Mailer: Microsoft Outlook Express 5.00.2314.1300

X-MimeOLE: Produced By Microsoft MimeOLE V5.00.2314.1300

2/4/00 e mail To: Kaby Fren Zui ce Yair Bar-Tour From: Fred fred Aubject: TTI Team Telecom How did your weeting go with men hipchitz? Please Keep we posted on your status and if There is anything you will want to have me so.

How did your meeting go with Meir Lipchitz?	Please keep me posted on your status and if there is anything you will want to
nave the do.	



YAIR-

#### BURTON GRAD ASSOCIATES, INC.

7 WHITNEY STREET EXTENSION
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(203) 222-8718 FAX: (203) 222-8728
E-MAIL: BURTGRAD@AOL.COM

972 4 8550248 (fax)

941. 472 8769 (84) (for) 272-3 925 4747

Date:

January 29, 2000

To:

Koby Ben-Zvi

Copy:

Yair Bar-Touv

From:

Burton Grad

Subject:

Initial contact with TTI Team Telecom

At your request I called Meir Lipchitz, president of TTI Team Telecom, to describe the process BGAI would use to perform analysis work (including due diligence) if TTI and Elron Software proceeded with any relationship discussions. I told Meir that this conversation should only deal with non-confidential information. I offered to send him my profile, but he felt it was unnecessary at this preliminary stage.

We spent almost 30 minutes on the phone. I indicated that I had done strategic planning and due diligence work for Elron previously, particularly related to the NCC merger. I also noted that I knew you from Informatics and Sterling Software. I mentioned that I had examined TTI's website materials. I stated that my goal in the conversation was to learn enough about TTI to help me give you the plan BGAI would follow if you wanted our assistance and our estimate of the time and cost which would be required to perform the needed analysis work.

I told Meir that I was particularly interested in: TTI's history; products; services; customers; development process; marketing, sales and customer service organization; business plans and revenue recognition practices. I reminded him I wanted no confidential information.

The highlights of the conversation follow:

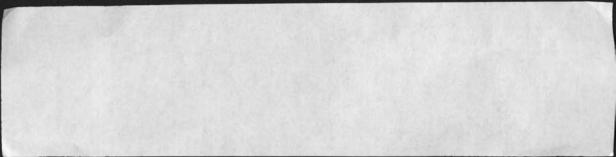
- Team (a DG reseller) started working with Bezeq's Network Operations Control Center in 1988 and has continued to do so on a time and material basis.
- TTI (Team Telecom International) was set up in 1992, specifically to provide software development services to Bezeq and to market products and services to other Telecom companies in Israel and elsewhere. Meir states that he was one of the founders of Team and the initiator of TTI.
- 3. Netrac is a product written in C++ and Powerbuilder running with Sybase and Oracle. TTI uses Sun development tools and prepares HTMN screens. They support Sun Solaris as well as HP and IBM Unix operating systems. They have done only limited work with NT and Java. They have

recently licensed a French company's front end development tools.

- 4. 60%-70% of TTI's revenues in 1999 came from product licenses (I don't know if this includes maintenance revenue). An additional 15%-20-% came from custom product development work including legacy computer interfaces. The remaining 15%-20% came from service and support activities which are primarily performed at customer sites.
- In 1999, 19% of TTI's revenues came from Israel and the remaining 81% was relatively equally divided between North America, South America and Europe.
- 6. There are three separate sales channels: direct sales, distributors, strategic partners. The distributors (whom they meet at Telecom shows) make the initial contact, but TTI carries out the sales process; I assume that the contract is with TTI with the distributor receiving a commission, but this was not discussed. There are two strategic partners: IBM (Tivoli) and Nortel (Cellular). Both of these partnership agreements were signed about 9 months ago. The IBM sales will be through Tivoli with TTI as a subcontractor. Nortel includes the TTI proposal as part of their proposal, but TTI would directly contract with the Nortel customer.
- All managers (including sales) are located in Israel. The only substantial sales office is in the USA in Hoboken, NJ. Meir says that all of their managers speak English quite well.
- All senior professional personnel for on-site projects are from Israel, but some junior programming or on-site support personnel may be hired locally.
- I did not get a breakdown on personnel and, as Yair points out, there may be too many services
  people if customer development and on-site activities only account for 30%-35% of TTI's
  revenues.
- 10. TTI says it recognizes revenues and maintains accounting records in accordance with USA software accounting practices. Meir states that TTI only includes net revenues (after distributor and partner commissions).
- Meir says that it is TTI's intent to be primarily a software company focused on building products for the Telecom marketplace.

#### Summary

Some of the technical and operations due diligence work would have to be conducted in Israel, although much of the work could be done through phone calls and email.



FOR/THE Elnou / TTI Meir hipschitz - 16 Interview Check Last 1/2/20 Products / Hervices -Customers -Host Development MKrg / Hales / Leppont Service Beriven Plans Financial operations Financial BGAT - Comulting, Due Diligence, Valuation - send profile ? have done due lit for Elnon before - NCC

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Top

Meir Lipshes, CEO

Roni Al-Dor, President

Gidion Levin, President (USA)

Norman Tutnauer, V. P. Sales

Rami Doron, V. P. Development and Operations

Israel Ofer, CFO

Yoram Grushgevitz, Chief Scientist

Shelly Weinreb, Director/Business Development

Ori Amitzur, Director of Technologies

Avichai Levy, V. P. Marketing



Elwan/TTI

Subj: Some things I learned about TTI

Date: 01/15/2000 10:30:36 PM Eastern Standard Time

From: ybert@ibm.net (Yair Bar-Touv)

Reply-to. ybert@ibm.net

To: burtgrad@aol.com, arnit@elron.net, kbz@elron.net

Hi There

Thought I'd list down a few things I learned about TTI.

They havn't got alot in the CDR front. e.g. their probe partners have alwayus proved to be very weak and they rely on taking CR information directly from Telephone exchanges which an old fasion and inferior and unscalable solution. They Havn't got anything in the IP Service Management front hence are not really suited to deal with IP next generation telephony, and data communications CLECs and Service Providers and the entire Internet revolution.

They are working strongly with R&D of 35 people on a new versioon of their traditional OSS product (Netrac 2).

They have aprox 350 people.

Management includes CEO Meir Lipchietz, US President, Israeli President, VP finance, VP sales , VP Development. Three regional development managers report to the VP Development.

They have somewhat of a disconnet between the US operation and Israeli operation, The true power is with the Israeli operation where Engineering is based, marketing and sales and product management are based

The US operation basicly did around 7 Million in aprox 8 customers in 99. Amongst the out standing ones are AT&T local loop and long distance and IDT long distance.

Partnerships with IBM and Nortel formed in 99. IBM brought them to Telecom in Sweden can lead to Denmak and Nortel brought them to Mexico and Carribean.

In order to do 45 M\$ next year they want to add 100 people to the organization hence they are seking an investment.

Their luctrative accounts include Belgium Telecom, Sweden Telecom, AT&T IDT Brazil, Australia.

They have a strong marketing dept that does product management and responds to proposals. Sales is distrrubuted and they have office in several places in Europe, in Florida, in Canada, in Brazil, and NY.

All in all aprox 25 people scattered around the US with 12 at their office in NY.

They are very exsited about the complementing offerings we would bring to the table, as well as the different thinking that the headquarters should be in the US, with significant R&D and Engineering in the US.

Elnou/TTZ 1/10/99 yan Bar-Toou \$28M - System Futeg Divition for 99 Isvall 21M 300 people Telecom - 12M Quit - (Israel) \$104 Troducts - Banking - [Idea] Telecom Tutentools - Eezek

Toper Supt Supt (CPM)

Call detribet record (CDR) 150K-POOK (HP devices).

touly product prent and to touly product part application using their data (partner) move people to Boston for Their devel work I suet, eztel one the competition. IP Service higt ... Co. value 2004 TTI -60 cectoners, weak in 45 2 rd + 3rd fier Telecom network ugt saftware used to build oss \$ 30M wi 99 300 - 20 people target 1/2 few US sales / MKTg capabilities ATT, IBN pantuenslips interested in CDR Competition - Telecondia, PCSI, OSI

Elnou/TTI 1/6/00 Koby Ben - Zvi TT I - \$1804-2004 wht value 454 rev in 29 mojerted 1/3 new foom US 350 emps. (320 in Levael) Neighty ceo selling OSF product ? TEAM is penent - hards I'll of put co. can acquire (by 1/1)
1004 Cach or Stu of Eluon Elect. Goldman Sacher -InterTools Telecon soft owner piece (05 = 15-17 to be usinged into This co. HA related still not found metal tales ouganization in US but your Bar-Town is I building Synengy between cos...
types of austoniers (carriers) NCC - telecom e finance gout

Analyze TTI ( due filigena)

# BURTON GRAD ASSOCIATES, INC. 7 WHITNEY STREET EXTENSION WESTPORT, CONNECTICUT 06880 (203) 222-8718 Fax: (203) 222-8728 E-MAIL: BURTGRAD@AOL.COM

Date:

November 30, 1999

To:

Koby Ben-Zvi

From:

**Burton Grad** 

Subject:

Possible Future Acquisitions

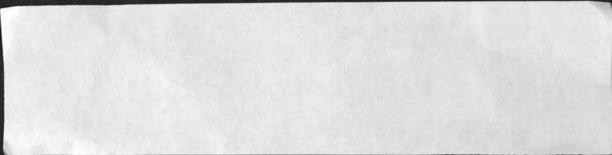
I have spent a little time looking over the material that you sent on TTI Team Telecom plus some other material from Yair Bar-Tov.

While serving a fairly narrow market (telephone companies), the company does appear to have some interesting technology which might have broader market usefulness. It seems quite profitable, but may be benefitting from having a large percentage of Israeli employees (e.g., 300 employees for \$30M revenue is not an attractive ratio for this kind of leveraged business. There is a substantial cash position even though the receivables are quite high. My principal concern is whether you should invest in another technology company before acquiring a major marketing, sales, distribution and support capability, particularly in North America.

