EXHIBIT D

(JTX 186)

To Motion of Entity Defendants VENROCK Associates, *et al.*
for Judgment as a Matter Of Law Pursuant to FRCP 50(A)

From: Walker, Charlie
Sent: Thursday, October 26, 2000 6:54 PM
To: Oppenheimer, Stephan; Soghikian, Shahan
Subject: FW: Information from Cadant

| Financial | Cost Breakdown | Investor | Corporate | Executive Summary |

Financial   Cost Breakdown   Investor   Corporate   Executive Summary
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-----Original Message-----
From: Johnson, Kevin [mailto:kjohnson@cadant.com]
Sent: Wednesday, October 25, 2000 2:28 PM
To: Charlie Walker (E-mail)
Subject: Information from Cadant


 <<Financial Information Next Round.xls>>   <<Cost Breakdown Next Round Financing.xls>>
<<Investor Presentation 10-00.ppt>>   <<Corporate Leadership.doc>>   <<Executive Summary
Septmeber 2000.doc>>
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JTX 0186

Cadant, Inc.

Projected Statement of Financial Position

COMPANY CONFIDENTIAL

($000)	2000 Sept	2000 Oct	2000 Nov	2000 Dec	2001 Jan	2001 Feb	2001 Mar
Current Assets							
Checking/MMA accounts	8,683	9,050	46,620	43,683	50,610	47,855	45,571
Investments	-	-	-		-	-	-
Accounts Receivable-Net							
Accounts Receivable-Affiliates	113	113	113	113	113	113	113
Inventory - Finished goods	-	-	-			283	638
Inventory - raw matls	1,000	1,500	1,800	2,000	2,000	1,717	1,362
Note Receivable	-	-	-	-	-	-	-
Prepaid Expenses	10	10	10	10	20	20	20
Other current assets					20	20	20
Total Current Assets	9,806	10,673	48,543	45,806	52,763	50,008	47,724
Fixed Assets							
Cost	4,724	1,984	2,214	2,954	3,804	4,364	4,844
Accum Depreciation	(759)	(807)	(860)	(934)	(1,031)	(1,142)	(1,266)
Total Fixed Assets (Net)	3,965	1,177	1,354	2,020	2,773	3,222	3,578
Security Deposits	20	20	20	20	20	20	20
Other long term assets	-	-	-	-	-	-	-
Total Assets	$13,791	$11,870	$49,917	$47,846	$55,556	$53,250	$51,321
Liabilities and Equity							
Current Liabilities							
Accounts Payable	1,352	1,024	1,024	716	638	383	388
Income Taxes Payable			-			-	
Accrued Liabilities	553	690	841	719	815	664	678
Bank debt - ST portion	3,005	3,005	3,005	3,005	5,424	5,424	5,424
Capital lease - ST portion	-	-	-	-	-	-	-
Line of credit	-	-	-	-	-	-	-
Deferred revenue	-	-	-	-	-	-	-
Total Current Liabilities	4,910	4,719	4,869	4,440	6,877	6,471	6,489
Bank debt - LT portion	995	995	995	995	8,161	7,833	7,503
Capital lease liab - LT portion	-	-	-	-	-	-	-
Total Liabilities	5,905	5,714	5,864	5,435	15,037	14,304	13,992
Accrued LT liability	-	-	-	-	-	-	-
Shareholder's Equity							
Common Stock	66	66	66	66	66	66	66
Series A Preferred Stock	22,192	22,192	22,192	22,192	22,192	22,192	22,192
Series B Preferred Stock	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Treasury stock @ cost	(600)	(600)	(600)	(600)	(600)	(600)	(600)

	A	B		D	E	F	G	H	I	J	K
50		Add'l Paid-in Capital			-	-	-	-	-	-	-
51		Retained Earnings			(2,428)	(2,428)	(2,428)	(2,428)	(2,428)	(2,428)	(2,428)
52		CY Net Income<Loss>			(11,344)	(13,074)	(15,177)	(16,819)	(18,712)	(20,285)	(21,901)
53	Total Shareholder's Equity				$7,886	$6,156	$44,053	$42,411	$40,518	$38,945	$37,329
54											
55	Total Liabilities and Equity				$13,791	$11,870	$49,917	$47,846	$55,556	$53,250	$51,321

Row	L	M	N	O	P	Q	R	S	T	U	V	W
5	2001	2001	2001	2001	2001	2001	2001	2001	2001	2002	2003	2004
6	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Dec	Dec	Jan
8	43,424	42,054	39,950	38,265	36,727	35,180	33,624	33,648	33,000	42,463	54,877	36,871
10	330	600	660	720	870	1,200	1,800	2,100	2,640	4,608	10,208	11,127
11	113	113	113	113	113	113	113	113	113	113	113	138
12	354	142	-	-	-	-	-	-	-	8,071	33,067	35,463
13	964	1,134	1,360	1,644	2,267	3,401	3,968	4,988	5,038	7,703	19,150	20,873
15	20	20	20	20	20	20	20	20	20	20	20	20
16	20	20	20	20	20	20	20	20	20	20	20	20
17	45,224	44,083	42,124	40,781	40,017	39,934	39,545	40,889	40,831	62,999	117,454	104,512
20	5,324	5,804	6,294	6,774	7,254	7,734	8,214	8,694	9,174	21,474	40,974	40,974
21	(1,404)	(1,554)	(1,718)	(1,895)	(2,084)	(2,287)	(2,504)	(2,733)	(2,975)	(8,093)	(18,552)	-
22	3,920	4,250	4,576	4,879	5,170	5,447	5,710	5,961	6,199	13,381	22,422	40,974
24	20	20	20	20	20	20	20	20	20	20	20	20
27	$49,165	$48,353	$46,720	$45,681	$45,207	$45,401	$45,275	$46,870	$47,050	$76,400	$139,896	$145,506
31	(1)	833	685	758	1,102	1,732	1,023	1,993	534	3,488	5,530	4,716
33	825	1,016	843	768	782	874	784	1,140	816	1,345	1,934	1,172
34	5,424	5,424	5,424	5,424	5,424	5,424	5,424	5,424	5,424	4,972	-	-
38	6,248	7,273	6,952	6,950	7,308	8,030	7,231	8,557	6,773	9,806	7,465	5,888
40	7,169	6,833	6,493	6,150	5,804	5,455	5,103	4,747	4,389	-	-	-
42	13,417	14,105	13,445	13,100	13,113	13,486	12,334	13,305	11,162	9,806	7,465	5,888
46	66	66	66	66	66	66	66	66	66	66	66	66
47	22,192	22,192	22,192	22,192	22,192	22,192	22,192	22,192	22,192	22,192	22,192	22,192
48	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	30,000
49	(600)	(600)	(600)	(600)	(600)	(600)	(600)	(600)	(600)	(600)	(600)	(600)

	L	M	N	O	P	Q	R	S	T	U	V	W
50												
51	(2,428)	(2,428)	(2,428)	(2,428)	(2,428)	(2,428)	(2,428)	(2,428)	(2,428)	(2,428)	(2,428)	(2,427)
52	(23,482)	(24,983)	(25,955)	(26,649)	(27,136)	(27,315)	(26,289)	(25,664)	(23,342)	7,365	73,202	90,387
53	$35,748	$34,247	$33,275	$32,581	$32,094	$31,915	$32,941	$33,566	$35,888	$66,595	$132,432	$139,618
54												
55	$49,165	$48,353	$46,720	$45,681	$45,207	$45,401	$45,275	$46,870	$47,050	$76,400	$139,896	$145,506

Cadant, Inc.
Projected Income Summary
COMPANY CONFIDENTIAL

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
		Plan Sep-00	Plan Oct-00	Plan Nov-00	Plan Dec-00	Plan Jan-01	Plan Feb-01	Plan Mar-01	Plan Apr-01	Plan May-01	Plan Jun-01	Plan Jul-01	Plan Aug-01	Plan Sep-01	Plan Oct-01	Plan Nov-01
7	REVENUE	-	-	-	-	-	-	-	1,320	2,400	2,640	2,880	3,480	4,800	7,200	8,400
9	COST OF SALES	-	-	-	-	-	-	-	779	1,417	1,559	1,701	2,055	2,834	4,251	4,960
11	GROSS MARGIN	-	-	-	-	-	-	-	541	983	1,081	1,179	1,425	1,966	2,949	3,440
13	Pre functional split															
14	Business Development	26	26	26	40	41	50	51	51	51	46	46	46	46	46	46
15	Communications	186	496	767	417	488	113	113	573	888	418	193	188	378	113	923
16	Marketing	52	53	53	53	53	53	53	53	53	53	53	53	53	53	53
17	Product management	43	43	43	43	43	43	43	43	43	43	43	43	43	43	43
18	Operations/Manufacturing	72	75	75	75	73	73	73	73	73	73	73	73	73	73	73
19	Sales	30	96	130	140	149	173	183	183	183	183	183	183	183	183	183
20	Engineering	619	648	674	707	733	758	783	808	833	858	883	908	933	958	983
21	Finance	31	32	69	33	44	60	45	43	45	43	43	43	43	43	83
22	Human resources	6	10	10	11	10	10	9	10	9	13	12	12	12	12	12
23	Exec/G&A	319	249	258	281	404	327	342	356	371	386	401	416	430	445	459
24	OPERATING EXPENSES	1,386	1,729	2,105	1,799	2,038	1,659	1,694	2,193	2,549	2,117	1,931	1,965	2,195	1,970	2,859
26	OPERATING INCOME	(1,386)	(1,729)	(2,105)	(1,799)	(2,038)	(1,659)	(1,694)	(1,653)	(1,566)	(1,035)	(751)	(540)	(229)	979	581
28	Interest income	28	36	38	194	182	211	199	190	181	175	166	159	153	147	140
29	Interest expense	37	37	37	37	37	125	122	118	115	112	109	106	103	100	96
31	PRETAX INC(LOSS)	(1,394)	(1,729)	(2,103)	(1,642)	(1,892)	(1,573)	(1,616)	(1,581)	(1,501)	(973)	(694)	(487)	(179)	1,026	624
33	Income taxes															
35	NET INCOME(LOSS)	(1,394)	(1,729)	(2,103)	(1,642)	(1,892)	(1,573)	(1,616)	(1,581)	(1,501)	(973)	(694)	(487)	(179)	1,026	624

	Q	R	S	T	U	V	W	X
				Fiscal Year Ended December 31, 2001				
5	Plan Dec-01	Plan 1st Q 2001	Plan 2nd Q 2001	Plan 3rd Q 2001	Plan 4th Q 2001	Plan 2001	Plan 2002	Plan 2003
7	10,560	-	6,360	11,160	26,160	43,680	162,294	344,925
9	6,235	-	3,755	6,589	15,446	25,791	90,792	188,070
11	4,325	-	2,605	4,571	10,714	17,889	71,502	156,856
13	-			-	-	-	-	-
14	46	142	148	138	138	567	839	977
15	113	715	1,880	760	1,150	4,505	7,080	10,535
16	53	158	158	158	158	632	755	875
17	43	129	129	129	129	517	535	553
18	73	219	219	219	219	875	913	952
19	183	505	550	550	550	2,155	4,861	7,871
20	1,008	2,273	2,498	2,724	2,950	10,445	13,207	14,421
21	43	150	132	130	170	582	846	1,000
22	12	28	31	36	36	131	144	144
23	474	1,073	1,114	1,247	1,378	4,812	9,481	11,971
24	2,049	5,391	6,859	6,091	6,878	25,219	38,662	49,300
26	2,276	(5,391)	(4,254)	(1,520)	3,836	(7,330)	32,840	107,555
28	140	592	546	479	427	2,044	1,832	2,173
29	93	283	346	318	289	1,237	299	-
31	2,323	(5,082)	(4,055)	(1,360)	3,973	(6,523)	34,372	109,728
33							3,666	43,891
35	2,323	(5,082)	(4,055)	(1,360)	3,973	(6,523)	30,706	65,837

Cadant, Inc.