I have also reviewed the Secure Computing material we obained from their Web site. It appears as though they had run into an unforseen set of problems and then dumped their CEO and put in McNulty. They have eliminated part of what appeared to be a top-heavy executive management structure, but as of 3Q99, had not stopped the severe financial losses. They were still making major restructuring changes in 3Q99 so it is really hard to tell whether they have their operating expenses in line with their reduced revenues. The company may still have an effective infrastructure which might be of value to Elron, but the stock price did increase in October as they brought in a new investor (who has some serious warrants and probably some leverage on any future sale). The price may now be high compared to the relative value to Elron.

If you decide what you want done, I would, of course, be interested in working with you.

Good Luck!





7 New England Executive Park 11th Floor Burlington, MA 01803

Main Number. (781) 993-6000 Main Fax: (781) 993-6001

#### FAX COVER SHEET

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Telephone:	
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RE:	
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Message:	
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Hu	is to you. and asyon know,
Th	e two of you are Schaduled
to	i Bar-Tow asked me to fax is to you. And as you Know, two of you are Schadulad Speak tomorrow @ 5 pm (EST.)
na	ase call if you have guestions  Ufficulty with this fax  - Sandra Brigham
	- Sandra Brigham
	781.993.6108





Business Intelligence

# Call Performance Manager For International Gateways

Profiting from intelligent international routing.

acceSS7



International traffic represents a highly profitable revenue stream for telephone network operators. In many countries, competition for international traffic has increased dramatically in recent years, threatening these revenues. It is therefore vital for operators of international gateways to maintain the highest quality of service in order to retain the loyalty of subscribers and maximize revenues and profits.

#### Beyond Control - Other Carriers' Networks

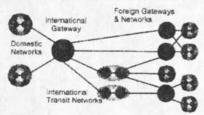


Figure 1: Multiple networks for international calls

A major challenge facing network operators is that the quality of service they can offer their customers is heavily influenced by the quality of other interconnecting carriers' networks. In the case of international calls, the calls first pass through one or more comestic networks to reach an International Gateway. (The Gateway operator may also operate one of these domestic networks.) There might then be a direct link to an international Gateway in the destination country, or the call may pass through one or more International Transit Networks, some of which will also be Gateways for third countries. Finally, the call then has to successfully traverse one or more domestic networks in the destination country. With so many parties involved, it is vital for network operators to select the right partners.

#### Monitor Partners with Call Performance Manager

The proliferation of carriers offering international transit facilities gives Gateway operators a wide choice of routes to each destination country, and hence many decisions regarding how best to route international traffic. Network engineers and account managers aim to:

- Minimize call-revenues lost due to outages in other networks.
- Maximize profits through selection of the most profitable routing
- Control costs through optimization of network resources
- Select partners based on sustained performance

Continuous monitoring of network traffic provides the necessary data for key decision-makers. HP acceSS7 Business Intelligence

Call Performance Manager for International Gateways

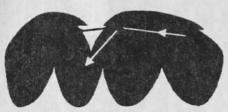


Figure 2: International Gateway as Transit Network

#### Becoming the "Partner of Choice"

Around the world, operators of other international Gateways are seeking partners they can rely on to deliver calls. An ability to achieve and demonstrate a consistently high quality of service is crucial when competing in this market. If this is achieved the benefits can include:

- Significant revenues as the "Partner of Choice" for other operators worldwide delivering to your country
- Sustained margins through positioning as the 'quality' gateway operator
- New revenue streams through Transit
   Network business to third countries

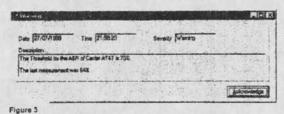
#### Call Performance Manager

HP acceSS7 Call Performance Manager equips network engineers, account managers and administrators with a powerful tool that provides unique insights into the performance of international and domestic networks (both wireline and wireless) on either side of the Gateway. It is the result of a collaboration between Eiron Software and Hewlett-Packard, two experts in delivering high quality solutions for the telecommunications industry. The resulting system provides a richness of data and knowledge not previously available, leading to informed decision making. Call Performance Manager users will experience immediate benefits from improved quality of service as a result of better international routing.

Call Performance Manager provides the ability to:

- Alert engineers to sudden deterioration in the network performance for a particular carrier to a particular country, or even to an Area Code within that country, and provide data on the type of problem being experienced for problem resolution in minimum time.
- Report trends in key performance indicators for each carrier on a country-by-country basis, enabling comparison with contracted performance and between carriers
- Identify routes where usage is approaching maximum capacity.

Call Performance Manager delivers these capabilities by providing improved call completion and failure analysis on both Inbound and Outbound international traffic as illustrated by the following examples.



4

Be aware of deterioration in service quality almost as soon as it happens.

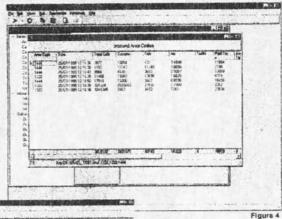
Figure 3 shows a warning message (accompanied by audible alarms) displayed on screen whenever the measured performance of a key indicator falls below a user-defined threshold. HP acceSS7 Business Intelligence

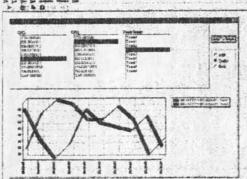
Call Performance Manager for International Gateways

2

Report and analyse the quality of service achieved by a particular carrier, down to the area code level

Figure 4 shows a high level summary report for inbound traffic to particular area codes over a seven day period, ordered by Answer/Seizure Ratio, showing that there was a low level of completions to Area Code x-xxx during that time.





3

Monitor the trunk utilization at gateway switches to identify capacity problems

Figure 5 shows the traffic rate (measured in Erlangs) for a number of trunk groups over a three month period, indicating that trunk group xxx is approaching maximum capacity.

Figure 5

4

Monitor the relative performance of Transit Carriers and other Gateways so as to manage the routing of traffic for optimum performance

Figure 8 shows the Answer/Seizure Ratio for several carriers, with the ones underperforming highlighted in red and yellow, depending on the severity of the problems

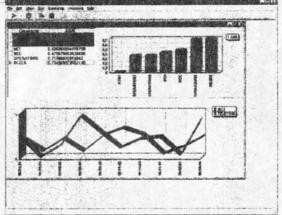


Figure 6

HP acceSS7 Business Intelligence
Call Performance Manager for International Gateways

#### Advantages of Call Performance Manager

HP acceSS7 Call Performance Manager derives its data from Call Detail Records gathered from the SS7 signaling network by acceSS7 Business Intelligence. This means that the data is generally available in much shorter time-scales than can be achieved by systems using data derived from network elements. The data is also nicher in detail than that typically provided by network elements. These advantages enable network operators to respond swiftly and effectively to changing situations, and to perform sophisticated analysis. With this information, users will be in a much better position to optimize traffic routing decisions and meximize quality of service.

Applications of Call Performance Manager
HP acceSS7 Call Performance Manager can be
used wherever there is a need to monitor and
analyze the ability of a network to successfully
complete calls. This can include Points of
interconnect between networks at national level, and
within a network to study intra-network traffic.

#### About Elron Software

Eiron Software Systems Integration Division specializes in Mission Critical Data- and Tele-Communication Solutions, such as Network Management Systems and Internet-based information Systems. Eiron Software Inc. has established a track record for delivering cost effective and reliable solutions, resulting in a wide range of products and applications, and a loyal and expanding international customer base.

#### About Hewlett-Packard

Hewlett-Packard Company (HP) is a leading global provider of computing and imaging solutions and services for business and home. HP plans to launch a new company consisting of its industry-leading test-and-measurement, semiconductor products, chemical-analysis and medical businesses. With leading positions in multiple market segments, this technology-based company will focus on

opportunities such as communications and life sciences. Information about HP and its products can be found on the internet at http://www.hp.com.

#### About acceSS7 Business Intelligence

The acceSS7 Business Intelligence solution records details of calls from source to destination. It provides details on calls and links to interconnecting carriers, and on successful failed and unanswered calls. Every business unit within a network operator will have the ability to extract whatever information they need from this comprehensive database of network and customer activity. HP acceSS7 has become the network monitoring market leader, developing and deploying the most advanced and broadest set of applications in the industry.

#### Contact details

For more information about HP acceSS7, please call your local HP sales office. A current listing is available on the World Wide Web at http://www.hp.com. If you do not have access to the Web, please contact one of the HP centers listed below and they will direct you to the nearest HP sales office.

United States: 1-800-452-4844

Canada: 905-206-4725

Europe: (31 20) 547 9900

Japan: 81-426-567832

Latin America: (US) 305-267-4245/4220

Australia/New Zealand: Australia (1 800) 629 485 New Zealand (0800) 738 378

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Aprito by 5102 of TAI Tream Telecom Elvon Competitive andy sis - Yair is Knowledgeable light beach unger. fitness - with NTT Donon Binger consequis -Secure Computing -what value ... \$43 M F9 RW large receivables Revenue for EY 99 = 304 ligh margin 202 of revenue Substantial cash position at F10/shave con is \$ 1004



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## Equity Research

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A CIBC WORLD MARKETS COMPANY

March 9, 1999

#### Telecom Software

Stephen J. Murphy Lior Bregman

(212) 687-5789 (212) 667-7045

### TTI Team Telecom

A Telecom Software Growth Story on the Rise

#### Investment Conclusion

- We reiterate our Strong Buy rating on TTI Team Telecom, raising our year-end price target from \$10 to \$12. TTI recently completed a secondary offering that increased its float and should heighten its visibility with investors.
- Our price target rises to reflect improved fundamentals that could prove catalysts for multiple expansion: 1) recent numerous large contract wins that provide excellent backlog and visibility; 2) good prospects for some additional highprofile contracts in the near term; and 3) recent new product releases that give TTI exposure to some of the fastestgrowing areas of telecom like GSM (Global System for Mobile Communications, a wireless network architecture).
- We are particularly excited about TTI's recent initial penetration of the GSM service provider market. Telecom software vendors addressing this market sector (e.g., LHS Group) have shown explosive growth, and we believe TTI now shares that potential.
- By selling "packaged" management applications and new products for the network management and service management layers, TTI taps into some of the best growth areas of telecom software, in our view, with potential for long-term growth of better than 30% per year.
- We have modified our financial model slightly. Our 1999 EPS estimate remains \$0.49, but we are raising our revenue estimate from \$28.2 million to \$29.2 million because of increased visibility from recent contract wins. We also are introducing a 2000 EPS estimate of \$0.61 (27% growth).