PROJECTED STATEMENT OF CASH FLOWS

COMPANY CONFIDENTIAL

		2000 Sept	2000 Oct	2000 Nov	2000 Dec	2001 Jan	2001 Feb	2001 Mar	2001 Apr	2001 May
12	**OPERATING ACTIVITIES**									
13	Net income <loss>	(1,394)	(1,729)	(2,103)	(1,642)	(1,892)	(1,573)	(1,616)	(1,581)	(1,501)
14	add back depreciation/amort	124	48	54	74	97	111	124	137	150
15	Issuance of Com Stck for servs									
17	*Changes in operating assets/liabs*									
18	Accounts receivable - net								(330)	(270)
19	Accounts recievable - affiliates									
20	Inventory - Finished goods						(283)	(354)	283	213
21	Inventory - Raw materials	(1,000)	(500)	(300)	(200)		283	354	399	(170)
22	Notes receivable									
23	Prepaid expenses					(10)				
24	Investments									
25	Other current assets					(20)				
26	Security deposits									
27	Accounts payable	634	(328)	0	(308)	(79)	(254)	5	(388)	834
28	Accrued liabilities	(220)	137	150	(122)	97	(151)	14	147	191
29	Income taxes payable									
30	Deferred revenue									
31	Other accrue LT liab									
32	NET CASH PROVIDED BY (USED									
33	BY) OPERATING ACTIVITIES	(1,856)	(2,373)	(2,200)	(2,196)	(1,808)	(1,867)	(1,474)	(1,333)	(553)
35	**INVESTING ACTIVITIES**									
36	Fixed asset additions	(270)	2,740	(230)	(740)	(850)	(560)	(480)	(480)	(480)
37	NET CASH USED INVESTING ACTIVITIES	(270)	2,740	(230)	(740)	(850)	(560)	(480)	(480)	(480)
39	**FINANCING ACTIVITIES**									
41	Proceed from issuance of Common stock			40,000						
42	Line of credit									
43	Bank debt	4,000				9,585	(327)	(330)	(334)	(337)
44	Proceeds from capital leases									
45	Proceeds from exercise of stock options									
46	Proceeds from <repayment of> shareholder loan(s)									
47	Purchase of Treasury stock									
48	NET CASH PROVIDED BY									
49	<USED IN> FINANCING ACTIVITIES	4,000	-	40,000	-	9,585	(327)	(330)	(334)	(337)

	A	B	C	D	E	F	G	H	I	J
51	INCREASE<DECREASE> IN									
52	CASH & CASH EQUIVALENTS	1,874	367	37,570	(2,938)	6,927	(2,755)	(2,284)	(2,147)	(1,369)
53										
54	BEGINNING CASH & CASH EQUIV	6,809	8,683	9,050	46,620	43,683	50,610	47,855	45,571	43,424
55										
56	ENDING CASH & CASH EQUIV	8,683	9,050	46,620	43,683	50,610	47,855	45,571	43,424	42,054

	K	L	M	N	O	P	Q	R	S	T
								Fiscal Year	Fiscal Year	Fiscal Year
8	2001	2001	2001	2001	2001	2001	2001	2001	2002	2003
9	June	July	Aug	Sept	Oct	Nov	Dec			
13	(973)	(694)	(487)	(179)	1,026	624	2,323	(6,523)	30,706	65,837
14	164	177	190	203	216	229	242	2,041	5,118	10,459
18	(60)	(60)	(150)	(330)	(600)	(300)	(540)	(2,640)	(1,968)	(5,600)
20	142								(8,071)	(24,995)
21	(227)	(283)	(624)	(1,134)	(567)	(1,020)	(50)	(3,038)	(2,665)	(11,446)
23								(10)		
25								(20)		
27	(148)	72	345	630	(709)	970	(1,460)	(183)	2,955	2,042
28	(179)	(74)	14	92	(90)	356	(324)	97	528	589
33	(1,274)	(863)	(712)	(718)	(724)	859	191	(10,275)	26,603	36,886
36	(490)	(480)	(480)	(480)	(480)	(480)	(480)	(6,220)	(12,300)	(19,500)
37	(490)	(480)	(480)	(480)	(480)	(480)	(480)	(6,220)	(12,300)	(19,500)
43	(340)	(343)	(346)	(349)	(352)	(356)	(359)	5,813	(4,841)	(4,972)
49	(340)	(343)	(346)	(349)	(352)	(356)	(359)	5,813	(4,841)	(4,972)

	K	L	M	N	O	P	Q	R	S	T
51									-	-
52	(2,104)	(1,686)	(1,538)	(1,547)	(1,556)	24	(647)	(10,682)	9,462	12,414
53									-	-
54	42,054	39,950	38,265	36,727	35,180	33,624	33,648	43,683	33,000	42,463
55									-	-
56	39,950	38,265	36,727	35,180	33,624	33,648	33,000	33,000	42,463	54,877

	A	B	C	D	E
1		Cadant, Inc.			ASSUMPTIONS
2		Revenue, COGS & Inventory Forecast			C4 CMTS
3					Additional Cards
4					D-CARDS
5					E-CARDS
6					F-CARDS
7					M-CARDS
8		($000 except unit price & cost)			
9					
10	UNIT SALES		Jul-00	Aug-00	Sep-00
11					
12	C4 CMTS		-	-	-
13	D-CARDS		-	-	-
14	E-CARDS				-
15	F-CARDS				-
16	M-CARDS				-
17	OTHER		-	-	-
18					
19	TOTALS (ALL PRODUCTS)		-	-	-
20					
21	REVENUES				
22					
23	C4 CMTS		-	-	-
24	D-CARDS		-	-	-
25	E-CARDS				
26	F-CARDS				
27	M-CARDS				
28	OTHER		-	-	-
29					
30					
31	GROSS REVENUES		-	-	-
32					
33	COST OF SALES				
34					
35	C4 CMTS		-	-	-
36	D-CARDS		-	-	-
37	E-CARDS				
38	F-CARDS				
39	M-CARDS				
40	OTHER		-	-	
41					
42	Total Cost of Sales		-	-	-
43					
44					The information contained herein is Cadant Proprietary & Confidential
45					All estimates presented here are based on the industry market opportunity as well as internal planning by Cadant Sales & Marketing Team and are subject to change without notice.
46					Please request authorization from Cadant prior to distribution of this information

	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
1				UNIT PRICE		UNIT COST		UNIT MARGIN							
2				120,000		70,854.43		41%							
3				13,188		4,470.15		60%							
4				24,750		6,668.50		60%							
5				12,000		4,674.40		61%							
6				10,000		4,126.15		59%							
7				6,000		2,411.55		60%							
8															
9															
10	Oct-00	Nov-00	Dec-00	Jan-01	Feb-01	Mar-01	Apr-01	May-01	Jun-01	Jul-01	Aug-01	Sep-01	Oct-01	Nov-01	Dec-01
11															
12	-	-	-	-	-	-	11	20	22	24	29	40	60	70	88
13	-	-	-	-	-	-		-	-	-					
14	-	-	-	-	-	-		-	-	-					
15	-	-	-	-	-	-			-	-					
16	-	-	-	-	-	-			-	-					
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18															
19	-	-	-	-	-	-	11	20	22	24	29	40	60	70	88
20															
21															
22															
23	-	-	-	-	-	-	1,320	2,400	2,640	2,880	3,480	4,800	7,200	8,400	10,560
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25							-	-	-	-	-	-	-	-	-
26							-	-	-	-	-	-	-	-	-
27							-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29															
30															
31	-	-	-	-	-	-	1,320	2,400	2,640	2,880	3,480	4,800	7,200	8,400	10,560
32															
33															
34															
35	-	-	-	-	-	-	779	1,417	1,559	1,701	2,055	2,834	4,251	4,960	6,235
36	-	-	-	-	-	-									
37					-	-									
38					-	-									
39					-	-									
40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41															
42	-	-	-	-	-	-	779	1,417	1,559	1,701	2,055	2,834	4,251	4,960	6,235
43															
44															
45															
46															

	U	V	W
1			
2			
3			
4			
5			
6			
7			
8			
9			
10	2001	2002	2003
11			
12	364	1,127	2,177
13	-	546	1,691
14	-	364	1,127
15	-	364	1,127
16	-	364	1,127
17	-	-	-
18	-	-	-
19	364	2,765	7,249
20			
21			
22			
23	43,680	135,267	261,229
24	-	9,009	27,899
25	-	6,006	18,599
26	-	6,006	18,599
27	-	6,006	18,599
28	-	-	-
29	-	-	-
30	-	-	-
31	43,680	162,294	344,925
32	-	-	-
33	-	-	-
34	-	-	-
35	25,791	79,869	154,244
36	-	3,641	11,275
37	-	2,427	7,517
38	-	2,427	7,517
39	-	2,427	7,517
40	-	-	-
41	-	-	-
42	25,791	90,792	188,070
43			
44			
45			
46			

Corporate Overview

CADANT®
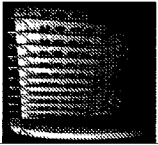
INNOVATIONS IN BROADBAND

Agenda

- Company Overview
- Market Analysis
- Marketing Strategy
- Technology and Products
- Operations
- Lab Tour
- Financials
- Summary & Discussion

CADANT®

INNOVATIONS IN BROADBAND

Cadant Overview

Company Overview
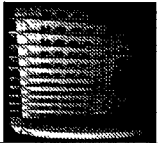
Who We Are

- Cadant is a high-speed networking products company dedicated to bringing Internet and multimedia services to mass markets.

What We Do

- Develop scalable, reliable, high-performance, DOCSIS 1.1 and PacketCable system that bring high-speed broadband data and IP telephony services to mass markets.
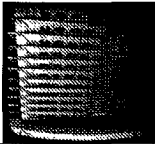
Company Overview

- Founded in March 1999
  - Headquarters in Lisle, IL
  - Major sales Offices in Lisle, IL; Denver, CO; remote offices throughout the U.S.
  - Outsource manufacturing in Oklahoma City, OK

- Financial support
  - $10 million in individual and angel investors
  - $13 million venture round with Venrock, H&Q, and Chase Capital Partners
  - $9 million in lease & equipment financing w/ Comdisco

- 108 employees
  - CEO, CTO, and VP Eng. have over 45 years combined telecommunications & broadband data network experience
  - Over 80 engineers
    - Lucent, Bell Labs, Tellabs, 3Com, Westell, US Robotics, Motorola
    - Company average of ~15 years experience in cable, telecom, gigabit ATM, and router technologies
  - Innovative - 19 patents pending for technology developments
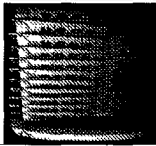
Corporate Leadership

Management Team

Venkata Majeti	CEO
Tom Cloonan	CTO
Dan Hickey	VP – Engineering
Gene Rosendale	VP – Marketing & Product Mgt
Kevin Johnson	Controller

Board of Directors

Venkata Majeti	President & CEO
Eric Copeland	General Partner, Venrock Assoc
Mark Rochkind	President, Exeter Lane Assoc.
Jay Vohra	President & CEO, Isourcing
Randy Lyon	Managing Director, J.P. Morgan
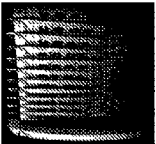
Corporate Leadership

Technical Advisory Board

Stephen Dukes (Chairman)	Former VP, Digital Technology, MediaOne, and TCI
David Bukovinsky	VP, Engineering, Wild Blue; CableLabs
Walter Ciciora	Former CTO, Time Warner Cable
Nick Hamilton-Piercy	VP, Engineering & Technology Rogers Cable
Steve Craddock	VP, Strategic Planning, Comcast

Market Analysis
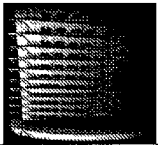
CMTS Market

- **Highly consolidated target market**
  - 100M Homes passed (HHP) in US
  - 250M HHP in ROW
  - Top 7 US MSOs cover 80% of HHP

- **First-Generation products have already**
  - Validated the technology
  - Validated DOCSIS standard
  - Validated the market

- **MSOs growing increasingly more sophisticated about their needs**

CMTS Market

CMTS market is growing rapidly

- ### Key trends in the MSO business
  - Differentiated services (e.g., guaranteed service levels) to segment data subscribers and create greater revenue
  - Cable telephony has proven market penetration and profitability
  - Move towards IP telephony to reduce costs, streamline ops, and offer killer apps

- ### New requirements from MSOs
  - Carrier-grade reliability, higher capacity and scalability, DOCSIS 1.1 QoS and security, and wire speed performance

- ### Significant market opportunity
  - Dataquest projects annual worldwide CMTS revenue of $2.5B in 2003, $6B cumulative
  - Cadant estimates long term TAM at $8-12B
  - Estimates of market size have increased over time

CMTS Competitors

- **Original, proprietary DoC pioneers**
  - Terayon, Com21, LanCity
  - Lost the war in Gen-1 DOCSIS against large entrants

- **Large First-Generation CMTS vendors**
  - Cisco, Arris, Motorola, 3Com
  - Cisco with leading market share in Gen-1 DOCSIS (70-75%)
  - All stumbling with Gen-2 developments

- **New Second-Generation market entrants**
  - **Cadant** --- Chassis-based DOCSIS 1.1 design; Carrier grade DNA; high density and scalability
  - **Broadband Access Systems/ADC** --- Time to market advantage; DOCSIS 1.0 design; doubtfully upgradeable to 1.1
  - **River Delta** --- Target design specifications similar to Cadant; strong router orientation; "pizza box" implementations at Interop; chassis-based in development

Marketing Strategy

CADANT®

INNOVATIONS IN BROADBAND

CADANT®

Marketing Strategy

- **Target the top 7 US MSOs, top 3 Canadian MSOs, and major U.S. Over builders**

- **Provide the strongest DOCSIS 1.1 CMTS offering to the market**
  - Launch product at Western Show
  - MSO trials beginning December 2000

- **Pursue strategic alliances for complete solution offerings in converged high-speed data and IP telephony**

- **Leverage trials and CableLabs for validation**

- **Establish PacketCable Customer Trials**

- **Follow quickly with EuroDOCSIS support**

- **Exploit platform for derivative products in other Broadband sectors, e.g., fixed wireless and DSL**

CADANT®

INNOVATIONS IN BROADBAND

River Delta

Cisco

COM21

Broadband
Access Systems

JPM-SO 001423

Cadant CMTS

CADANT®

INNOVATIONS IN BROADBAND

Western Cable Show Advertising & Promotion Plan – INNOVATIONS IN BROADBAND
Trade Journal Ads

CED	(Nov.issue)	Western Show preview issue
	(Dec.issue)	Western Show issue, includes bonus distribution at the show
Multichannel News	(Oct.30 issue)	
	(Nov.20 issue)	Western Show preview issue
	(Nov.27 issue)	Western Show issue, includes bonus distribution at the show
Cablevision	(Nov.27 issue)	Western Show issue, includes bonus distribution at the show
Cablevision	Cablevision Blue Book	Western Show daily supplement
Communications Technology	(Nov. issue)	Western Show preview issue
	(Dec. issue)	Western Show issue, includes bonus distribution at the show
CableWorld	(Nov.20 issue)	Western Show preview issue
	(Nov.27 issue)	Western Show issue, includes bonus distribution at the show
BROADCASTING CABLE	(Nov.27 issue)	Western Show issue, includes bonus distribution at the show
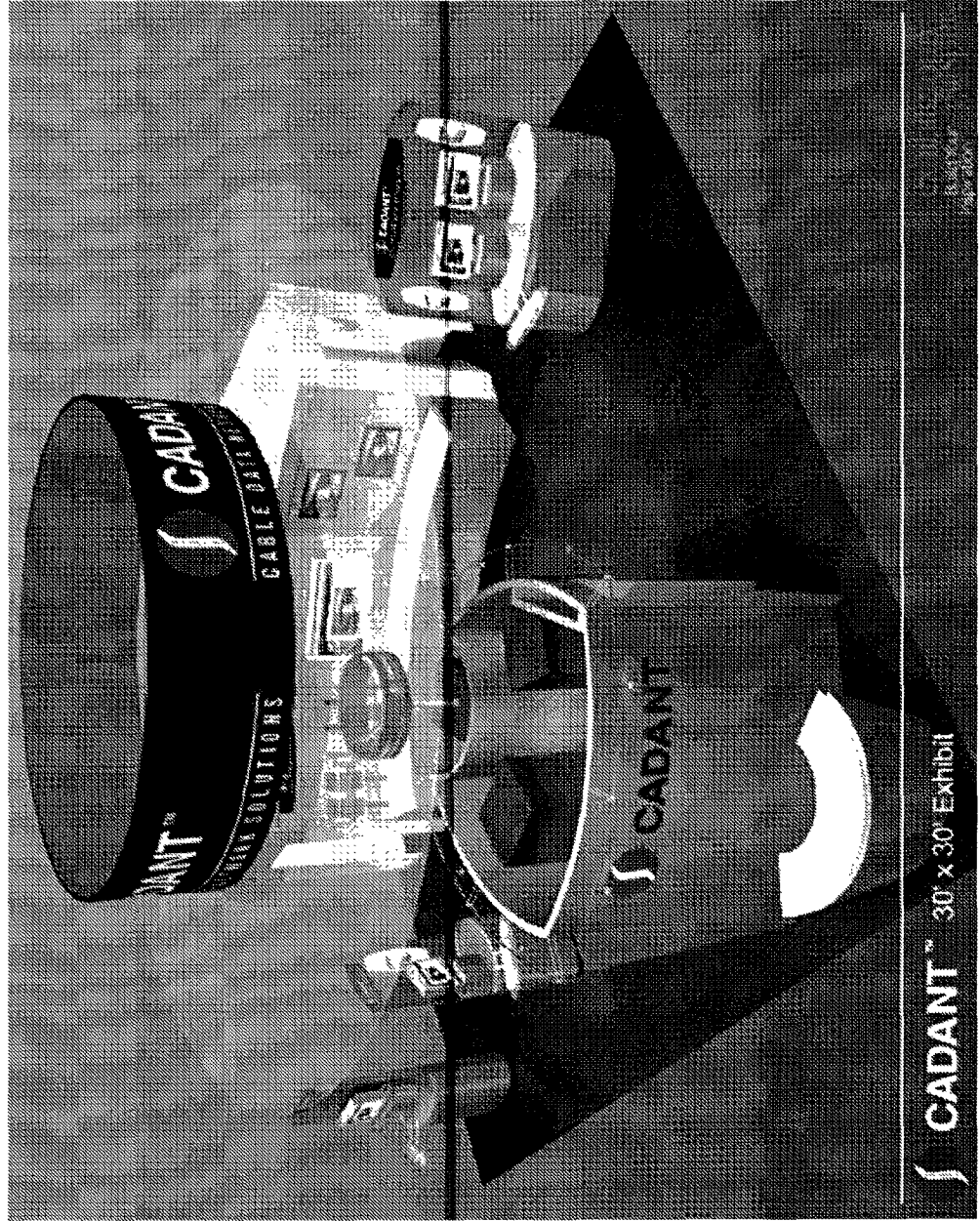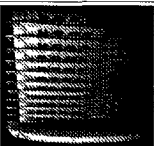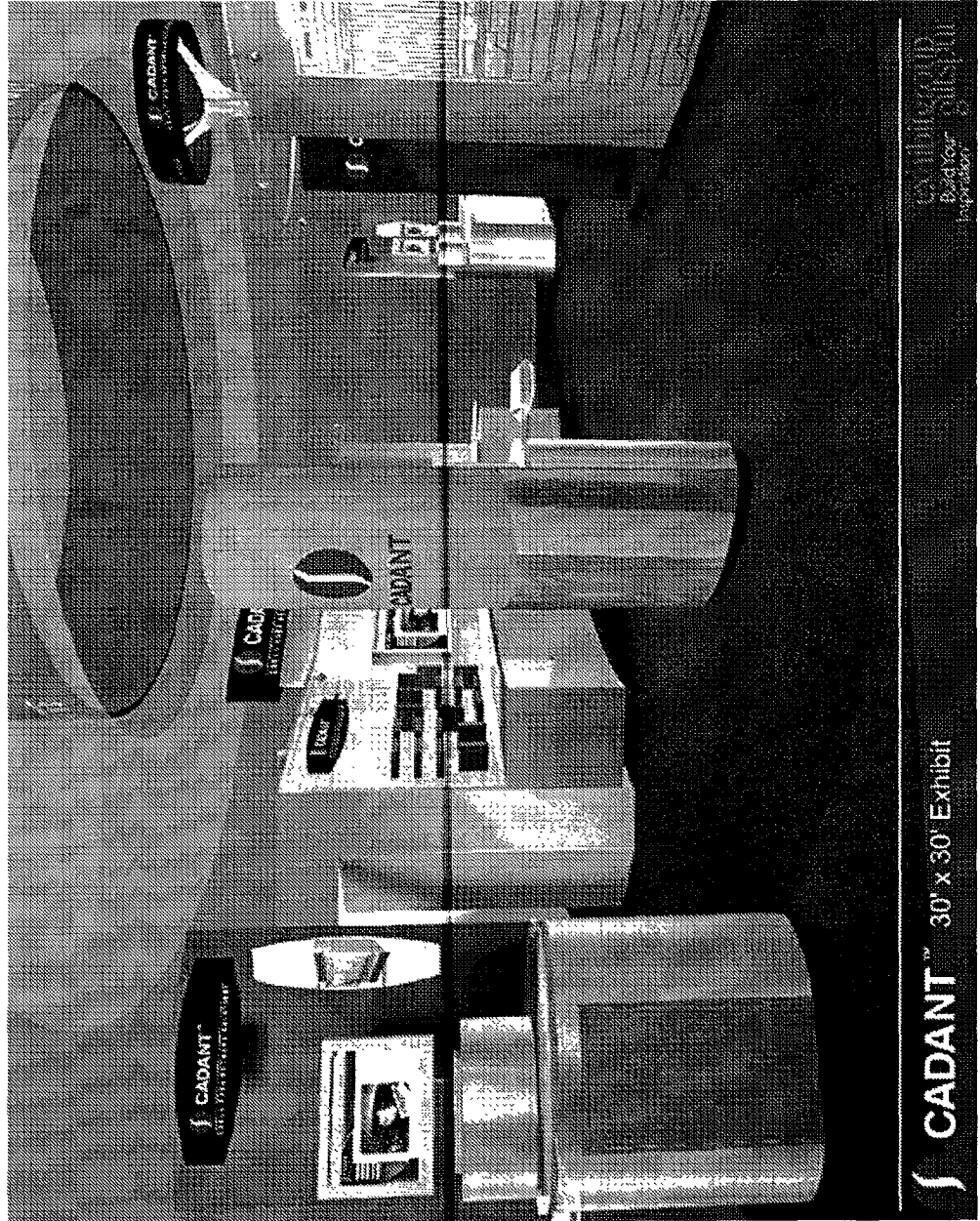
CADANT™ 30' x 30' Exhibit

CADANT®

INNOVATIONS IN BROADBAND

C4™ CMTS — RELIABILITY, PERFORMANCE, DOCSIS 1.1

HIGHEST DENSITY AND SCALABILITY

CARRIER - CLASS RELIABILITY

DOCSIS 1.1

UNPRECEDENTED DATA OBSERVABILITY

POWERFUL OPERATIONAL FEATURES

PARTITIONED SERVICES SUPPORT

WIRE-SPEED PERFORMANCE
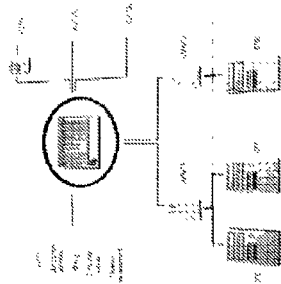
Typical placement of the Cadant C4 CMTS within the cable data network infrastructure

CARRIER CLASS RELIABILITY

Product Launch Schedule ◯ CADANT®

Engineering Testing

Alpha Testing
- Cadant lab testing
- Informal MSO lab evaluations

Beta Testing
- Field testing on MSO plant
- Formal test plan

Interop Testing

CableLabs Qualification Waves

@Home Lab Evaluation
- @Home Lab test & evaluation

@Home Field Testing
- "Level 2" status allows field trials & commercial @Home deployments

Customer Evaluations

In-House Lab Demo
- Demos for Industry Forums & Cadant visitors

MSO Lab Demos
- Demo Systems for use in MSO Labs for familiarity & testing

MSO Lab Trials
- Formal process;
- Learning & verifying stability & functions;
- Usually takes 2 weeks stable & functional to pass

MSO Field Trials
- Formal process;
- To proceed, 30 days stable & functional;
- @Home affiliates will require "Level 2" status

MSO Service Launches
- Revenue sales to Cadant

Partnership Programs

Cadant Partner

- Basic product interoperability

Technology Partner

- Basic product interoperability
- Technical alliance to further advance both Cadant's development and partner's development, e.g., Texas Instruments

Strategic Partner

- Basic product interoperability
- Includes strategic feature interoperability, e.g. PacketCable
- Includes joint marketing
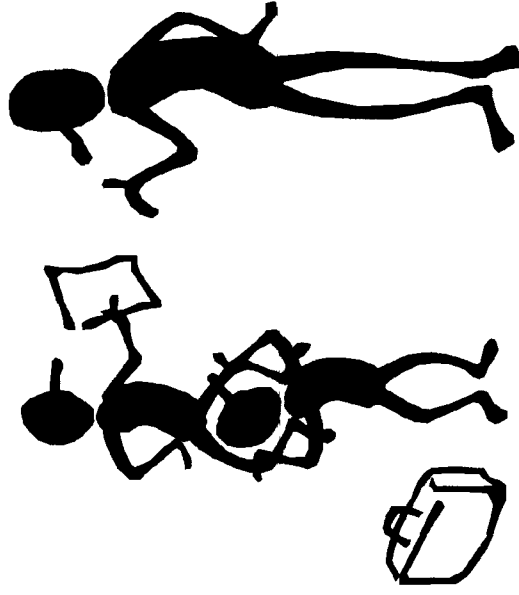- May include technology partnership
- May include strategic investment

Cable Modem Partners

- **In discussions with 10 Cable Modem vendors**

- **Expect 7 in Cadant booth at Western Show**

  - 3Com
  - Best Data
  - BroadCom*
  - Future Networks*
  - Texas Instruments*
  - Thomson*#
  - TurboNet

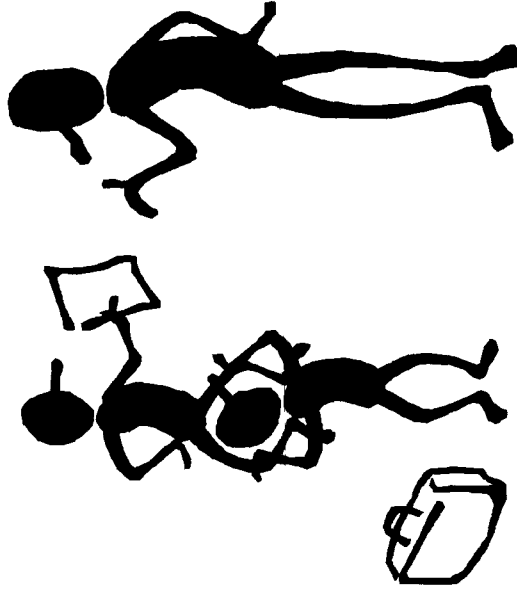* Technology partner
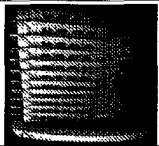# Moving toward strategic partner/investor

Operations System Partners

- **Have investigated 8 OS vendors**

- **Expect 2 in Cadant booth at Western Show**

  - **Core Networks***
    - Brings Cox deployment

  - **BroadJump**
    - Defacto CPE provisioning system
    - Brings 1M license contract with TW