#### Rating: STRONG BUY

111LF-01C (2/8/99):	27 13/10	
52-week Range:	\$9.3/16-3	
Shares Outstanding:	10.3 Million	
Float:	3.9 Million Shares	
Marker Capitalization:	\$82 Million	
Dividend/Yield:	Nilvii	
Fiscal Year Ends:	December	
Book Value:	\$2.05 per Share	
1999E ROE:	19.0%	
LT Debt:	02	
Preferred:	Nil	
Common Equity:	S19 Million	

-	Earnings per Share	
	1997	50.25
	1998	50.36
	1999E	50.49
	2000E	
	P/E Ratio	
	1997	31.8X
	1998	22.0X
	1999E	16.2X
	2000E	13.0X

Company Description:

TTI develops, markets and supports advanced, modular, integrated software products and services for network management and operations support in the telecommunications industry.

99-2175 @ 1999

Recent customer wine validate TTI's products and give

cood visibility.

#### UPDATE ON TITIS FINDAMENTALS

The company recently scored a string of impressive new customer wins and enters 1999 with good backlog and visibility. Over the last six months. Fit won a number of large deals (Exhibit 1), most notably a \$14 million frame agreement with Belgacom (the national operator of Belgium). These new wins coupled with a strong recurring revenue from existing customers should give TTI a high-visibility revenue stream over the next few quarters. TTI exited 1998 with an order backlog of \$15 million (most slated for deployment in 1999), which bodes well for meeting expectations and for upside potential.

Fac-99	
	Netrac management software for faut management, SS7 network surveillance, configuration management, and performance monitoring of GSM network.
Jan-99	Netrac management software for international/long distance carrier. Valued at \$1.2 million over 1999.
Jan-39.	Netrac software for histwork traffic management. Vaulad at several million to T77 in 1H99, with the potential to be larger.
Jan-99	Netrec SS2 surveillance system for PCS network based on GSM technology. To be completed in 1H99.
Dec-98	Frame agreement to provide pletform for various Netrac network monitoring and analysis products over three years. Valued at \$14 million, much to be taken in 1999.
Deq-98	CallSupert suite of applications for capacity planning, flaud management, and intra-partier billing.
Qc:-98	Netrac management software for full-service carrier. Valued at \$2 million and expected to be deployed by 1H99.
O⊄-98	Netrac SS7 surveillance systems for major full-service Canadia: uperator. To be completed in 4098.
Oct-98.	Netrac suite of products and initial implementation of intelligent call routing product.
	Jan-99 Jan-99 Dec-98 Dec-98 Oct-98

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The money raised in the recent offering will be used, in part, to finance the deployment of these new contracts. As for many small, fast-growing telecom software companies, the growth bottleneck for TTI had been hiring and training personnel to perform its implementations. With the additional funding, we believe TTI is in good position to hire aggressively to meet today's expectations and provide for future growth.

Exposure to GSM operators could enhance growth.

New customers and products provide initial exposure to the high-growth GSM sector. TTI's recent wins at Powertel and Partner Communications should provide it with the opportunity to "verticalize" its offering and build some referenceabilty as a vendor to GSM networks. Because of their construction and their call handling mechanisms, GSM network management products require some special adaptations.

\*\*Using its Netrac suite as a base, TTI is customizing its products to meet GSM wireless operators' particular needs.

GSM technology is one of the fastest-growing in all of telecommunications. Use of this standard outside (and increasingly, inside) the U.S. is widespread, and there are literally dozens of GSM network operators at the growth stage where they may need advanced network management products like TTl's Netrac. As an example of this market's potential, we point to Atlanta-based billing and customer care software vendor LHS Group which has ridden the proliferation of GSM networks to stellar growth over the last few years. Tapping another of GSM operators' pressing needs — advanced network management systems — TTl enjoys the same growth opportunity.

New OSS applications from CDR Technologies address an critical area for carriers. Other new products from the newly formed CDR Technologies unit enhance growth prospects. TTI is also expanding its product set to capture additional carrier spending and to enhance its follow-on opportunities with existing customers. It recently announced a first contract for products from its CDR Technologies unit with Bezeq, Israel's national carrier, following an earlier deal with IDT Corporation. The product to be deployed at Bezeq, known as CallExpert, utilizes call detail records (CDRs) to provide performance analysis of subscriber calling patterns and traffic behavior to assess quality of service (QoS) and eliminate fraud. We expect additional CDR applications in areas such as intelligent routing and inter-carrier accounting near term.

We believe this a good area of opportunity for TTI. Carriers are struggling to find ways to correlate information from their network with information about their customers and other business data. As detailed below, we think applications that provide these functions – and help improve carriers' business results – will become a spending priority. As an experienced network management vendor. TTI is in excellent position to blaze the trail in this emerging product category.

We believe TTI's multiple is ripe for expansion. Though it is growing at better than 40%. TTI's P/E multiple has remained mired in the low-teens even as the company's fundamental outlook has improved. We believe that over the next few years, TTI could display the same rapid growth as other highly-valued telecom software players like LHS Group. Visual Networks or Micromuse. TTI addresses many of the same high-growth markets (international, wireless carriers, emerging operators) and recent large-scale wins like Belgacom validate TTI as a vendor to the largest carriers in the world. TTI also reminds us of Wiztec Solutions, another Israeli telecom software growth story that has

produced very strong results and generated superior investor returns over the last few

Exhibit 2: Valuations of comparable telecom software vendors

			Price @	€ EPS		EPS growth		PVE		This	To 12	Warner	Mkt. Carr	
		FY End	Mar-9	PYSOE	FYOOE	FILE	PRIME	hu-12	FYSEE	PYDOE	reve	Raw Growth	top	tr-12 rev
TITI Taken Telegom	TOU	Q40-60	33	20,19	\$11.43	33%	27%	18s	17%	f2x	\$19	57%	180	4.3
Averaged	ASYC?	Sep-20	trs	55.če	50·01	46%	13%	NA	38s	30%	NA	NA	5245	MA
Crosscops	CKEY	Apr-09	34	\$0.78	50.26	30%	8%	244	16x	'Sz	540	344	381	.,
DISET Corporation	OSET	Dec-09	511	\$0.65	\$0.90	33%	42%	150	124	*2x	125	50%	\$102	19
LMS Group	LHSG	Dec-99	200	10.66	50.00	42%	33%	üSe	Silva	Alle	2046	54%	5.3	148
6curus	MILITER	340-78	125	50.31	80.58	164	87%	86a	1146	Ste	334	166%	2225	9.8
Flayer Neiwong	VSMV	Dec-89	320	50-19	30 71	227%	45%	791	90x	58x	343	138%	5773	181
Mate Solutions	WIZTF	Dec-55	\$18	21 CB	31-12	3516	3196	179	12€	*\$4	572	50%	\$120	88
VERAGE					-	84%	36%	15c	18x	31x		885	-	9a
77 Years Telecost						25%	27%	18z	172	171		57%		4.3

Carriers spend billions each year to manage their atworks ... Overall, TTI is addressing an extremely large market that is growing in importance. Inditionally, network management software's sole function has been maximizing the service provider network's uptime and performance by monitoring for faults, isolating them, and providing information to help correct them. Network management systems also feed data into other telecom software systems in operations support (OSS) and, increasingly, billing and customer care (B&CC). More and more today though, network management software is becoming critical in helping carriers achieve their business goals by intelligently processing network performance and usage data to provide new and better services to customers — a key enabler in the competitive world.

Almost half of all telecom software spending was on network management solutions in 1998, totaling over \$5 billion. Through the years, network reliability was the overwhelming investment consideration for network operators. Customer care and economical and responsive business process support were secondary considerations, to say the least. Similarly, network monitoring and performance management systems that could be deployed and maintained economically were not a high priority, since most network operations groups were not directly incented on a profit and loss basis. But we believe all that is changing.

... and a growing rest of that ending is with Fandamental changes in the communications marketplace have multiplied opportunities for network management independent software vendors (ISVs) with the right products. These include:

• Among legacy systems in place, legacy network management systems are the most lacking in today's communications environment. The legacy systems in place at many old-line carriers were developed by Bellcore and designed mainly to manage voice services. Typically, they were mainframe based, written in COBOL or a similar language, and used first-generation database systems like DB2. As a result, they were (and are) not particularly flexible; difficult to modify to manage new services; costly to maintain; and not easily adaptable to equipment from disparate vendors. Carriers using these older systems must invest to upgrade their life and functionality.

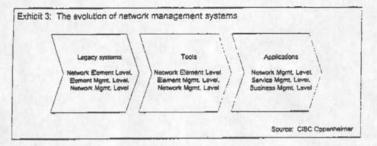
The need for greater bandwidth is forcing operators to use new, harder to manage technologies from new vendors. In the old days, operators relied on one vendor, usually their switch vendor, to provide most of their network elements, e.g., Lucent, Nortel Ericeson, Siemens or Alcatel. These vendors also would supply network management systems that spoke that vendor's proprietary languages. Belicore or internal IT groups provided the higher level systems needed to do simple aggregation of network information. These systems, of course, are not very flexible or extensible.

Nowadays, operators must be able to roll out new services based on new technologies quickly, using elements from an expanding universe of suppliers. New technologies-digital loop carrier and DSLAMs in the local loop, and SONET and ATM transmission, and WDM technologies in the transport network-can offer operators significant competitive advantages. The Internet phenomenon is also quickly shifting the mix of network traffic from predominantly circuit-switched voice to packet-switched data, radically changing network topologies. But the operators' nerwork management systems must be advanced and flexible enough to manage the next-generation networks properly - any many aren't.

- Ougoing industry consolidation means there's rarely such thing as a singleswitch network - so OEMs products are less adequate. Operators of all sizes, be they CLECs or incumbents, wireline or wireless, generally have deployed core switching, transport or access products from more than one vendor. That means that the OEMs' network management products are unlikely to facilitate a unified network view, i.e., provide an end-to-end circuit or connection view needed to offer certain quality of service assurances, and may be incapable of more basic functions.
- The continuing build-out of the Intelligent (SS7) Network has spurred the need for new network management systems. This overlay meta-network is the heart of the call control mechanism for the PSTN, and is taking on more and different functions as the proportion of data traffic increases. So carriers need to extend - or deploy for the first time - additional management systems to ensure the uptime and performance of the IN. Local number portability - really still in its infancy - should increase the amount of traffic on the SS7 network exponentially in years to come and exacerbate the need for good management systems.
- As network complexity increases, curriers must manage them with fewer, less experienced technicians. Widespread headcount reductions at many large operators and the leaner economic models of the newer carriers have led to much smaller technical workforces than the legions of technicians formerly in place. A scarcity of internal experts in critical areas is emerging, making it impossible to continue to perform manually maintenance tasks that could be automated.
- Service level (SLAs) and quality of service (QoS) agreements raise the bar for information requirements about network performance. The intent of a network management system used to be merely verify that service was working or not, and if not, how to fix it. Now, bandwidth and network performance must be more closely tracked and reported. New systems must be capable of bringing together information about what's happening in the network with other information in the carrier

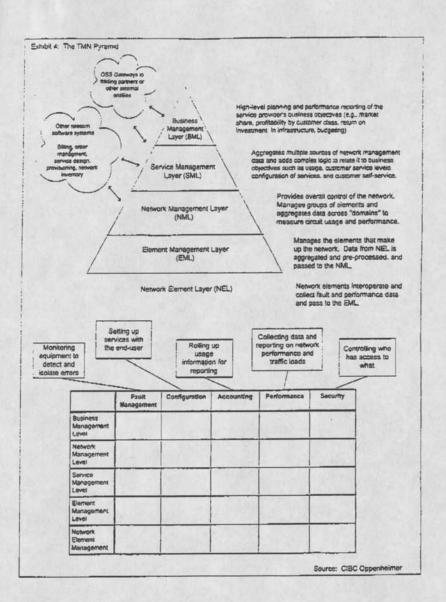
enterprise, such as service information and customer information. Moreover, recent business developments like SLAs and QoS guarantees have raised the ante on network performance and reporting and put proactive fault prevention at a premium. Sophisticated, flexible network management systems have become an actual source of compenitive differentiation, rather than merely a means of verifying that the network is running.

Vendors that sell higher-level applications are well-positioned. The architecture and deployment of network management systems is changing ... favoring the new generation of network management/OSS vendors. Network management software is — and probably always will be — a mix of proprietary systems, tools, and turnkey application at any service provider. A large piece of network management software is by necessity embedded in the network elements, but the evolution of the network computing environment will mean more and more applications — and value — will be provided by third-party client/server systems.



Network management systems are in use at all levels of the TMN pyramid (Exhibit 4). (The TMN model, created by the International Telecommunications Union trade group, is a set of recommendations for network operators and telecom vendors for planning, designing and implementing better networks. At a minimum, it is a useful tool for thinking about "what telecom software does what" in a network and how it all firs together). At the network equipment (NEL) and element management (EML) levels, OEMs generally provide the systems to manage their particular device or group of devices, often with the software embedded into the element hardware platform. Most OEMs have to include with their product the software necessary to manage it and other elements like it.

ISVs participate in at the low levels of the TMN pyramid, however, by selling OEMs the tools to design these management systems or by designing the systems for them on a contract basis. Tools or platform vendors have developed wide libraries of interfaces with all kinds of networks devices that they update continually. Element managers should be an area offering a steady, if not spectacular, growth opportunity because OEM product cycles are shrinking, making time-to-market is critical while creating customer expectations of better management systems.



The more interesting part of the TMN pyramid for network management ISVs, in our view, is the higher levels: the service management (SML) and network management (NML) levels where systems coordinate and apply flexible logic to the network management information (see Exhibit 5)—in a targeted way to solve a particular problem. NML and SML systems look across multiple "domains" of the network and relate network information to customer and other business objectives. Many of these higher level functions weren't needed in the past, but in the new environment, they are critical to the operators' success.

For the first time, carriers are focusing spending at the NML and SML levels At the lower TMN levels, network management was something that operators always had to do. The systems and vendors for basic fault or service assurance functions were – and are – fairly well defined. However, service management in particular (the higher levels) is a new concept for carriers, particularly as a competitive tool. It is essentially a new application space, one we believe will receive increasing investment focus from service providers.

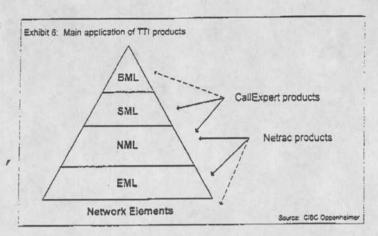
## Exhibit 5: Network Management (NML) and Service Management (SML) Applications

- Manage and provide a "unified network view" across a variety of types of network elements from a variety of vendors
- Provide proof of service quality for SLAs and QoS agreements
- · Perform pro-active surveillance of networks to head off possible faults
- Facilitate the development of new services for customers
- a Allow end-customers self-service network performance monitoring
- Analyze network traffic to improve equipment allocation
- Interface with network management systems of trading partners
- Integrate the management of data and traditional elements
- Use diagnostic tools to quickly Isolate faults and resolve outages

Source: CIBC Oppennemen

TII's new products fall in the "sweet spot" of network management spending — the Service Management and Network Management levels — where we believe service provider spending will increasingly be focused. TII's recent CallExpert product introductions from the CDR Technologies group gives the company exposure to the levels of the pyramid where we believe growth will be fastest. Even without these products, TII has achieved top-line growth of better than 50% per year. Demand for "packaged" fault management and monitoring applications should remain strong, and these additional arrows in TII's quiver could boost future growth.

T?I's new CallExpert products serve these high-growth areas.



Our new FY00 estimates project 27% revenue and EPS growth.

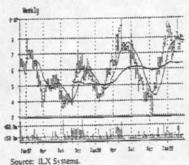
In the wake of the February share offering, we are adjusting our model and introducing year-2000 estimates. Our adjustments reflect the 1.15 million shares added via the offering TTI completed in February. Our full-year 1999 EPS estimate is unchanged at \$0.49 We have raised our 1999 revenue estimate from \$28.2 million to \$29.2 million because of the numerous large new deals the company signed in the last month or so. Margins estimates are unchanged.

We also introducing our 2000 estimates. Our full-year expectations are for EPS of \$0.61 on revenue of \$37.3 million, this would represent growth of 27% on both the top and bottom lines.

#### Our quarterly EPS estimates are shown below.

		1 Qtr.	2 Qtr.	3 Qtr.	4 Qtr.	Year
1997	Actual	\$0.05	\$0.06	\$0.06	\$0.08	\$0.25
1998	Actual	\$0.07	\$0.07	\$0.09	50.13	\$0.36
1999E	Current	\$0.10E	50.12E	50.13E	\$0.14E	\$0.49E
2000E	Current			_		\$0.61E

#### TTI Team Telecom (TTILF-OTC)



### Stock prices (as of 3/9/99) of companies mentioned in this report:

CrossKeys	(CKEY-OTC, \$4. Strong Buy)	(1.2.3)
DSET Corporation Ericsson	(DSET-OTC, \$12. not rated) (ERICY-OTC, Hold, \$25)	(1)
LHS Group	(LHSG-OTC, \$39, not rated) (LU-NYSE, Buy, \$106)	
Micromuse Nortel Networks	(MUSE-OTC, not rated, \$32) (NT-NYSE, Strong Buy, \$58)	(3)
Siemens	(SMAWY-OTC, not rated, \$64)	
Visual Networks	(VNWK-OTC, not rated, \$36) (WIZTF-OTC, Strong Buy \$18)	(1)

- CIBC Oppenheimer Corp., or one of its affiliated companies, makes a market in the securities of this
  company.
- CIBC Oppenheimer Corp. or one of its affiliated companies, has performed investment banking services for this company.
- (3) CIBC Oppenheimer Corp., or one of its affiliated companies, managed or co-managed a public offering of securities for this company within the last three years.