* Technology partner

PacketCable Partners

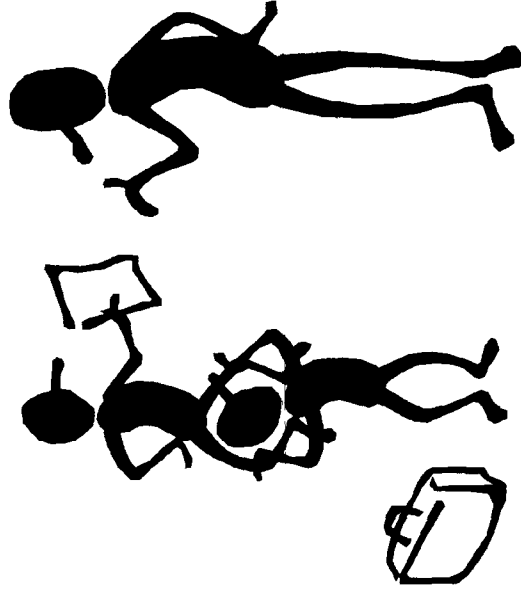- **Have investigated 8 vendors in the areas of**
  - Media gateway
  - Call Agents (both stand alone and IPDT)
  - SS7 Signaling Agents

- **Expect 2 in Cadant booth at Western Show for live PacketCable Demo**
  - Future Networks*
  - General Bandwidth**

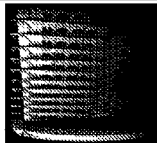* Technology partner
** Strategic partner

Technology and Products

CADANT®

INNOVATIONS IN BROADBAND
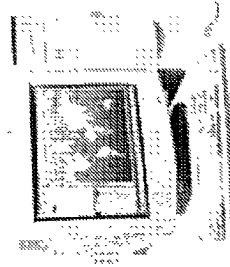
Product Overview

SCADANT®

Carrier-class, broadband cable network solutions

C4 EMS

C4 CMTS
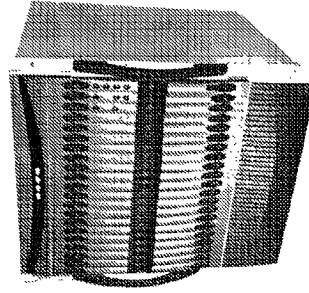
CADANT®

INNOVATIONS IN BROADBAND

Product Overview

Integrates seamlessly with headend and plant infrastructure
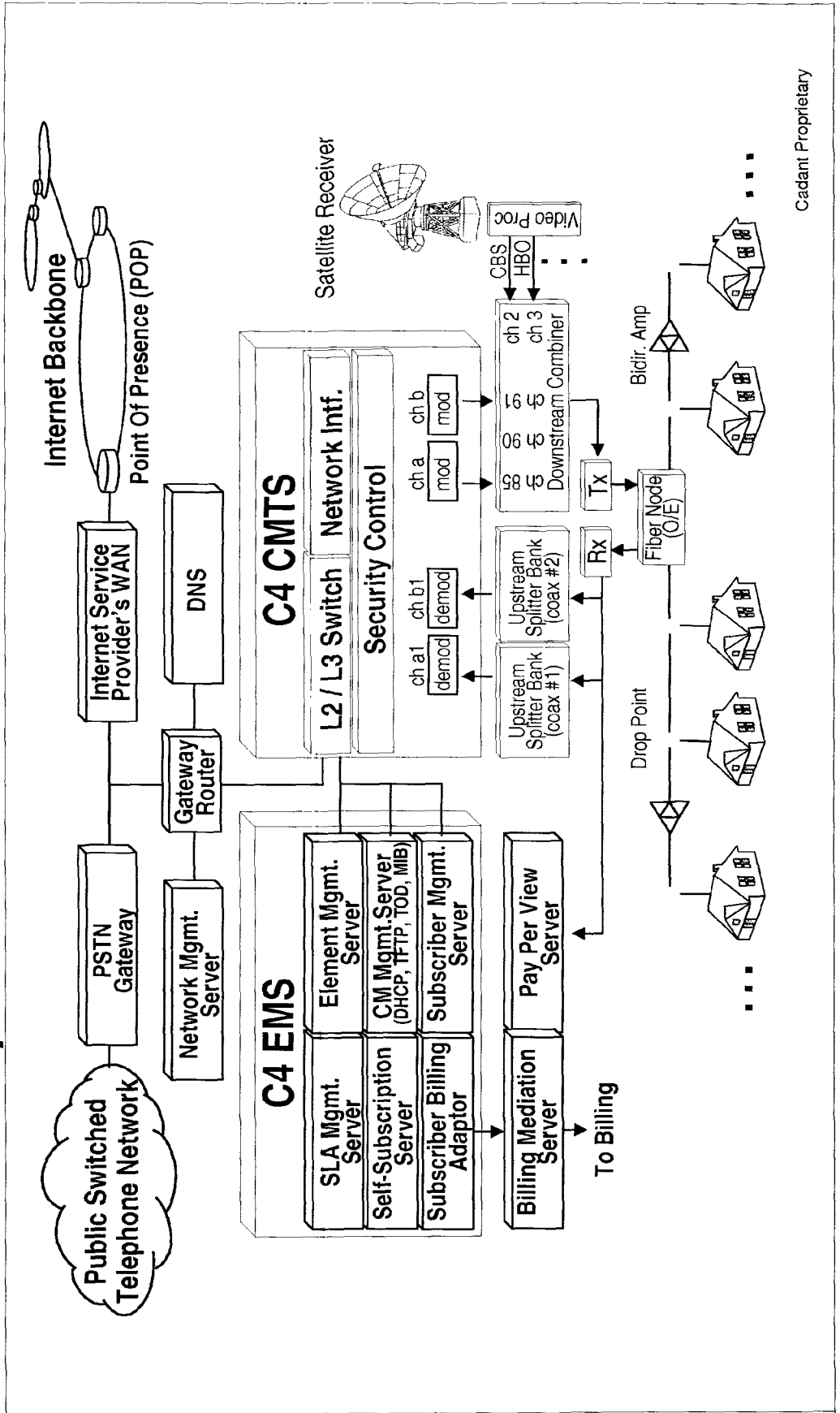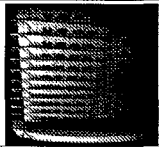
Internet Backbone

Point Of Presence (POP)

Satellite Receiver

Internet Service Provider's WAN

DNS

Video Proc

CBS
HBO

C4 CMTS

Network Intf.

Security Control

L2 / L3 Switch

ch a ch b

mod   mod

ch 90 ch 91
ch 85

Downstream Combiner

ch b1   ch a1

demod   demod

Upstream Splitter Bank (coax #2)

Upstream Splitter Bank (coax #1)

Tx

Rx

Fiber Node (O/E)

Bidir. Amp

Drop Point

Gateway Router

PSTN Gateway

Network Mgmt. Server

Public Switched Telephone Network

C4 EMS

Element Mgmt. Server

CM Mgmt. Server (DHCP, TFTP, TOD, MIB)

Subscriber Mgmt. Server

SLA Mgmt. Server

Self-Subscription Server

Subscriber Billing Adaptor

Pay Per View Server

Billing Mediation Server

To Billing

Cadant Proprietary

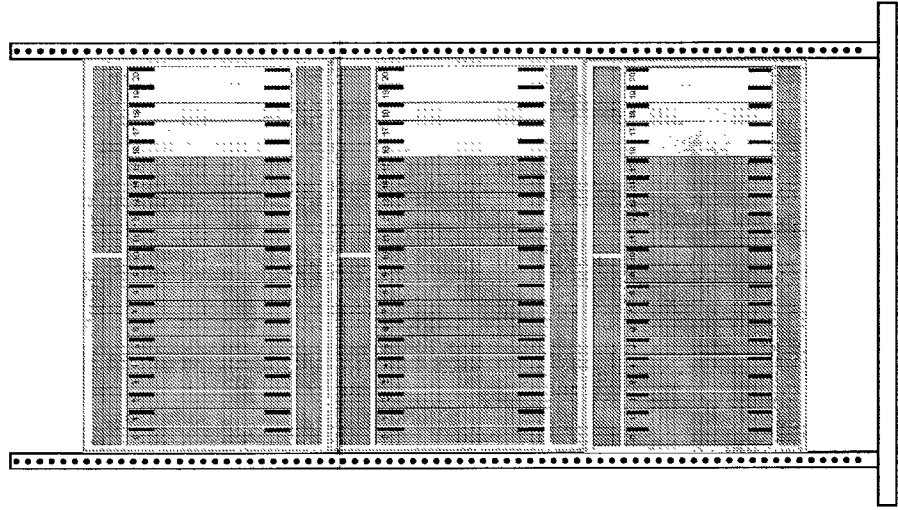JPM-SO 001440

C4™ CMTS Key Features

- High Density & Flexible Scalability

- Carrier-Class Availability

- Wire-Speed QoS and Observability

- Carrier-Class Operational Capabilities

- Flexible Architecture

CADANT ®

INNOVATIONS IN BROADBAND

High Density

Supports subscriber growth with the highest density and scalability offered in the Industry

- Maximum Density
  - Up to 32 downstream and 128 upstream channels per chassis
  - Three chassis per standard 7ft. high, 19" wide rack
  - Total of up to 96 downstream and 384 upstream channels per rack

- Reduces Headend Maintenance Complexity
  - Reduces inter-shelf cabling
  - Promotes lower installation, operational, and ongoing maintenance costs

C4™ CMTS Key Features

CADANT®

INNOVATIONS IN BROADBAND

- High Density & Flexible Scalability
- **Carrier-Class Availability**
- Wire-Speed QoS and Observability
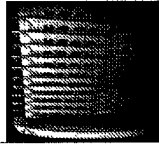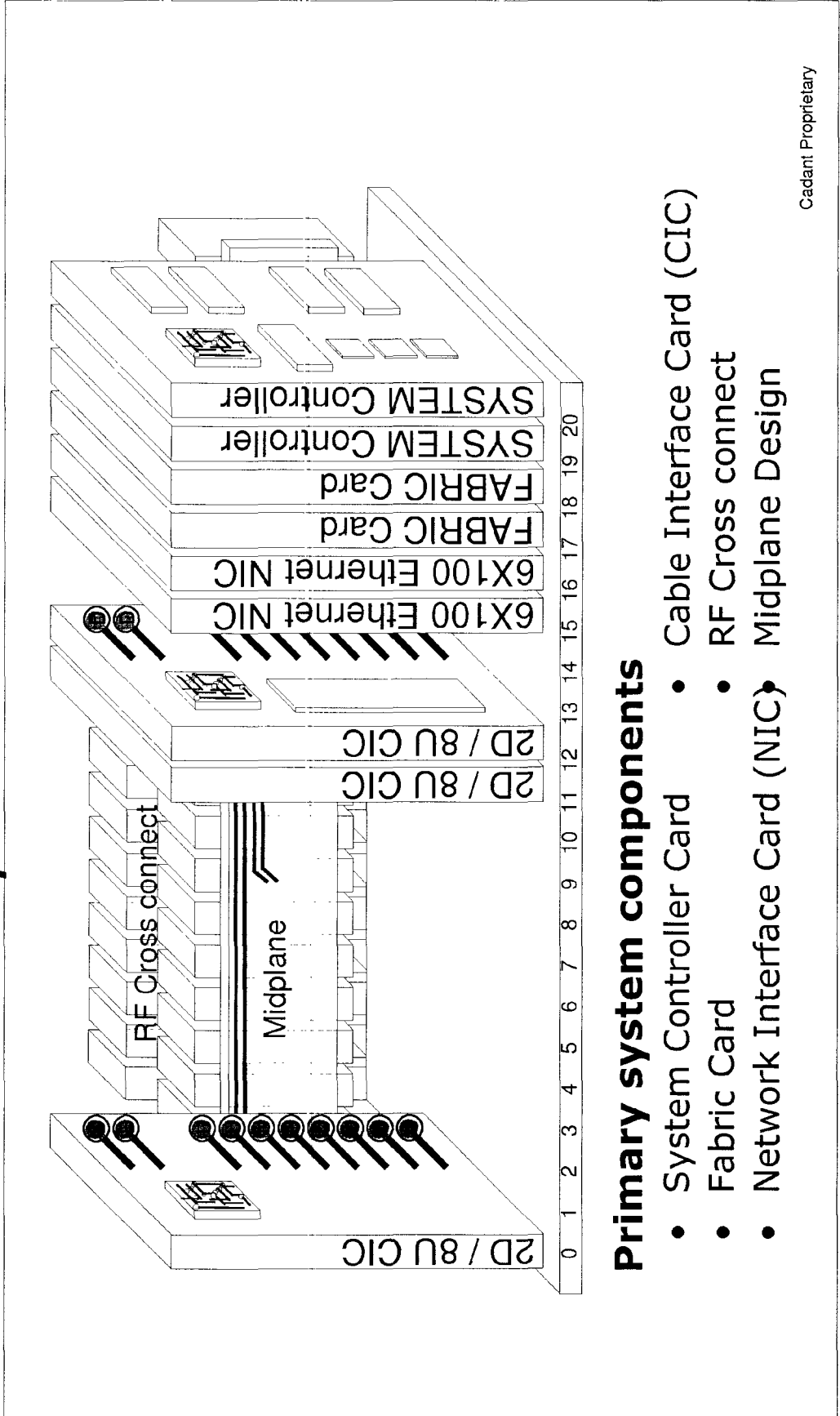- Carrier-Class Operational Capabilities
- Flexible Architecture

Carrier-Class Availability ⬤ CADANT ®

Uniquely designed to sustain any system component failure without interruption of service