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FY Cecembers	V34-47	Just-27	509-97	Dec-67	Sharing.	Milima	2MM-60	240-00	Secretary.	distant	Nar-rec	2007.750	-			Milyumodi
Income Statement									+ 206	44 208	4.892	9 200	5.564	a 480	22,560	29,068
License revenue	1,700			2.27					4,596	4.493					6,619	8,193
Service revenue	96:				4.089	291				19,:01	5,968	0.955		8,581	29,249	37,251
Total revenue	2,46	1,942	3,:50	3.542	12,186	4,011	4,259	4,971	3, 4,	18,561	2,944	4.500	1,144	0,00	23-4-1	
Cast of license revenue	739	201	279	1,057	2,679	1.542	1,347	1,856	1.915	6,260	1,928	2.227	2,505	2.805	9,475	12,209
	119			576	1,290	470			545	2.445	741	364	933	1,008	3,545	4,250
Cast of service	1,464				6,517	2.:99			3.187	10,296	3.300	2.858	4,287	4,768	16,229	20,792
Gross profit	7,404	1.402	1,534	1,50	96911	2.00	2.000			-		100				
Research & development	395	203	347	332	1,278	463	495	572	515	2,035	689	800	888	987	3,284	4,255
Sales & mancoding	+23	457	546	532	2,058	894	787	90+	1,034	3,390	1,048	1,217	1,352	1,502	5,118	6,483
General & administrative	258		333	347	1,304	436	169	488	592	1,985	500	896	772	268	2.225	3,614
Operating income	348		463	596	1,777	808		716	1,046	2,380	954	1.1+2	174	1,421	4,325	5,409
	1													S IN HOUSE		
Other mooms (expense)	162	133	133	123	551	78	100	122	125	426	90	140	150	158	540	600
Pre-cax income	# 510	499	501	7:8	1.128	684	7:2	929	1.171	2,406	1,074	1.292	1,424	1,571	5,042	7,009
											-				-	551
income taxes (benefit)	48	-1	49	27	110	+0		47	47	191	36	103	114	125	425	
Net vicome	+62	605	\$60	691	2,218	544	655	792	1,124	3.215	986	1,169	1,310	1,446	4,933	5,449
													110000			
EPS-fully offused	0.05	0.06	3.06	0.08	0.25	0.07	0.07	0,09	0.13	0.28	0.10	0.12	0.13	0,14	0.49	0.61
Mts. evg. shares are-fully oil. (1)	0 9797	8,700	8.674	8,742	-	2.760	9.962	8,782	8.817		9.500	10,200	10.350	10,400	-	-
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Revenue Breakdown																
Product revenue	64%	56%	88%	67%	68%	75%	72%	78%	80%	78%	77%	77%	77%	78%	77%	78%
Sarvica revenua	36%	34%	32%	33%	34%	25%	28%	22%	20%	24%	23%	23%	23%	22%	23%	22%
Total revenue	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Margin Anelysis											200		11111			
Proguet margin		\$1.9%			54,6%	55.6%	66.0%					58.0%		58.0%	58.0%	58.0%
Sarvice margin	52.8%	49,6%			51.2%	52.5%		42.2%	42.2%	45.6%	47.0%	47,0%	47 2%	47.0%	47.0%	48.0%
Gross margin	55.2%	61.1%	53.8%	52.6%	53.5%	54.8%	53.4%	53.6%	55.5%	54.4%	\$5.4%	85,4%	58.5%	35.8%	35.5%	55.8%
	14.9%	10.7%	11.0%	11.3%	11.2%	11.6%	** **	11,5%	9.0%	10.7%	17,5%	11.5%	11.5%	11,5%	11.5%	11.5%
losearch & development	18.0%	16,1%	17.0%	17,0%	16.0%	17.3%	17.8%	18.1%	18.0%	17.3%	17 5%		17.5%	17.5%	17.5%	17,4%
Sales & marketing			10.6%	9,8%	10.7%	10.9%		9.0%	10.3%	10.4%	10.0%		10,0%	10.0%	10.0%	9.7%
Senersu & administrative	12,1%	12.5%	14.0%	16,3%	14.6%	16,1%		14,4%	19.2%	15.6%	16.4%	16,4%	16.5%	18.6%	16.5%	17.2%
Doerwing margin	12,115	12,019	14.376	10,079							-	0.773.00		111111111111111111111111111111111111111		
Pre-tax margin	19.2%	17,0%	19,1%	20.2%		17.1%	16.3%					10.6%	(907)	18.2%	18.2%	18.8%
Meetive dax rate	9.4%	-1.2%	88%	3.8%	4,7%	5.8%	5.0%	5.8%	4.0%	5.6%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
let margin	17-4%	17,8%	17.9%	19,5%	10.2%	16.1%	15.0%	15.9%	19.6%	16.8%	16.5%	17,1%	17,0%	16.3%	16.9%	17.3%
Sequential change:		122	2200			27%	3%	24%	1916	-	3%	16%	1255	1216	-	-
product revenue	-	10%	14%	1119	-		26%	-11%	4%		5%	17%	8%	8%	-	
Service revenue	- 44	1%	5%	18%	-	-15%	26%	14%	16%		4%	1676	1175	1195	-	-
Total revenue	-	7%	1175	12%	-	1				-		6300				
lesearch & development exe.	-	-23%	18%	-4%	-	39%	514	18%	-10%	-	34%	16%	11%	11%	-	-
Sales & marketing exp.	-	3%	1916	16%	-	10%	11%	17%	16%	-	1%	16%	11%	1175	-	-
General & soministrative exp.	-	915	25	4%	-	26%	8%	4%	21%	-	156	16%	11%	11%	-	-
car-on-year change:																
rear-on-year change:	176%	118%	102%	20%	105%	78%	86%	50%	92%	80%	52%	70%	54%	45%	54%	29%
roduct revenue	20%	-10%	4%	26%	8%	445	29%	10%	2010	10%	41%	31%	59%	65%	49%	22%
Torsi revenue	20°-	47%	47%	82%	56%	51%	54%	58%	62%	57%	494h	59%	55%	49%	55%	27%
							0.000	50%	67%	60%	51%	65%	60%	50%	66%	28%
Pross profit	112%	52%	58%	47%	62%	50%	51%	52%	76%	6015	62%	87%	78%	28%	6215	3374
berosng income	122*4	118%	107%	126%	118%	72%	6716	10000000		40%	57%	81%	70%	34%	57%	31%
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ELRON after 10/4. 972-3-9254-666 (skanon) Jain Bar-Tov < mobile 7 759 6339 9/20/99 - TTI Telecour - Irraeli co. (pent of Team) on NASDAQ network met (D6 platformes (AvioN)) CLER's certomen (Junel phone cos.) 300 employees 30H revenue 40.5/show 4904 whit cap. 20 in US ( new York) not for tale Elmon to buy out a majority share holder 20% Rev non-45 25-30% in 45 Cellular + telephone cos. as cut might be complementary to NCC strengthen Egit Liter division proje tability \$5-64 leceuse revenues Agrical sale . SM - 24 plan with substantial on tite implementation and support

Subj: Trying to reach you

Date: 9/28/99 8:14:11 AM Eastern Daylight Time

From: ybert@ibm.net (Yair Bar-Touv)

Reply-to: ybert@ibm.net To: Burtgrad@aol.com

Hello Burt.

I am trying to engage you on behalf of Koby Ben- Zvi in a preliminary due dillgence assignment regarding a company we sort of want to aquire a majority in the area of Telecom related systems integration.

Koby is on vacation, but I was asked to try to fill you in. Please give me a call at the office at 781-9936011 or via my admin 781-9936108

**Best Regards** 

Yair Bar-Touv Elron Software Systems Integration General Manager

- Headers

Return-Path: <ybert@ibm.net>

Received: from rly-yd03.mx.aol.com (rly-yd03.mail.aol.com [172.18.150.3]) by air-yd05.mail.aol.com (v60.28) with ESMTP;

Tue, 28 Sep 1999 08:14:11 -0400

Received: from out4.prserv.net (out4.prserv.net [165.87,194.239]) by rly-yd03.mx.aol.com (v61.9) with ESMTP; Tue, 28 Sep 1999 08:14:09 -0400

Received: from ibm.net (slip129-37-108-91.nj.us.ibm.net [129.37.108.91])

by out4.prserv.net (/) with ESMTP id MAA15656

for <Burtgrad@aol.com>; Tue, 28 Sep 1999 12:14:06 GMT

Message-ID: <37F0AAA0.E672D22E@ibm.net>

Date: Tue, 28 Sep 1999 04:46:40 -0700 From: Yair Bar-Touv <ybert@ibm.net>

Reply-To: ybert@ibm.net Organization: Elron Software X-Mailer: Mozilla 4.61 [en] (WinNT; I)

X-Accept-Language: en MIME-Version: 1.0

To: Burtgrad@aol.com Subject: Trying to reach you

Content-Type: text/plain; charset=us-ascii

Content-Transfer-Encoding: 7bit

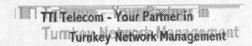
# **About TTI**

TTI Telecom - Your Partner in Turnkey Network Management

Open Vendor-Independent Interface for Standard and Legacy Protocols

■We Focus On Network Management So You Can Focus On Telecom Service

Multi-Layer Management



#### Today's Telecom Market: Challenges & Opportunities

Deregulation, privatization, and technological advances have created powerful business opportunities for telecommunications service providers, and at the same time have fostered a fiercely competitive environment. To maintain a high level of customer satisfaction, it is necessary to both optimize network performance and introduce innovative services, while keeping operating costs at a minimum. This entails implementing an effective Network Management System (NMS).

#### Get Competitive, Get Netrac

Improve your competitive edge with an NMS that is scalable, flexible, and vendor independent - in short, the Netrac suite of network management solutions from TTI Telecom. Featuring a comprehensive set of modular 'building blocks', Netrac can be easily customized and quickly deployed to meet virtually any network management requirement.



#### A Flexible NMS Solution for Any Network...

Netrac is designed to manage and control today's network infrastructures, and easily scale up to handle new services and expanded functionality for the networks of tomorrow. Netrac provides Fault, Configuration, Accounting, Performance and Security Management ("FCAPS") for wireline, wireless, and Signaling System 7 (SS7) networks. Netrac supports industry standard protocols (CMIP/Q3, SNMP), as well as legacy interfaces to any element within the telecommunications network.

#### ...Any Carrier...

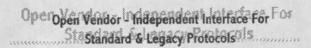
All telecommunications operators can benefit from the Netrac suite of Network Management applications. Netrac offers cellular operators true GIS-based applications with real-time cell

statistics. International carriers can cut costs with traffic analysis by destination and routing optimization mod- ules. Competitive local exchange carriers can fine tune networks with switching and transmission management tools.

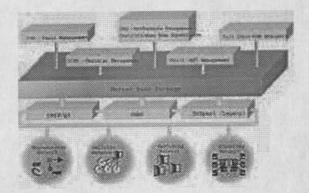
#### ...and Any Telecom Technology

Netrac management solutions are available for the complete range of telecommunications infrastructure and technologies including switching, SDH/SONET, ATM, SS7, WLL, cellular base stations & associated switches, advanced testing equipment, and more.





#### **Integrated Management of Hybrid Networks**



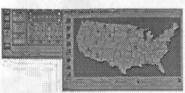
Netrac interfaces with any Network Element (NE) using standard protocol such as CMIP/Q3 or SNMP, legacy protocols such as the various TL1 dialects, or any proprietary ASCII-based protocols. This is accomplished through Netrac core modules: Netrac Base Package, DvXpert (Device Expert), and NCI (Netrac Command Interface).

The Netrac Base Package supports standard interfaces in conjunction with most commercial platforms, and provides SNMP management and ASN.1/GDMO support.



The Netrac DvXpert is an expert system-based module able to process any data stream using rule-based parsing, analysis and correlation. This allows the Netrac operator to quickly generate new interfaces and new analysis patterns by changing the 'rules' - thereby

TTI - About - text Page 3 of 4



analysis patterns by changing the 'rules' - thereby eliminating the need to add or change software code.

The NCI provides a vendor-independent interface for sending commands and controls, such as provisioning, activation command, or traffic controls to network elements.

#### Manage Hybrid Networks with One Integrated System

Netrac's broad range of integrated modules enables a telecommunications operator to manage switching, transport, signaling, and AIN networks using a single NMS solution. Netrac collects alarms, performance measurements and Call Detail Records (CDRs) to manage and control the switching network.

Netrac provides management solutions for all types of transmission equipment, including SONET/SDH, digital cross connects, and broadband ATM.

Netrac supports wireless networks and interfaces to cellular switches and base stations, as well as wireless local loop (WLL) equipment and microwave networks. Netrac also manages SS7 networks by collecting information from probes connected directly to the SS7 links, as well as from SPs and STPs.



### We Focus On Network Management So You Can Focus On Telecom Service

TTI Telecom is a highly focused company that places all its R&D resources into telecommunications Network Management Systems (NMS) and Operational Support Systems (OSS). For over a decade, TTI has provided customers with turnkey management solutions that are comprehensive, rapidly deployed and cost effective. This ensures that our customers can concentrate on rolling out new services, reduce operational costs, and improve their Quality of Service (QoS).

#### Network Management Partnership at Every Level

Public telephone operators, long distance carriers, CLECs and cellular operators, as well as leading telecom equipment vendors the world over are maintaining smooth, profitable networks with TTI technology. TTI has succeeded in building a loyal and diverse customer base by quickly responding to specific customer requirements, and often tailoring our solutions to meet these specific needs. TTI applications are supported by 'top to bottom' installation and training, together with technical support (on and off site), maintenance, and site management.

	38.3

### Multi-Layer Management

Netrac's Comprehensive TMN solution provides:

- Element Management solutions for specific network elements
- Network Management solutions for an integrated, network-wide view
- Service Management applications that demonstrate the effects of network behavior on telecom services
- Business Management application tools for maximizing prof-itability and differentiating services



# **Netrac's Advanced Solutions**

Some of the Netrac building-blocks used for tti telecom's turnkey solutions include:

Core Traffic SS7 CDR Cellular Configuration

### Netrac Core Modules S

- Netrac Base Package the underlying infrastructure for TTI's comprehensive NMS solutions. Includes support of standard protocols, APIs to third-party platforms, configuration, and security management.
- Device Expert (DvXpert) an expert system for analysis of network element data. The DvXpert is able to process any data stream and provides rule-based parsing, analysis, storage, and correlation of incoming data.
- Netrac Command Interface (NCI) provides a vendor-independent interface to send provisioning and activation commands, traffic controls, and other data to network elements.
- ♣ Fault Management (FaM) monitors, analyzes, correlates and displays various network alarms. FaM identifies the fault, performs root-cause analysis, generates trouble tickets, and suggests corrective measures.
- C Top

### Netrac Traffic Management Modules 10165

- Performance Management Module (PMM) provides switch-based performance and quality of service analysis. PMM offers robust tools to the traffic engineer for network planning and optimal network utilization. It includes "busy-hour" analysis and comprehensive historical reports.
- \*\*TrafficView provides real-time traffic and performance surveillance, current traffic behavior status and an indication of exceptions and abnormalities. TrafficView includes real-time, adaptive statistical analysis tools that automatically adjust thresholds by 'learning' network behavior.
- Traffic Control Handler (TCH) dispatches control messages back to switches, based on advanced traffic analysis. The TCH module sends and monitors the controls, assuring optimal network performance.
- Traffic Simulator (SIM) provides improved network reliability, avoids over-engineering, and optimizes utilization of network infrastructure by simulating traffic "what-if" scenarios. Traffic simulation generates valuable information about the behavior, efficiency, and survivability of the network under varying conditions.

Top

### Netrac SS7 Management Modules 1106

Network Wide View 7 (NWV-7) - carries out full SS7 monitoring and surveillance directly from the SS7 signaling links. From network-wide down to single SS7 message details, NWV-7 includes SS7 performance, traffic and alarm management, as well as call trace and fraud detection. NWV-7 also serves as a 'platform' for additional revenue-generating applications.

● Inter7 Accounting - an SS7 inter-carrier accounting system that accurately measures network usage by/for other carri-ers. Based on the collection of 'neutral' SS7 link data, Inter7 Accounting can serve as an objective and reliable meter of network usage by other carriers, thereby reducing inter-carrier discrepancies.

(Produced and marketed by TTI's subsidiary).

Top

### Netrac CDR/AMA-based Solution

©CallExpert - a CDR mediation and analysis system. Call Expert collects Call Detail Records (CDRs) or Automatic Message Accounting (AMA) records and stores them in a CDR/AMA data warehouse, ready for value-added additional applications and external systems. CallExpert applications include the generation of QoS and traffic indicators, analysis of subscriber patterns, fraud management, billing verification and inter-carrier accounting.

C Top

### Netrac Cellular Solution

TTI Cellular Application Module (TCAM) - a cellular network management monitoring and control system, providing fault, traffic and configuration management of cellular networks, including GIS network layout maps and analysis of cellular performance indicators. TCAM, integrated with the Netrac core and SS7 management modules, provides a comprehensive solution for cellular carriers.

C Top

### Netr Netrac Configuration Management Solution 11011

Network Configuration and Provisioning (NetCAP) - manages the telecom network inventory and performs automatic service provisioning for wireline and wireless networks. NetCAP supports the various switching (PSTN, SS7) transport media (cables, satellite, radio) transport facilities (SDH/SONET, PDH) and datacom (TDM, IP) technologies. NetCAP is fully integrated with the Netrac operational support modules and provides an optimal solution for the service management needs of any telecommunication service provider.

Core Traffic SS7 CDR Cellular Configuration

# **Investor Relations**

#### **Business Definition**

TTI develops, markets and supports advanced Network Management Systems (NMS) and Operational Support Systems (OSS) for the telecommunications industry.

TTI's customized solutions empower telecom service providers to improve the quality of existing services, offer new services over complex networks, maximize return on investment in network infrastructure, and streamline operations to compete cost-effectively.

Unlike other NMS providers who serve multiple industries, TTI is focused on meeting the rapidly changing network management needs of telecom service providers and equipment vendors.

#### TTI at a Glance

- Originally established as department within Team Computers & Systems in 1987
- Formally established as independent subsidiary of Team in 1992
- Rapid growth from 15 employees in 1993 to 160 at year-end 1997
- \* Customers in North America, South America, Europe and Israel
- US subsidiary established in 1996
- IPO on NASDAQ (TTIL) in December, 1996

#### **Netrac Solutions**

TTI's Netrac family of advanced NMS solutions possess a number of key advantages:

- Turnkey solutions readily customized to specific customer needs
- Modular, scaleable and rapidly deployable
- Management of heterogeneous network management systems
- Open architecture and vendor independent
- Compliant with TMN framework and other telecom and computing standards

#### **Ongoing Product Development**

Product development at TTI is driven by the following principles:

- Customer-focused development to meet the evolving needs of telecom service providers and equipment vendors
- New releases of existing products on a regular basis that include new features, interfaces and technologies
- Incorporating products and features originally tailored for specific customers into the Netrac family of products available to all customers
- Commitment to technological leadership based on:
  - supporting new services and technologies (e.g. ATM, SDH/SONET)
  - complying with evolving standards (e.g. TMN, CORBA)
  - · utilizing the latest proven development techniques and methodologies

Strategic Alliances

Through appropriate strategic relationships, TTI is extending both its marketing reach and its technological leadership. TTI has established strategic relationships with leading vendors of telecom equipment, test systems and probes, and computer hardware, including:

- Nortel
- Motorola
- ECI Telecom
- Siemens
- # IBM
- General Signal Networks
- Consultronics

#### **Corporate Offices**

#### TTI Headquarters

TTI - Team Telecom International Ltd. 7 Martin Gahl St. Kirvat Arveh, Petach Tikva 49512 Israel

Tel: + 972-3-9269700

Fax - Management: + 972-3-9269849 Fax - Sales & Marketing: + 972-3-9221249 Contact: Gidion Levin

Fax - Development: + 972-3-9269754

E-mail: info@tti-telecom.com

**North American Offices** 

70 Hudson St., 6th Floor Hoboken New Jersey 07030

USA

Tel: +1-201-795 3883

Fax: +1-201-795 3920

Email: gidi@tti-telecom.com



# Investor Relations

#### NASDAQ/NM: TTIL

TTI Telecom develops, markets and supports advanced, modular, integrated software products and services for operations support systems ("OSS") and network management systems ("NMS") for the telecommunications industry.

#### Top Institutional Holders

Bank Of America William Harris Investments LaSalle National Bank Bentley Capital Mgmt. General Electric Inv. Oppenheimer & Co. Weiss Peck & Greer LLC

### Analyst Coverage

**CIBC World Markets** 

#### As of August 16, 1999

Recent Price: 52 Week Range: \$13.38 - 3.06 Shares Outstanding: 9,360,626 3.912.742 Market Capitalization: \$100 million Insider Ownership: 54.5%

\$10.31

#### Today's Telecom Market

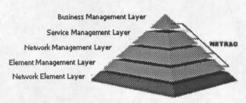
Deregulation, privatization and technological advances have created a proliferation of new telecommunications service providers, and at the same time have fostered a fiercely competitive environment. To maintain a high level of customer satisfaction, these new operators must optimize network performance, while keeping operating costs to a minimum. Only an effective Network Management System (NMS) can provide the tools to satisfy these demands. However, unlike their highly protected predecessors, new operators do not have the time or infrastructure to develop such systems. Increasingly, they are turning to outside vendors to provide comprehensive NMS solutions.

#### TTI Telecom's Solutions

TTI Telecom's solutions, based on its NETRAC family of products, enable telecommunications service providers to improve the quality of existing services, streamline their operations in order to compete cost-effectively, maximize network infrastructure the return on investment, and offer new services over complex networks. The Company's products manage mission-critical functions such as fault management, traffic management, configuration management and Fraud control.