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |

2D / 8U CIC

2D / 8U CIC

2D / 8U CIC

6X100 Ethernet NIC

6X100 Ethernet NIC

FABRIC Card

FABRIC Card

SYSTEM Controller

SYSTEM Controller

RF Cross connect

Midplane

Primary system components
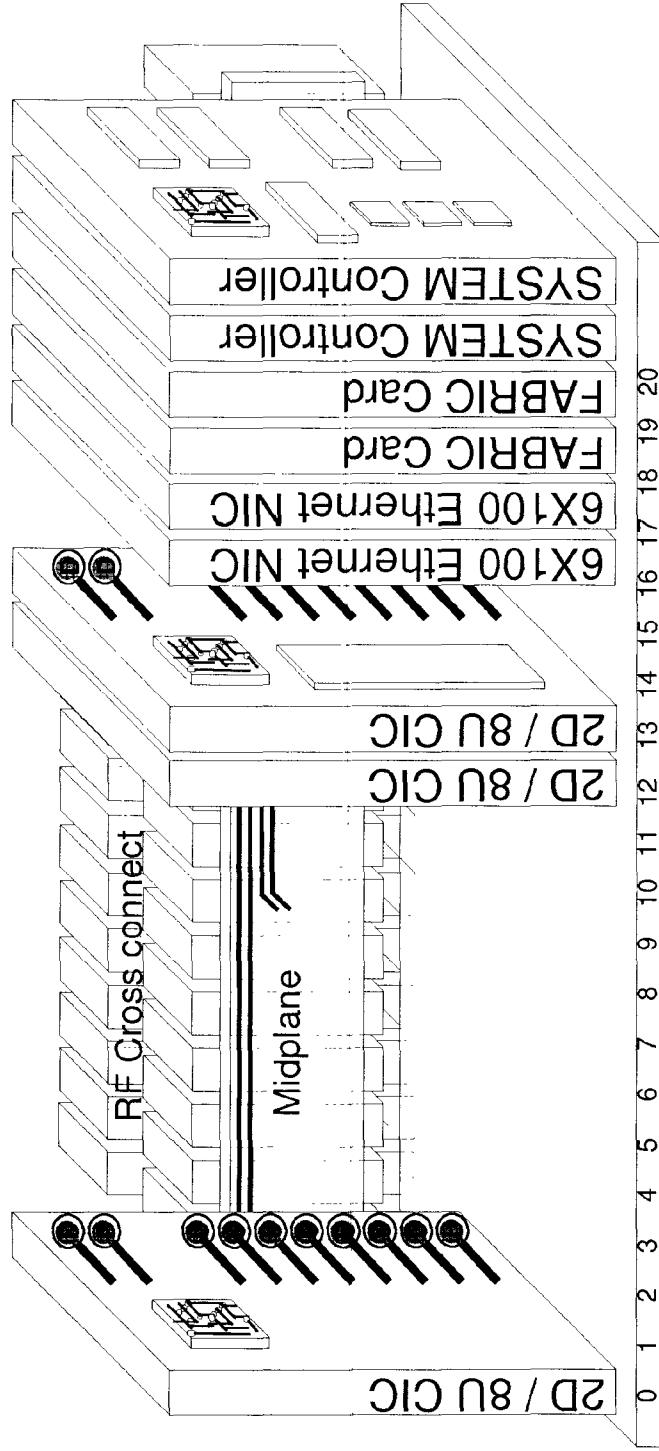
- System Controller Card
- Fabric Card
- Network Interface Card (NIC)
- Cable Interface Card (CIC)
- RF Cross connect
- Midplane Design

JPM-SO 001444

Carrier-Class Availability

INNOVATIONS IN BROADBAND

Uniquely designed to sustain any system component failure without interruption of service

SYSTEM Controller
SYSTEM Controller
FABRIC Card
FABRIC Card
6X100 Ethernet NIC
6X100 Ethernet NIC
2D / 8U CIC
2D / 8U CIC
2D / 8U CIC

RF Cross connect

Midplane

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
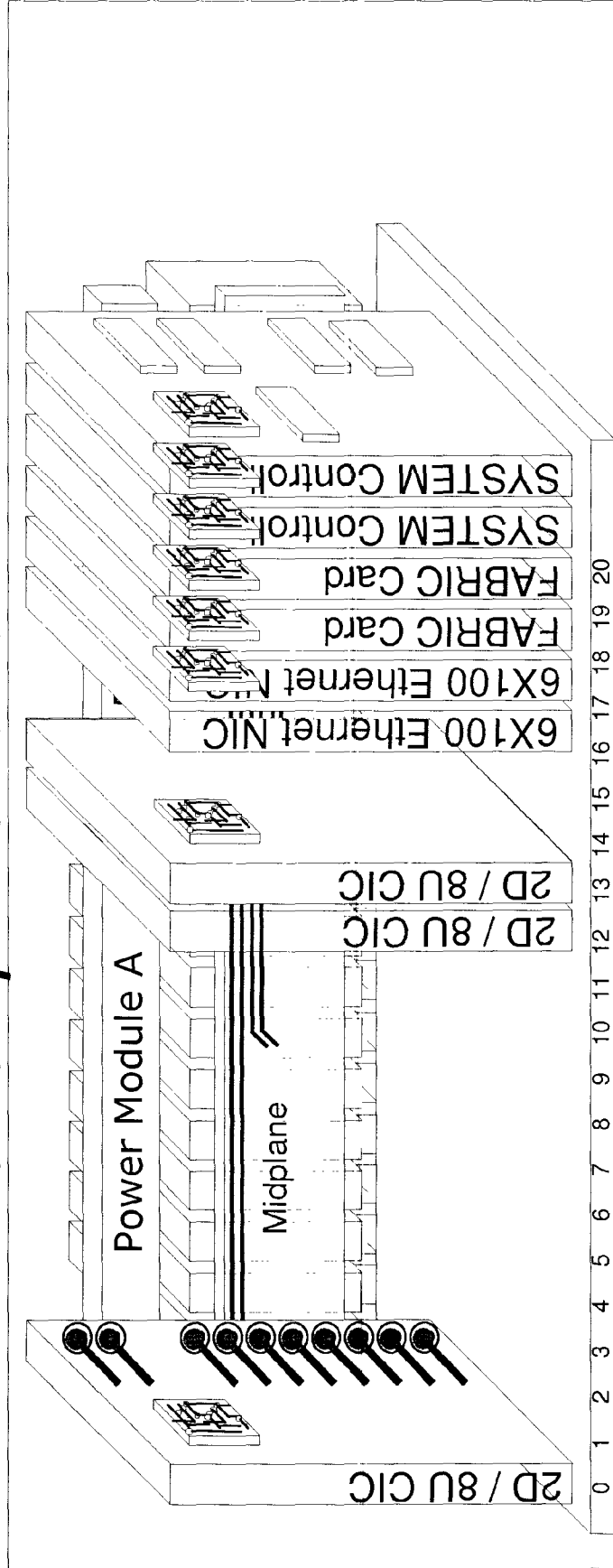
No single point of failure

- Duplex control complex – System Controller and Fabric cards
- Configurable sparing 1+1 or N+1 on NIC and CIC cards
- RF Interface modules can be switched without dropping cable modems

Carrier-Class Availability

CADANT ®

Uniquely designed to sustain any system component failure without interruption of service

Power Module A

Midplane

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

2D / 8U CIC

2D / 8U CIC

2D / 8U CIC

6X100 Ethernet, NIC

6X100 Ethernet, NIC

FABRIC Card

FABRIC Card

SYSTEM Control

SYSTEM Control

Fault Recovery

- Recovery initiated after >= two of four controlling processors concur
- Recovery actions taken on a per-board level
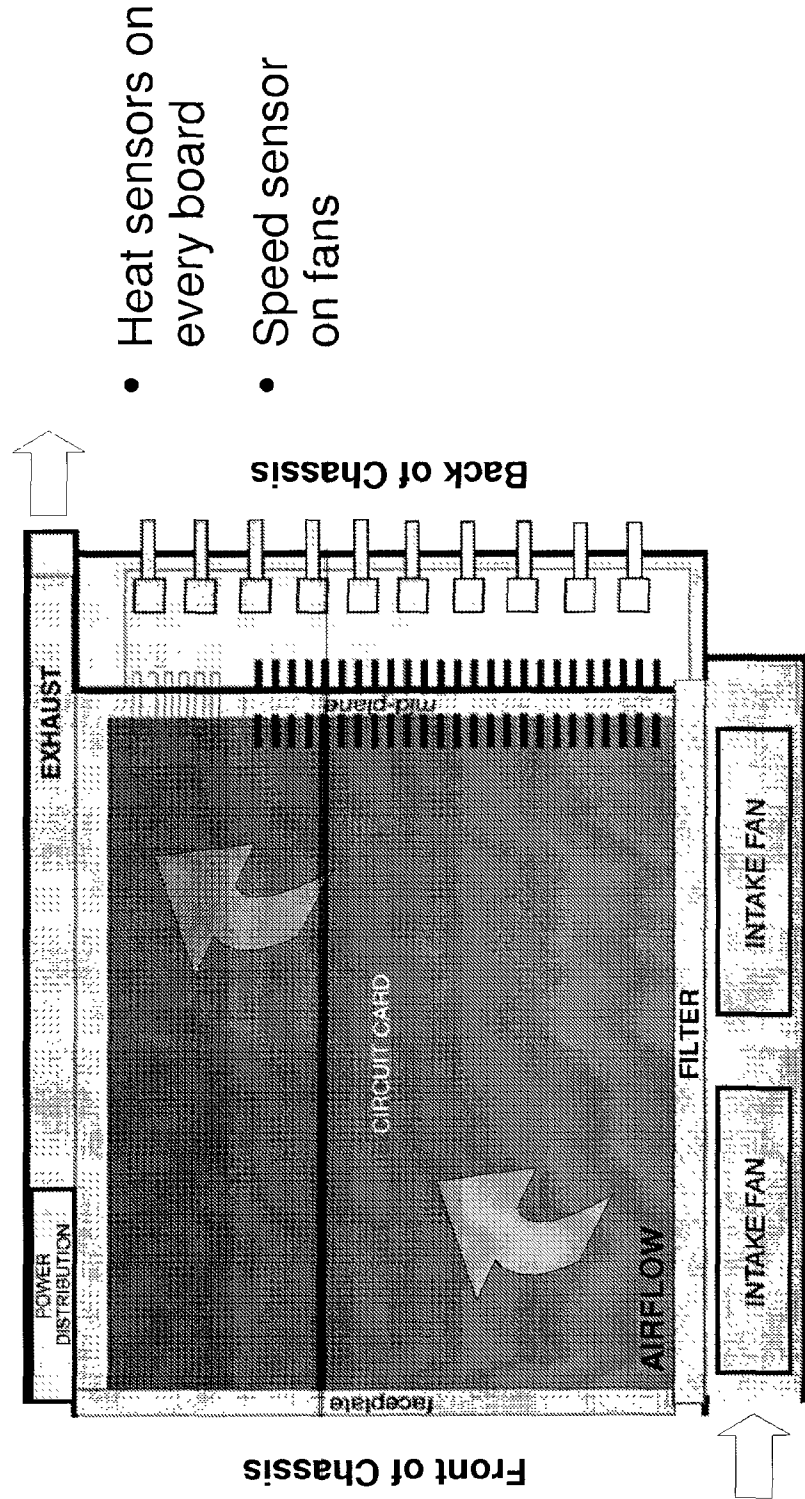- Faulty board can be completely isolated including removal of power

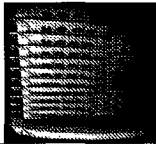# Carrier Class Availability 🔵 CADANT®

Airflow design improves reliability by ensuring proper cooling of "hot" RF components

- Heat sensors on every board
- Speed sensor on fans

Back of Chassis

EXHAUST

POWER DISTRIBUTION

mid-plane

CIRCUIT CARD

receplate

FILTER

INTAKE FAN

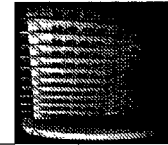INTAKE FAN

AIRFLOW

Front of Chassis

C4™ CMTS Key Features

CADANT®

INNOVATIONS IN BROADBAND

- High Density & Flexible Scalability
- Carrier-Class Availability
- **Wire-Speed QoS and Observability**
- Carrier-Class Operational Capabilities
- Flexible Architecture

Wire-Speed QoS and Observability

Hardware-based implementation

- **Wire-Speed Defined**
  - The execution of all packet-level processing in less time than the shortest possible inter-packet arrival time; even when the system is 100% loaded with sustained 64-byte packets

- **Unprecedented wire-speed capabilities**
  - DOCSIS 1.1 Quality-of-Service elements (required or optional)
  - Beyond DOCSIS - All counts for billing, performance monitoring, trouble shooting, traffic engineering

- **Unprecedented usage of system traffic data**

Wire-Speed QoS and Observability

S CADANT®

## *Enable new subscriber services and enhance revenue opportunities*

- Full DOCSIS 1.1 Compliance – Required and Optional

  - Multiple upstream service types
    (i.e., UGS, UGS/AD, rtPS, nrtPS, BE)

  - Downstream packet classifiers

  - Payload header suppression (PHS)

  - Upstream packet fragmentation

  - Upstream packet concatenation

  - Differentiated service class support

  - Service flow policing

  - Security enhancements (BPI+)

  - Advanced MIB support

Wire-Speed QoS and Observability

Wire-speed, content-aware packet processing guarantees delivery of differentiated services