Netrac

The Netrac suite of turnkey solutions offers scalable, flexible and vendor-independent network management for all types of telecommunication operators. Netrac provides Fault, Configuration, Accounting, Performance and Security Management ("FCAPS") for wireline, wireless and Signaling System 7 (SS7) networks. The



Netrac suite consists of a core base package with numerous building-block modules that can be specifically tailored to each carrier's needs. These additional modules include: SS7, CDR/AMA, Cellular, International/LD, Transmission Management.

#### **Investment Considerations**

#### Global Customer Base and Reach

TTI Telecom has the ability to closely serve its existing customers in the major telecommunication markets of Europe, Israel, Asia and the Americas, and capitalize upon new opportunities wherever they may arise. Customers include: Bezeq (Israel), AT&T Local Services, Hongkong Telecom, Belgacom, Telkom South Africa, Motorola, PT-1, RSL Communications, Tele2 (Sweden), Telefonica Cellular (Brazil), Telenet (Belgium), TELUS (Canada), VIAG Interkom (Germany) and dozens of others.

#### Opportunities for Growth

With significant deregulation efforts under way around the world, strategy is to leverage existing relationships and partnerships to expand its already strong presence in these markets, and others. This strategy has been particularly successful in Brazil, one of the world's fastest growing, recently privatized, telecommunication markets and the Benelux countries.

#### Strategic Distribution Relationships

TTI Telecom enjoys impressive marketing and sales relationships of varying scope and nature. Inrange Technologies TTI Telecom jointly sell to the SS7 Management marketplace. Construtel, Brazil's leading telecoms infrastructure company, TTI Telecom's marketing representative in the Brazilian market. Other distribution relationships include: Motorola, Siemens AG, Hewlett Packard, Nortel and Teleco Systems. In June 1998, TTI Telecom and IBM signed an agreement for IBM to remarket TTI Telecom's Netrac in combination with IBM solutions, and have a number of sales around the world.

#### To TTI Telecom Financial Results Tables

Investor Contact:
Jody Burfening
Lippert Heilshorn & Associates
212-838-3777 Ext. 304
jody@lhai.com

© Company Contact: Meir Lipshes Chief Executive Officer 972-3-926-9700 http://www.ttitelecom.com



# Investor Relations

#### TTI TELECOM INTERNATIONAL LTD. REPORTS SECOND QUARTER RESULTS

Petach Tikva, Israel, August 12, 1999

TTI Telecom International Ltd. (NASDAQ/NM symbol: TTIL), a leading provider of integrated, turnkey software solutions for telecom service providers, today announced record unaudited results for the second quarter ended June 30, 1999.

Revenues for the second quarter of 1999 reached \$7.2 million, an increase of 65% versus \$4.4 million for the second quarter of last year. Product sales increased 80% to \$5.6 million compared to \$3.1 million for the same period last year. Operating income rose 106% to \$1.3 million compared to \$612 thousand for the same quarter of 1998. Net income for the quarter reached \$1.4 million, or \$0.13 per diluted share, versus \$655 thousand, or \$0.07 per diluted share, last year.

Revenues for the six months ended June 30, 1999 reached \$13.6 million, an increase of 62% versus \$8.4 million for the same period last year. Product sales increased 70% to \$10.5 million compared to \$6.1 million for the same period last year. Operating income rose 101% to \$2.4 million compared to \$1.2 million for the same period of 1998. Net income for the quarter reached \$2.6 million, or \$0.26 per diluted share, versus \$1.3 million, or \$0.15 per diluted share, last year.

Commenting on the results, Mr. Meir Lipshes, Chief Executive Officer, said, "This quarter marks another quarter of record revenues for TTI Telecom, reflecting a \$2 million order with Maltacom and ongoing implementation of our two largest contracts according to schedule. On-time delivery is critical to the success of these projects and the principle criteria for references from these customers in the future.

"We continue to execute on our product strategy to enrich our product offering with a variety of OSS solutions integrated with our network management system. This quarter, we introduced the Netcap product line of inventory configuration and provisioning tools and are continuing to develop a fraud detection solution."

Mr. Lipshes concluded, "To sell these OSS products, we are targeting our existing customers first. Our objective, by expanding our product line, is to create new tender opportunities and increase the revenue potential per customer. With our expertise in network management system technology, we believe we are well positioned to succeed in this market."

#### About TTI Telecom

TTI Telecom International Ltd. develops, markets and supports advanced, modular, integrated software products and services for operations support systems ("OSS") and network management systems ("NMS") in the telecommunications industry. The Company's solutions, based on its Netrac family of products, enable telecommunications service providers to improve the quality of existing services, streamline their operations in order to compete cost-effectively, maximize the return on their investment in network infrastructure and offer new services over complex networks. The Company's products manage mission-critical functions, such as fault management, performance management, configuration management and security management. Its growing family of Netrac NMS/OSS application tools are used by telecommunications companies worldwide and include leading service providers such as Sweden's Tele2 AB, RSL-Com in the UK. Germany's VIAG Interkom, SaskTel in Canada, and HK Telecom in Hong Kong.

TTI - IR - Finance Page 2 of 4

Forward looking statements in this release involve a number of risks and uncertainties including, but not limited to, product demand, pricing, market acceptance, changing economic conditions, risks in product and technology development, the effect of the Company's accounting policies as well as certain other risk factors which are detailed in the Company's SEC fillings.

### TTI TEAM TELECOM INTERNATIONAL LTD. STATEMENT OF INCOME

(in thousands of dollars, except per share data)

	Three Months Ended 6/30/99	Three Months Ended 6/30/98	Six Months Ended 6/30/99	Six Months Ended 6/30/98
	A SA SA SA	Unaud	dited	
Revenues:	AMERICA		LEW TOTAL	12 10 12 12
Product Sales	\$5,637	\$3,125	\$10,456	\$6,145
Services and other	1,584	1,244	3,126	2,235
Total revenues	7,221	4,369	13,582	8,380
Cost of revenues:				
Product cost	2,392	1,348	4,450	2,690
Services and other	956	689	1,781	1,158
Total cost of revenues	3,348	2,037	6,231	3,848
Gross profit	3,873	2,332	7,351	4,532
Research and development costs, net	606	485	1,146	948
Selling and marketing expenses	1,301	767	2,470	1461
General and administrative expenses	705	468	1,282	905
Total Operating expenses	2,612	1,720	4,898	3,314
Operating income	1,261	612	2,453	1,218
Financial income, net	192	100	302	178
Income before taxes	1,453	712	2,755	1,396
Income Taxes	100	57	194	97
Net income	\$1,353	\$655	\$2,561	\$1,299
Basic earnings per share	\$0.14	\$0.08	\$0.28	\$0.16
Diluted earnings per share	\$0.13	\$0.07	\$0.26	\$0.15
Number of shares used in computing basic income per share	9,380,749	8,159,996	9,035,845	8,152,269
Number of shares used in computing diluted income per share	10,113,781	8,961,526	9,783,676	8,863,401

# TTI TEAM TELECOM INTERNATIONAL LTD. CONSOLIDATED BALANCE SHEETS

(in thousands of dollars)

	June 30 1999	December 31 1998	
Ass	et		
Current Assets:			
Cash and cash equivalents	\$11,667	\$5,375	
Short-term bank deposit	2,533		
Trade receivables	7,054	6,995	
Unbilled receivables	6,591	5,291	
Other account receivable and prepaid expenses	1,643	728	
Total current asset	29,488	18,389	
Severance pay fund	1,256	1,010	
Property and equipment			
Cost	7,162	5,810	
Less - accumulated depreciation	2,370	1,765	
	4,792	4,045	
Total assets	\$35,536	\$23,444	

### Liabilities and Shareholder's Equity

Current Liabilities		
Short term bank debt	\$44	\$201
Trade payables	1,498	1,419
Related parties	547	433
Other accounts payable and accrued expense	3,134	1,812
Total current liabilities	5,223	3,865
Accrued Severance Pay	1,885	1,469
Shareholders' Equity		
Share capital	1,496	1,348
Additional paid-in capital	17,515	9,906
Retained earnings	9,417	6,856
Total shareholders' equity	28,428	18,110
Total liabilities and shareholders' equity	\$35,536	\$23,444

<sup>1</sup>Q99 Financial Results

## **Investor Relations**

# TTI Telecom International Ltd. Reports Record Revenues and Net Income for First Quarter 1999 Revenues up 59%: EPS up 86%

Petach Tikva, Israel, May 12, 1999

TTI Telecom International Ltd. (NASDAQ/NM symbol: TTIL), a leading provider of integrated, turnkey software solutions for telecom service providers, today announced record unaudited results for the first quarter ended March 31, 1999.

Revenues for the first quarter of 1999 reached a record \$6.4 million, an increase of 59% versus \$4.0 million for the first quarter of last year. Product sales increased 60% to \$4.8 million compared to \$3.0 million for the same period last. Operating income rose 97% to \$1.2 million compared to \$606 thousand for the same quarter of 1998. Net income for the quarter reached a record \$1.2 million or \$0.13 per diluted share, versus \$644 thousand or \$0.07 per diluted share last year.

Commenting on the results, Mr. Meir Lipshes, Chief Executive Officer said, "Our record revenues this quarter reflect primarily new contract wins and recurring revenues from existing contract awards. With our turnkey solutions in network management, we are gaining a greater edge in effectively competing for and closing significant new contracts.

"In addition, this quarter we received follow-on orders for product enhancements from existing customers. We expect to increase revenues from follow-on orders as we continue to mine our growing customer base. These follow-on orders serve to further validate our technology and exemplify our ability to grow with our customers as they expand their networks.

"This quarter, more than any other, has illustrated our ability to provide network management solutions to a variety of customers, from traditional telecommunications providers, such as Belgacom and Telkom South Africa, to next-generation, multi-media communications companies, such as Startec Global Communications. With our technology, we have the capability and flexibility to support such leading-edge telecom standards as GSM and many communications services including voice, data & Internet access. With this strong start to the year, along with our growing pipeline of orders, strategic partnership agreements, we feel positive of our continued growth through 1999."