**Subscriber side**

- Per-flow traffic shaping

Fabric
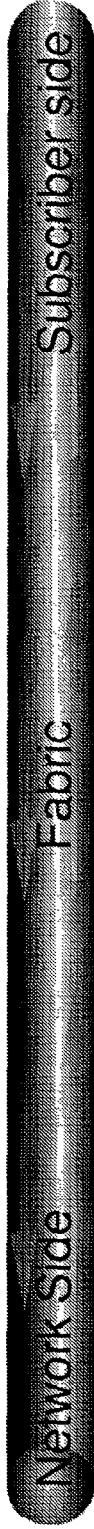
- Flow-based classification
- Packet prioritization (based on Layer 2, 3, and 4 information)
- Extensive Layer 2, 3, & 4 filtering
- Per-flow policing
- Hard-limiting and soft-limiting flow control
- WRED congestion control based on flow priority and flow activity
- Fine-grain activity sensitive congestion control - over 70 tunable parameters
- Priority-based queuing – 384 queues
- Priority-based scheduling (combining both Strict Priority and Self Adjusting WRR)

Network Side

- Diff-Serv
- MPLS
- RSVP+

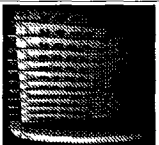# Wire-Speed Observability ◉ CADANT®

INNOVATIONS IN BROADBAND

Complete insight into every packet enhances revenue opportunities and guarantees SLAs

Wire-Speed
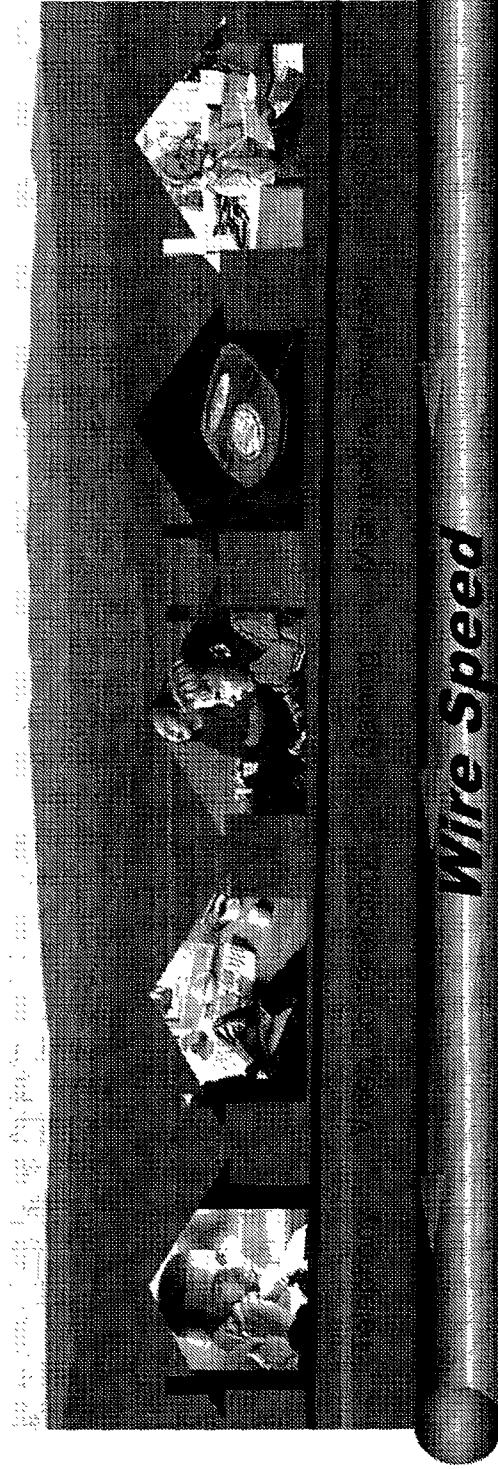
- **Advanced billing opportunities**
- **Multiple ISP management**
- **Multiple CPE management**
- **Enable marketing initiatives**

- Capacity planning
- Traffic engineering
- Performance monitoring
- Customer service

C4™ CMTS Key Features

- High Density & Flexible Scalability

- Carrier-Class Availability

- Wire-Speed QoS and Observability

- **Carrier-Class Operational Capabilities**

- Flexible Architecture

Carrier-Class
Operational Features

Historical information combined with powerful troubleshooting applications pinpoint failures

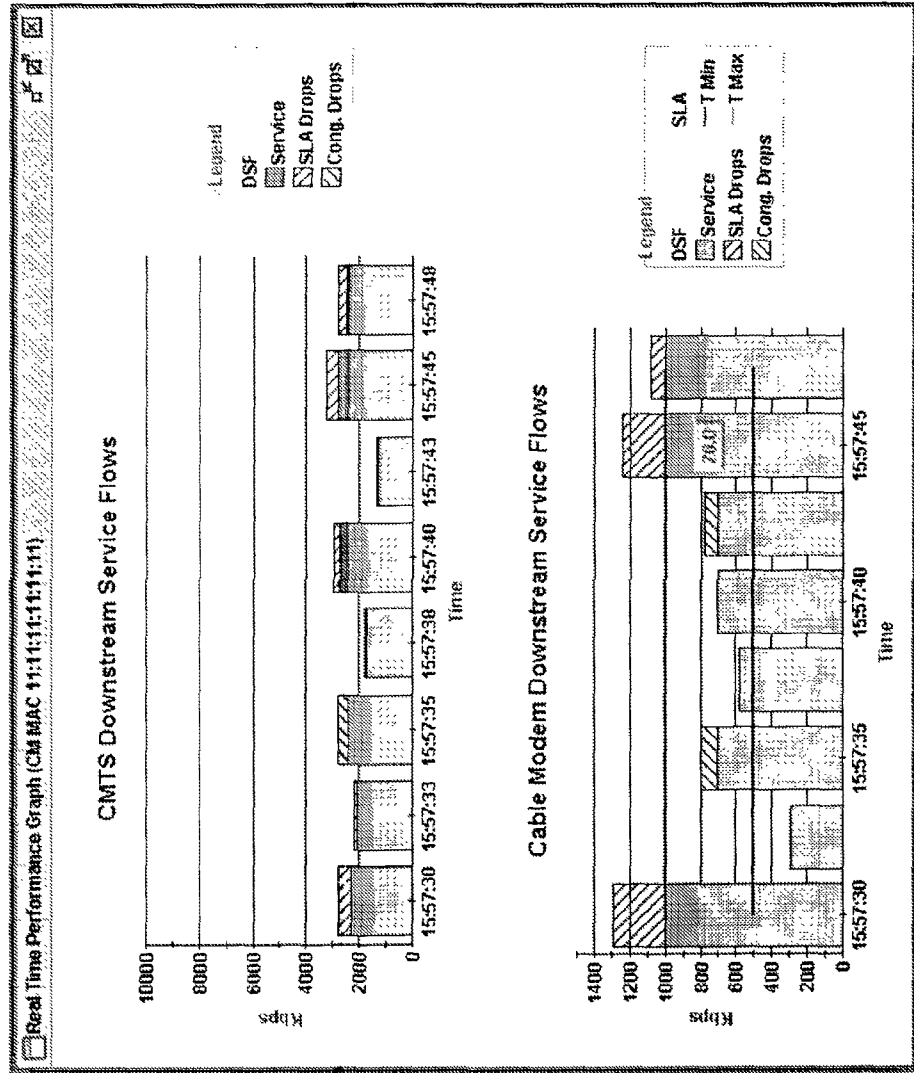- ## Advanced maintenance GUI
  - Alarm / error condition notification
  - Supports multiple CMTSs
  - MIBS browser

- ## Pinpoints intermittent plant faults using HFC plant view

- ## MSOs can precisely direct truck rolls to faulty locations

Carrier-Class
Operational Features

Fine-grained counts collected at wire speed provide outstanding performance monitoring capabilities

Carrier-Class
Operational Features

CADANT® — INNOVATIONS IN BROADBAND

Account:345-992

Subscriber Usage Level

Kbps: 900 800 700 600 500 400 300 200 100 0
Time: 3:00 3:30 4:00 4:30 5:00 5:30 6:00

Bill Smith
Account #: 345-992
Device ID #:
Modem: 452987309182
PC 1: 878865432212

Service Level:
■ Throttle Data
☐ TMAX

1. Customer calls in about slow service at 5:45 PM on Monday.
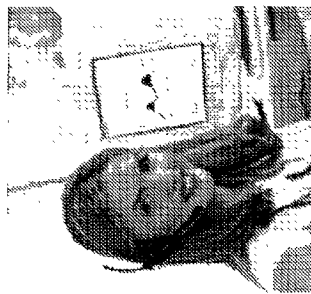
2. MSO customer service representative immediately has access to customer specific data.
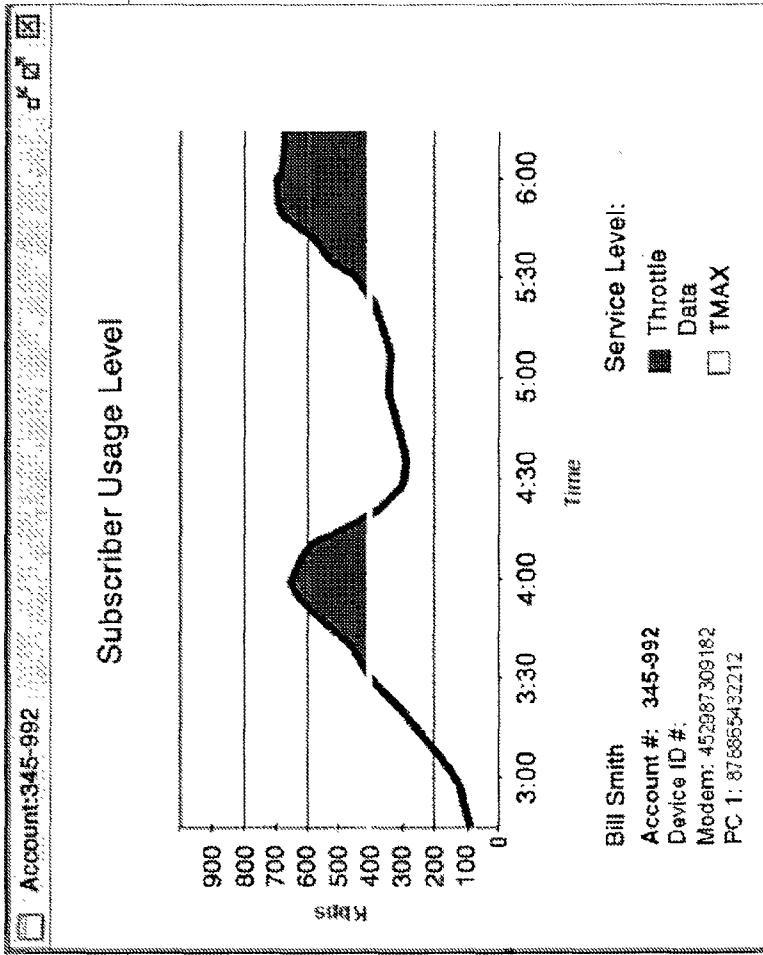
3. Based on subscriber usage information, the CSR tells the customer that their actual data usage exceeded their service level. In order to get more bandwith they need to upgrade service levels.

C4™ CMTS Key Features

- High Density & Flexible Scalability

- Carrier-Class Availability

- Wire-Speed QoS and Observability

- Carrier-Class Operational Capabilities

- **Flexible Architecture**

Flexible Architecture

S CADANT ®

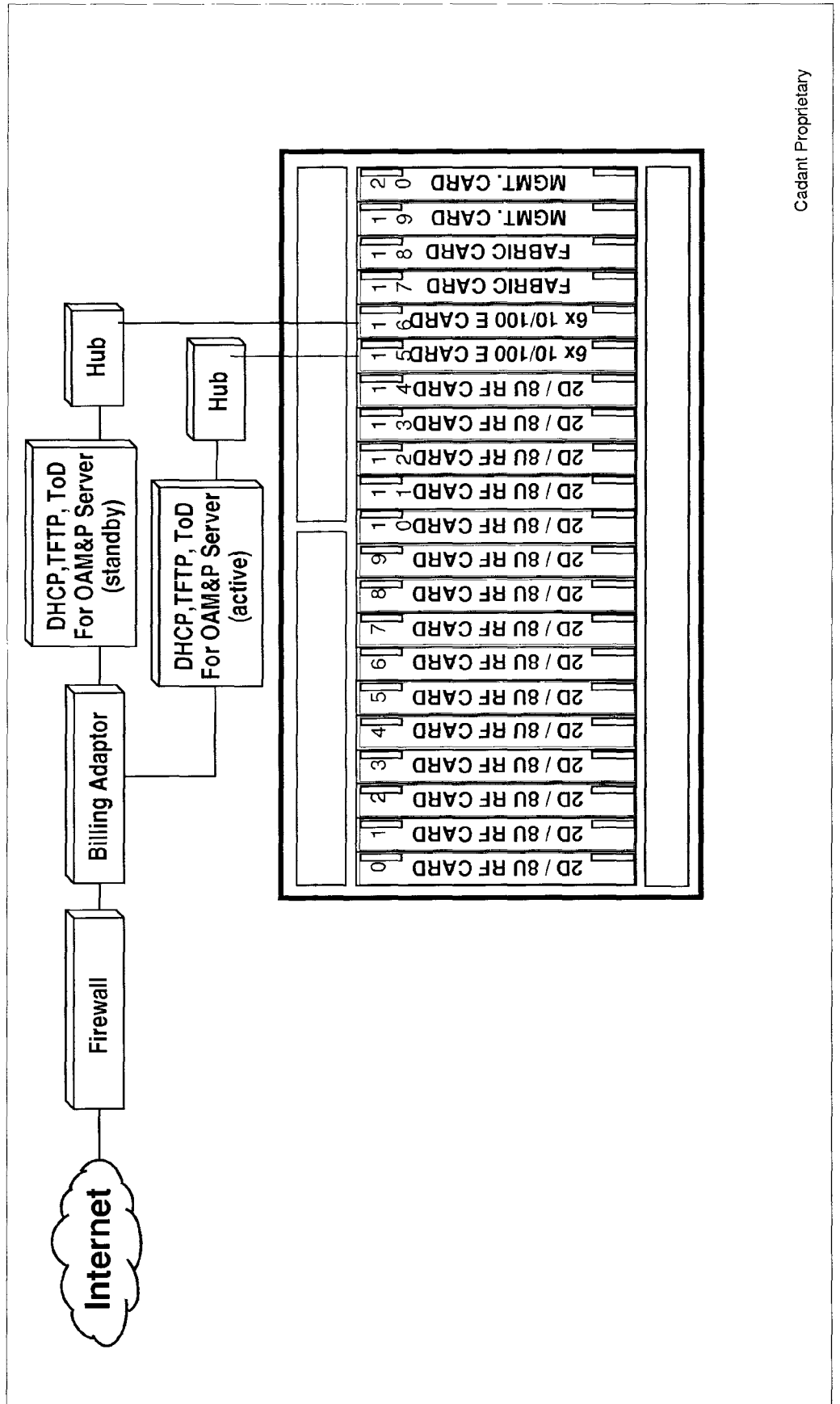## *Designed to easily integrate external functionality*

- FPGA logic and software is field upgradeable

- Architected to support a wide variety of future applications

- Integration of external servers and routers

Flexible Architecture

INNOVATIONS IN BROADBAND

Designed to easily integrate external functionality

Internet

Firewall

Billing Adaptor

DHCP, TFTP, ToD
For OAM&P Server
(standby)

DHCP, TFTP, ToD
For OAM&P Server
(active)

Hub

Hub

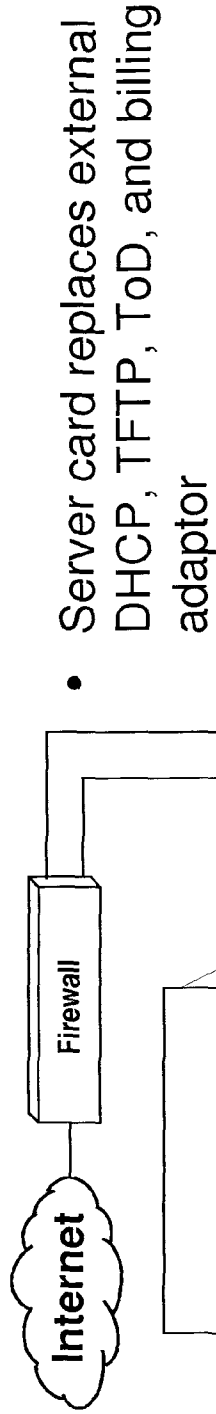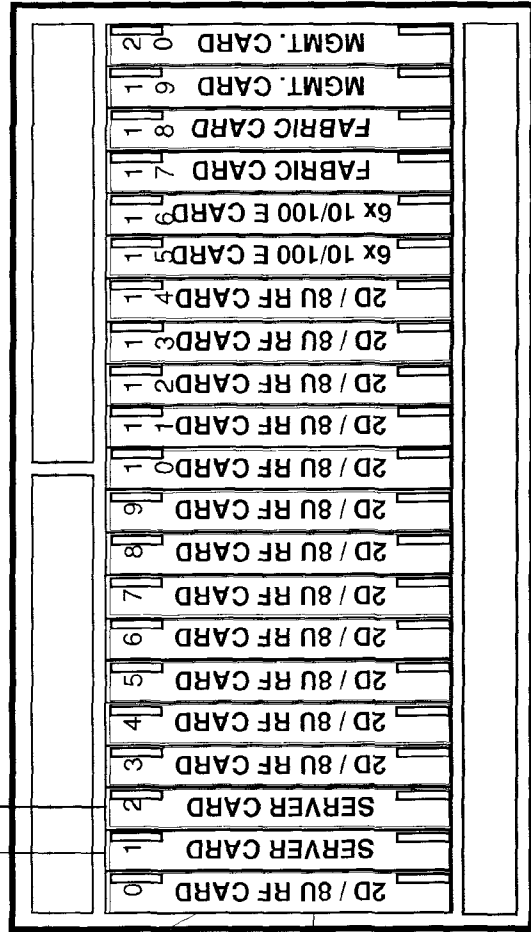| Slot	Card
0	2D / 8U RF CARD
1	2D / 8U RF CARD
2	2D / 8U RF CARD
3	2D / 8U RF CARD
4	2D / 8U RF CARD
5	2D / 8U RF CARD
6	2D / 8U RF CARD
7	2D / 8U RF CARD
8	2D / 8U RF CARD
9	2D / 8U RF CARD
1 0	2D / 8U RF CARD
1 1	2D / 8U RF CARD
1 2	2D / 8U RF CARD
1 3	2D / 8U RF CARD
1 4	2D / 8U RF CARD
1 5	6x 10/100 E CARD
1 6	6x 10/100 E CARD
1 7	FABRIC CARD
1 8	FABRIC CARD
1 9	MGMT. CARD
2 0	MGMT. CARD

Flexible Architecture
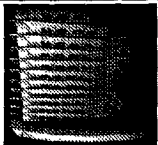
Designed to easily integrate external functionality

- Server card replaces external DHCP, TFTP, ToD, and billing adaptor

CADANT

INNOVATIONS IN BROADBAND

Internet — Firewall

Server Card
- RS232 Intf
- ENET Intf
- SANDM
- Maint Proc
- Update to other S

Slot labels: 0 2D / 8U RF CARD, 1 SERVER CARD, 2 SERVER CARD, 3 2D / 8U RF CARD, 4 2D / 8U RF CARD, 5 2D / 8U RF CARD, 6 2D / 8U RF CARD, 7 2D / 8U RF CARD, 8 2D / 8U RF CARD, 9 2D / 8U RF CARD, 10 2D / 8U RF CARD, 11 2D / 8U RF CARD, 12 2D / 8U RF CARD, 13 2D / 8U RF CARD, 14 2D / 8U RF CARD, 15 6x 10/100 E CARD, 16 6x 10/100 E CARD, 17 FABRIC CARD, 18 FABRIC CARD, 19 MGMT. CARD, 20 MGMT. CARD
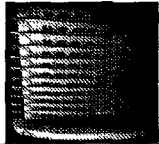
C4™ CMTS Summary

CADANT®

INNOVATIONS IN BROADBAND

- Scalability
  - 32 Downstream Channels
  - 128 Upstream Channels
  - 128,000 maximum subscribers*
- Density
  - 21 Slot Chassis
  - 3 Chassis per 7 foot rack
- Carrier Class
- Flexibility
  - 1D/4U, 1D/8U, 2D/2U, 2D/6U, 2D/8U
  - Multiple network interface cards
- HW based wire speed processing
- Quality of Service (QoS)
  - Per flow classification / queuing (384 queues)
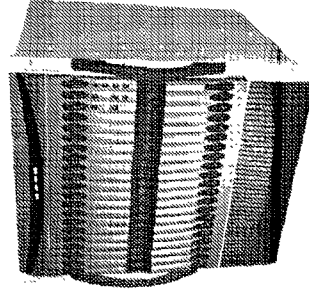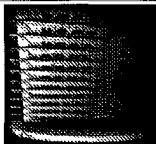 - Beyond DOCSIS 1.1

* 4,000 subs per downstream

C4™ CMTS Summary

- Standards
  - DOCSIS 1.1
  - PacketCable
- Open Access
  - Unlimited ISPs
- Security
  - VLAN
  - Anti-Spoofing
  - ARP flood protection
- Redundancy
  - Redundant across all elements
  - Hot swappable
- Switching Bandwidth
  - 5X DOCSIS requirements
  - 6.4 Gbps

C4 CMTS

Operations
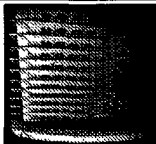
Manufacturing

Partnership with Hitachi as contract manufacturer

- **Hitachi handles:**
  - Parts procurement
  - Verification
  - Manufacturing
  - Shipment
  - Warranty servicing

- **Cadant provides design release package with requisite information for final production**

- **Straightforward, minimal cost separation arrangement**

CADANT®

Manufacturing

Hitachi manufacturing capabilities available to Cadant

- **160,000 sq ft facility for warehousing, production, testing, shipping, and support**

- **4 SMT lines** (3 production and 1 prototype)
  - Fine pitch component capabilities to 0.3mm
  - BGA capability (600 pin)
  - no-clean capability

- **Multiple product test capabilities**
  - In Circuit Testing (ICT)
  - Highly Accelerated Life Test (HALT)
  - Application test capabilities.

Supply Chain Management

Component supplier quality is critical to product quality assurance

- **Hitachi and component suppliers involved in**
  - Initial design and prototype
  - Parts selection
  - Performance
  - Design for manufacture
  - Cost reduction programs

- **Parts management/availability handled by Hitachi and component supplier**
  - Special consideration to long lead parts

Engineering Lab Tour

CADANT®

INNOVATIONS IN BROADBAND

Financials

® CADANT
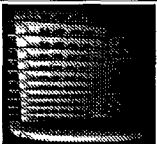
INNOVATIONS IN BROADBAND

Projected DOCSIS CMTS Revenue

DOCSIS CMTS Projected Cumulative Revenue

($ in millions)

$6,000
$5,000
$4,000
$3,000
$2,000
$1,000
$-

2000 2001 2002 2003

Dataquest ■ Cadant ■ Kinetics
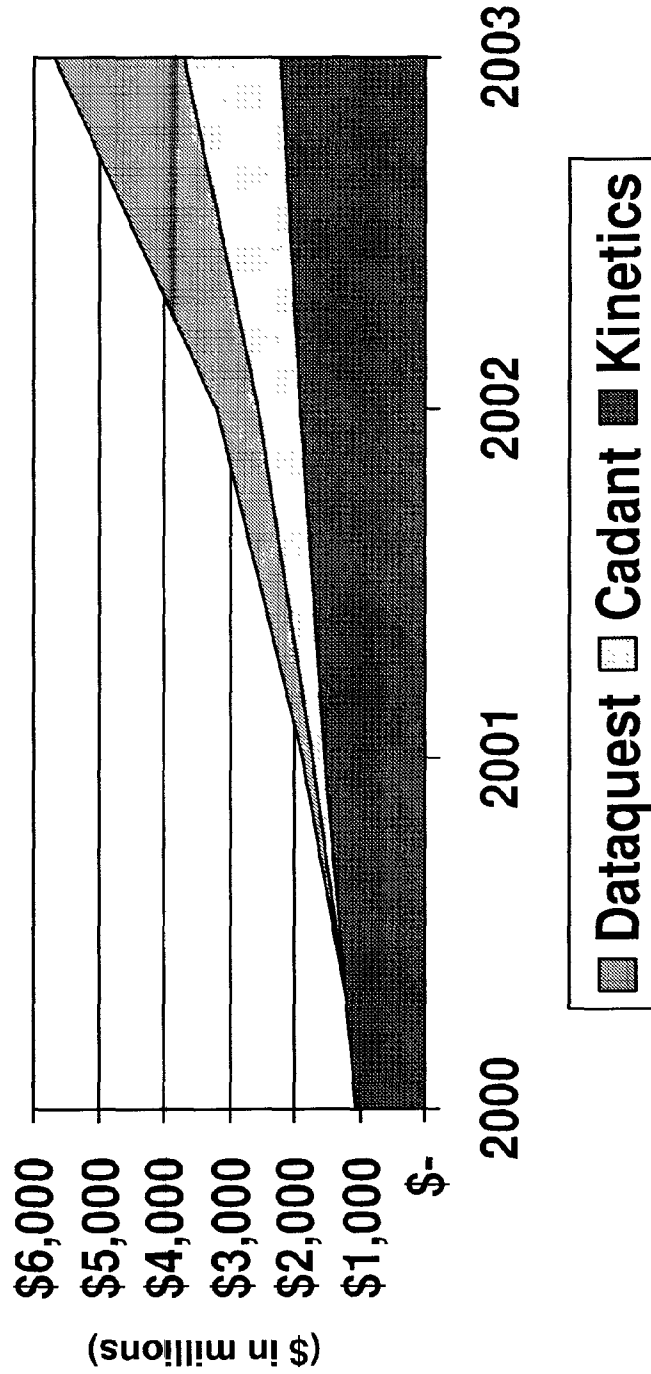
Projected Cadant Revenue

Cadant Stand Alone

($ in millions)