#### **About TTI Telecom**

TTI Telecom International Ltd. develops, markets and supports advanced, modular, integrated software products and services for operations support systems ("OSS") and network management systems ("NMS") in the telecommunications industry. The Company's solutions, based on its Netrac family of products, enable telecommunications service providers to improve the quality of existing services, streamline their operations in order to compete cost-effectively, maximize the return on their investment in network infrastructure and offer new services over complex networks. The Company's products manage mission-critical functions, such as fault management, performance management, configuration management and security management. Its growing family of Netrac NMS/OSS application tools are used by telecommunications companies worldwide and include leading service providers such as Sweden's Tele2 AB, RSL-Com in the UK, Germany's VIAG Interkom, SaskTel in Canada, Embratel in Brazil and HK Telecom in Hong

TTI - IR - Finance Page 2 of 3

Kong.

Forward looking statements in this release involve a number of risks and uncertainties including, but not limited to, product demand, pricing, market acceptance, changing economic conditions, risks in product and technology development, the effect of the Company's accounting policies as well as certain other risk factors which are detailed in the Company's SEC fillings.

### TTI TEAM TELECOM INTERNATIONAL LTD. STATEMENT OF INCOME

(in thousands of dollars, except per share data)

	Three Months Ended 3/31/99	Three Months Ended 3/31/98
Revenues		
Product Sales	\$4,819	\$3,020
Services	1,542	991
Total revenues	6,361	4,011
Cost of revenues:		
Product	2,058	1,342
Service	825	470
Total cost of revenues	2,883	1,812
Gross profit	3,478	2,199
Operating expenses:		
Research and development, net	540	463
Selling and marketing expenses	1,169	694
General and administrative	577	436
Total operating expenses	2,286	1,593
Operating income	1,192	606
Financial income (expenses), net	110	78
Income before taxes on income	1,302	684
Tax on income	94	40
Net income	\$1,208	\$644
Basic earnings per share	\$0.14	\$0.08
Diluted earnings per share	\$0.13	0.07
Number of shares used in computing basic income per share	8,627,445	8,148,413
Number of shares used in computing diluted income per share	9,363,271	8,760,456

# TTI TEAM TELECOM INTERNATIONAL LTD. CONSOLIDATED BALANCE SHEETS

(in thousands of dollars)

	3/31/99	12/31/98	
Asset			
Current Assets:	nor Street		
Cash and cash equivalents	\$12,931	5,375	
Short-term bank deposit	- 0	-	
Trade receivables	8,330	6,995	
Unbilled receivables	6,118	5,291	
Prepaid expenses and other	1,473	728	
Total current asset	28,852	18,389	
Severance pay fund	1,150	1,010	
Property and equipment			
Cost	6,425	5,810	
Less - accumulated depreciation	2,025	1,765	
	4,400	4,045	
Total assets	34,402	23,444	

### Liabilities and Shareholder's Equity

Current Liabilities	11.	
Short term bank debt	189	201
Trade payables	2,215	1,419
Parent and affiliated company debt	863	433
Accrued expenses and other	2,397	1,812
Total current liabilities	5,664	3,865
Accrued Severance Pay	1,693	1,469
Shareholders' Equity	TO ME TO	
Share capital	1,491	1,348
Additional paid-in capital	17,490	9,906
Retained earnings	8,064	6,856
Total shareholders' equity	18,110	14,858
Total liabilities and shareholders' equity	34,402	23,444



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Display InfoQuotes	Enter up to	10 symbols for	Stocks of	or Mutua	al Funds or Options	
Display FlashQuotes Symbol Look-up	TTIL				Get Flash Quotes  Get InfoQuetes	
	Sep. 29, 199	Sep. 29, 1999 10:10 ET Market Open			Clear Symbols	
		Last Sale	Net	%	Share	
	TTILNasdad	-NM\$ 10.0625	Change 0.0625♥	0.62%	Volume 200	

Nasdaq quote information is delayed 15 minutes. All other quote information is delayed 20 minutes.

Information is believed accurate but not guaranteed.

Source of the data: Bridge Information Systems

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MADERA

## What's New

TTI Telecom Awarded a Major Contract by an IBM Company, Tivoli Systems, to Provide an NMS System to Telia

First Award under IBM-TTI Software Remarketing Agreement

Petah Tikva, Israel, Sep 2, 1999

TTI Telecom (NASDAQ: TTIL) a leading provider of integrated, turnkey software solutions for telecom service providers, announced today that Telia, the leading provider of telecommunications services in the Nordic/Baltic region, has awarded a contract for network management products to the partnership of TTI Telecom and Tivoli Systems (NYSE Symbol: IBM).

Under the terms of the contract, Tivoli and TTI Telecom will provide Telia's Networking Division with a Netrac-based Network Management System to manage network faults and to perform complex alarm correlation of Telia's highly advanced transmission network. This multi-million dollar deal will be delivered in two phases with the first phase to be implemented in the first quarter of 2000.

The Netrac solution for Telia is based on two key Netrac applications - the NetCAP configuration and provisioning module and the FaM Fault and Alarm management module. TTI Telecom's solution will provide end-to-end correlation of transmission network alarms.

Bo Fridén Head of the Transmission Division at Telia Network Systems said, "The Netrac system will make it possible for an administrator to identify the root cause of a problem in the network. Redundant information, often hundreds of alarms, can be hidden from the operator so that he/she can concentrate on solving problems. Using Netrac will improve the service level given to our customers."

Tivoli Systems' Senior Vice President, David Murphy commented, "We're excited that Telia, one of the world's most innovative telecommunications service providers, has selected a network management solution from TTI Telecom and Tivoli. By being better able to manage their network resources, Telia should benefit from reduced network operating costs and improved problem-solving opportunities for their network managers. And in the end, it's Telia's customers who will benefit the most from higher quality telecommunications services."

"TTI Telecom is proud of this first major order with our partner IBM-Tivoli, and equally as proud of the opportunity to work with Telia, a telecommunications service provider that has built one of the most technically advanced networks in the world," commented Meir Lipshes, Chief Executive Officer of TTI Telecom. "We continue to establish and strengthen relationships with telecommunications service providers, giving them the capability to efficiently manage their networks as they operate in an increasingly competitive environment."

#### About TTI Telecom:

TTI Telecom International Ltd. develops, markets and supports advanced, modular, integrated software products and services for Operations Support Systems ("OSS") and Network Management Systems ("NMS") in the telecommunications industry.

The Company's solutions, based on its Netrac family of products, enables telecommunications service providers to improve existing services, streamline their operations in order to compete cost-effectively, maximize the return on their investment in network infrastructure and offer new

TTI - NEWS Page 2 of 2

services over complex networks.

The Company's products manage mission-critical functions, such as fault management, performance management, configuration management and security management of telecommunications networks. For more information visit the website at <a href="https://www.tti-telecom.com">www.tti-telecom.com</a>



Is there a 10-K for TTI Telecom? If there is one, how can I get a copy of it?

Burt Grad

Subj: Info on TTI

Date: 9/30/99 1:06:32 AM Eastern Daylight Time

From: ybert@ibm.net (Yair Bar-Touv)

Reply-to: ybert@ibm.net To: Burtgrad@aol.com

Hi Burt.

I heard your admins message today. I personaly do not posses the info on TTI. I know Arye Amit in Haifa does . His email is amit@elron.net

Regards

Yair

Return-Path: <ybert@ibm.net>

Received: from rty-za05.mx.aol.com (rty-za05.mail.aol.com [172.31.36.101]) by air-za03.mail.aol.com (vx) with ESMTP; Thu,

30 Sep 1999 01:06:32 2000

Received: from out1.prserv.net (out1.prserv.net [165.87.194.252]) by rly-za05.mx.aol.com (v61.9) with ESMTP; Thu, 30 Sep

1999 01:06:28 -0400

Received: from ibm.net (slip-32-100-71-193.ca.us.prserv.net [32.100.71.193])

by out1.prserv.net (/) with ESMTP id FAA20720

for <Burtgrad@aol.com>; Thu, 30 Sep 1999 05:06:26 GMT

Message-ID: <37F2EFBA.44C7D22C@ibm.net> Date: Wed, 29 Sep 1999 22:06:02 -0700

From: Yair Bar-Touv <ybert@ibm.net>

Reply-To: ybert@ibm.net Organization: Elron Software

X-Mailer: Mozilla 4.61 [en] (WinNT; I)

X-Accept-Language: en MIME-Version: 1.0 To: Burtgrad@aol.com Subject: Info on TTI

Content-Type: text/plain; charset=us-ascii

Content-Transfer-Encoding: 7bit

). 10 K ) [],

Subj: RE: TTI

Date: 9/30/99 1:29:57 PM Eastern Daylight Time

From: amit@elron.net (Arie Amit)

To: Burtgrad@aol.com

I could not find a 10-k report , I believe that as an Israeli company they should file the 20-f format , same as Elron, but I am not familiar with 20-f online database. I strongly recommend to look at TTI's web site (www.tti.co.il), you could find some interesting information.

#### Arie Amit

Name: Arie Amit

E-mail: Arie Amit <amit@elron.net>

Date: 30/09/99 Time: 19:26:35

----- Headers

Return-Path: <amit@elron.net>

Received: from rly-yg03.mx.aol.com (rly-yg03.mail.aol.com [172.18.147.3]) by air-yg01.mail.aol.com (wx) with ESMTP; Thu,

30 Sep 1999 13:29:57 -0400

Received: from alpha.netvision.net.il (alpha.netvision.net.il [194.90.1.13]) by rly-yg03.mx.aol.com (v61.13) with ESMTP; Thu, 30 Sep 1999 13:29:53 -0400

Received: from arye-pc95 (RAS3-p101.pt.netvision.net.il [62.0.179.103]) by alpha.netvision.net.il (8.9.3/8.8.6) with SMTP id TAA19003

for <Burtgrad@aol.com>: Thu, 30 Sep 1999 19:29:49 +0200 (IST)

Date: Thu, 30 Sep 99 19:26:34 From: Arie Amit <amit@elron.net>

Subject: RE: TTI
To: Burtgrad@aol.com
X-PRIORITY: 3 (Normal)

X-Mailer: Chameleon 5.0, TCP/IP for Windows, NetManage Inc.

Message-ID: <Chameleon.938709090.Amit@arye-pc95>

MIME-Version: 1.0

Content-Type: TEXT/PLAIN; CHARSET=us-ascii