Year	Cadant	Remaining CMTS Market
2001	$43	$742
2002	$162	$670
2003	$345	$815

■ Cadant □ Remaining CMTS Market
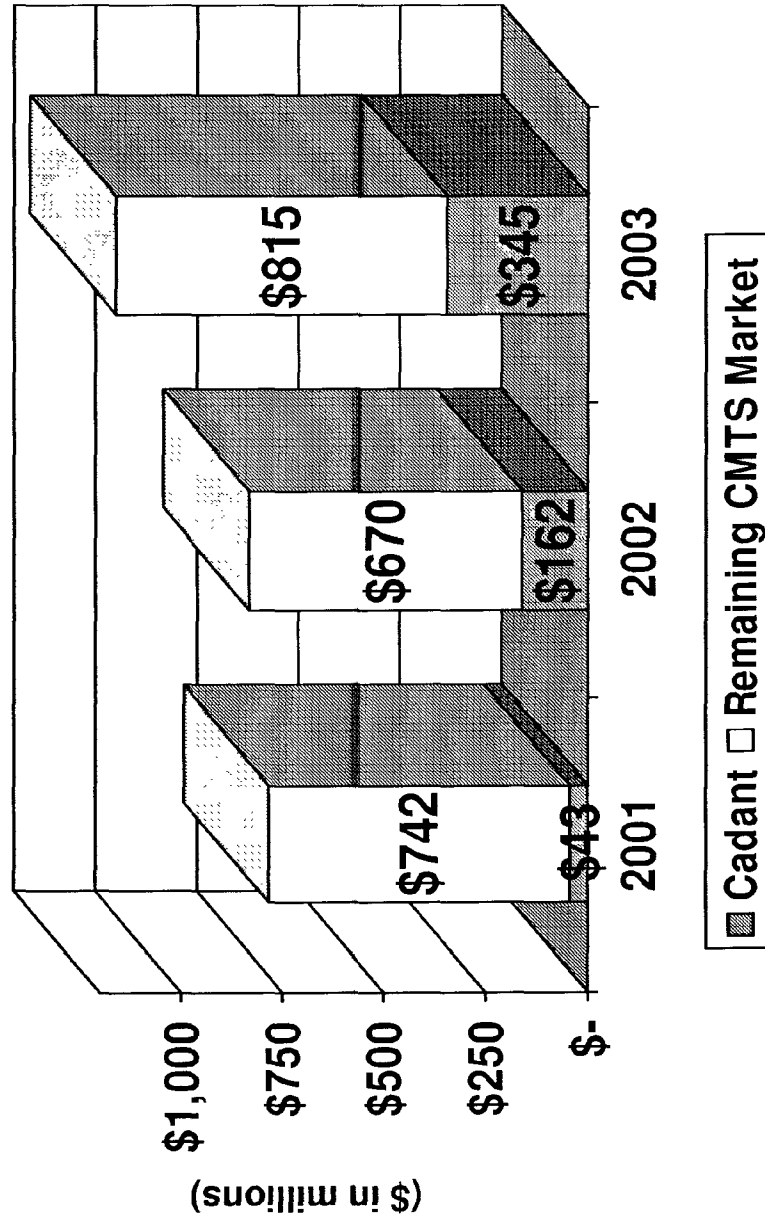
Based on Kinetics Research for CMTS Market Share
2001 5% Market Share
2002 20% Market Share
2003 30% Market Share
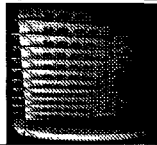
Summary

- **85 highest caliber engineers recruited locally from Lucent, Motorola, 3Com, Tellabs**

- **Sales and marketing leadership with CMTS market experience**

- **True carrier grade product enables entry into the lucrative telephony market space**

- **On path to become _the_ leading CMTS vendor throughout Gen-2 lifecycle**
  - Competitively positioned versus BAS and RiverDelta particularly before they get traction
  - Scalability attractive to all MSOs as their penetration increases
  - Carrier grade product attractive to all MSOs as they eye PacketCable
  - Enhanced observability data enables new revenue opportunities

- **Longer term goal is Gen-3 market**

- **Cadant seeks business relationships that offer complimentary strengths**

Corporate Leadership

Management Team

CEO	Venkata Majeti	630-799-1250	venkata@cadant.com
CTO	Tom Cloonan	630-799-1286	tom@cadant.com
Controller	Kevin Johnson	630-955-9840	kjohnson@cadant.com
VP – Engineering	Dan Hickey	630-799-1287	dan@cadant.com
VP – Marketing & Product Mgt	Gene Rosendale	630-955-9840	gene@cadant.com

Board of Directors

Venkata Majeti	CEO	630-799-1250	venkata@cadant.com
Eric Copeland	General Partner, Venrock Assoc	650-561-9079	esc@venrock.com
Mark Rochkind	Exeter Lane Assoc	973-538-5597	mrochkind@worldnet.att.net
Jay Vohra	President & CEO, Isourcing	312-345-1022	info@isourcing.com
Randy Lyon	Managing Director, J.P. Morgan	312-541-3370	lyon_randolph@jpmorgan.com

Technical Advisory Board

Stephen Dukes (Chairman)	Former VP, Engineering, MediaOne	303-858-3285	stephandukes@mindspring.com
David Bukovinsky	VP, Engineering, Wild Blue	720-554-7400	dbukovinsky@isky.net
Walter Ciciora	Former, CTO, Time Warner Cable	203-259-5183	wciciora@aol.com
Steve Craddock	VP, Engineering, Comcast	215-981-7838	scraddock@comcastpc.com
Nick Hamilton-Piercy	VP, Engineering, Rogers Cable	416-935-4828	npiercy@rci.rogers.com

Company Overview: Cadant, founded in May 1998 and located in Lisle, Illinois is a leading developer of next-generation multi-service IP-based cable modem termination systems ("CMTS"). The Company currently has approximately 110 employees, 80 of whom are engineers. The Company has successfully developed an advanced next-generation cable networking solution called the C4 to provide more reliable service and enhanced offerings to cable subscribers. C4 provisions a higher degree of integration and performance with features such as flow control, scheduling, and policing, to allow simultaneous transmission of voice, data and video. The C4 is a high-density system that is capable of 128 upstream channels and 32 downstream channels per chassis. The product is capable of sending and receiving voice and data packets over cable in compliance with CableLabs' DOCSIS v1.1 standard. DOCSIS v1.1 optimizes cable bandwidth utilization and supports multiple classes of service as well as real-time service flows needed for applications such as voice and streaming video. The C4 is also compliant with PacketCable 1.0, which is necessary to qualify for carrier-class VoIP services. At present, the Company intends to begin trials with multiple system operators ("MSO") in the fourth quarter of 2000.

Industry Background: The next-generation CMTS industry is poised for considerable growth as cable network operators continue to aggressively upgrade their hybrid fiber coaxial ("HFC") infrastructure to complete the two-way cable build-out. About 45% of the cable plant has already been upgraded to HFC. During 1999, there was $340 million in revenue generated from CMTS shipments worldwide, representing 170% growth rate over the previous year. According to Dataquest, worldwide revenue for the CMTS equipment market is expected to grow to more than $2.5 billion by the end of 2003. This significant industry growth is in response to several factors:

MSO migration to standards-based equipment:

• MSO migration toward standards-based equipment has accelerated as companies such as MediaOne and Cox Communications complete their overlay of DOCSIS-based systems to eliminate capacity constraints.

• In light of aggressive positions of many ILECs and LECs in utilizing DSL and fixed wireless based technologies, cable operators must implement DOCSIS based systems to capture and maintain market share for video and enhanced services.

Advanced service offerings:

• Previous generation proprietary CMTS systems lack many of the capabilities of the newer systems with respect to security, interoperability, bandwidth, downstream and upstream data rates, packet processing power and automated self-provisioning.

• MSOs are looking for better ways to compete against insurgents ranging from satellite TV to ISPs.

Growth in cable modem shipments:

• Cable modem shipments to PCs totaled approximately 3 million units in 1999 and are forecasted to grow to more 12.6 million by year-end 2004, according to Gartner Group.

• The number of total homes passed by cable TV systems in North America in 1999 was about 97 million, and homes passed by cable data services approached about 65 million.

Competitive Pricing:

• Significantly lower prices for standard-based cable modems.

**Management
And Employees:** The Company has approximately 110 employees, 80 of whom are engineers. The 80 engineers have an average of 18 years of experience in cable, telecom, gigabit ATM, and router technology from leading technology companies such as Lucent Technologies, Bell Labs, Westell Technologies, U.S. Robotics, Motorola and Cisco Systems, among others.

Innovation: 19 Patents pending for technology developments.

**Sustained Rapid
Growth:** The Company is at the forefront of the DOCSIS-based CMTS industry, which is expected to reach nearly $2.5 billion by 2003, according to Dataquest. The Company believes that its product offering is superior because it provisions a higher degree of integration and performance with features such as flow control, scheduling, and policing, to allow simultaneous transmission of voice, data and video. As a result, the Company believes that by 2003 it will capture 30% of the total CMTS market share. Additionally, the Company intends on to invest a substantial amount of time and resources to develop derivative products in fixed wireless and DSL.

**DOCSIS 1.1
Certification:** The Company expects to be the first-to-market supplier of DOCSIS v1.1 compliant CMTS systems.

Product Capability: Standard open interface and protocols allow for seamless integration and performance in compliance with DOCSIS 1.1 standards.

- **DOCSIS v1.1:** MSO migration toward standards-based equipment has accelerated as companies such as MediaOne and Cox Communications complete their overlay of DOCSIS-based systems to eliminate capacity constraints.

- **Scalability:** The C4 supports subscriber growth with the highest density and scalability offered in the industry with a standard rack carrying 3 chassis capable of 128 upstream and 32 downstream channels per chassis. The C4 is able to offer open access to over 4,000 ISP, ASP and Virtual Private Network operators.

- **Quality of Service ("QoS"):** Fully compliant with QoS as governed by DOCSIS 1.1 limiting issues such as latency, echo, jitter and lost packets. Uniquely designed to sustain any system component failure without interruption of service providing for true carrier-class availability with 99.999% uptime.

- **Advanced Packet Processing:** Enhanced capabilities in packet processing including flow-based classification and prioritization; flow-based policing; hard and soft-limiting flow control; [WRED] congestion control based on flow priority and flow activity; fine-grain congestion control technique containing over 70 tunable parameters; priority-based queuing; priority-based scheduling; extensive layer 2, 3, and 4 filtering; priority-marking gatekeeper; billing and performance monitoring counts; and traffic shaping for VoIP and streaming video flows.

- **System Management:** Powerful system management capabilities simplify installation, monitoring, and overall system administration.

**Relationship with
MSOs:** The Company has primarily targeted, and is in various levels of discussion with, the top seven US MSOs, which cover 80% of the total homes passed by cable.

DOCSIS Standard: Docsis v1.0 established universal ground rules for the transmission of packets across cable networks, ensuring that packets will be routed correctly. DOCSIS v1.0 has been enhanced in DOCSIS v1.1 with quality of service ("QoS") features that enable the prioritization of packet traffic and security features that are necessary for voice communication. This allows cable operators to give voice packets the right of way and allows other traffic to be sent with a best-efforts priority as determined by bandwidth availability.

Competitive Overview: CMTS products are offered by 3Com, Cabletron, Cisco, Com21, Motorola, Nortel Networks/Arris Interactive and Terayon. Broadband Access Systems, River Delta Networks and BigBand Networks are private companies that are also developing CMTS products. Cisco Systems, Cadant, Broadband Access Systems and River Delta Networks are developing products which are DOCSIS compliant. However, Cadant and River Delta Networks are the only companies developing products which are DOCSIS v1.1 compliant.

The following profiles highlight the primary CMTS product vendors:

Nortel Networks/Arris Interactive

Arris is a joint venture between Nortel Networks and ANTEC Corp. The Company is built on the strength of its parent companies in the development of next-generation integrated broadband networks, coupled with strong relationships with both US and Canadian MSOs. The Companies CMTS product, the Cornerstone CMTS 1000 is in full compliance with DOCSIS v1.0 standard and has proven performance with more than 25 cable operators in 42 cities and 11 global markets. The Cornerstone provides two downstream and eight upstream channels.

BigBand Networks

BigBand Networks is a leading provider of a new class CMTS solution that enable service providers to deliver and manage differentiated and interactive services combining video, audio and data. BigBand Networks' patented NativeMedia™ technology architecture is based on the distribution and management of media in its original forms, which results in unprecedented quality, functionality, scalability and efficient use of bandwidth.

Broadband Access Systems ("BAS")

BAS has established itself as a leading developer and supplier of next-generation CMTS equipment. The company's revolutionary CMTS, called the Cuda 12000, is NEBS and DOCSIS v1.0 compliant, and is designed to support future upgrade requirements. The Cuda has been commercially available in limited quantities since the fall of 1999. The Cuda is differentiated by its distributed routing architecture that places a high-powered processor directly on each CMTS card capable of delivering up to 42 million packets per second on a fully loaded chassis. This feature allows the device to maintain wire-speed packet forwarding as service penetration and complexity grows. Time Warner and Adelphia have begun deploying the Cuda in their networks, while field trials are underway with numerous other operators worldwide. On September 20, 2000, ADC Telecommunications announced that were planning on acquiring BAS for $2.25 billion in stock.

Cisco

Cisco Systems' CMTS product, the uBR 7246, was the first-to-market DOCSIS v1.0 system. As a result, the Company has captured almost 75% of all upstream and downstream CMTS port shipments and established credibility and long-term relationships with numerous MSOs. The Company's CMTS product supports Time Warner, AT&T, Media One, Cox and Comcast, among others. Although Cisco's early presence has allowed them to capture a majority of the market share, their current CMTS product trails numerous private companies, such as BAS, Cadant and River Delta, in overall performance.

River Delta Networks

River Delta's CMTS product, the BSR 64000, is [DOCSIS v1.0 compliant], and is designed to support future upgrade requirements. The BSR 64000 allows for per-flow policing and traffic shaping at wire-speed. A key differentiating feature of the BSR 64000 is that as traffic volumes grow, cable operators can deploy it at their distribution hubs rather than at a cable head end in order to get greater numbers of streams to customers. The BSR 64000 is currently in two beta trials with customer shipments due in the fourth quarter.