Ascend

Market Share Analysis

Remote Access Shipments and Market Share Analysis

Both DataQuest, a market research firm based in San Jose, Calif., and The Dell'Oro Group, a market research firm based in Portola Valley, Calif., released their latest remote access shipments and market share analysis reports. DataQuest has released shipment numbers and market share analysis up to Q1 1996. The Dell'Oro group has released shipment numbers and market share analysis up to 1H 1996.

Note: The remote access market analysis is a new service from DataQuest, and this is their first remote access market shipment and market share report.

Both The Dell'Oro group and DataQuest have declared Ascend the market share leader in the Remote Access Concentrator segment, the fastest growing segment in the Remote Access Market.

Please note that The Dell'Oro group and DataQuest use slightly different methodologies to count port shipments.

The Dell'Oro Group Report

The attached charts (Charts 1 through 6) are based on the Dell'Oro Group. It provides Ascend's shipment performance and market share trends up to 1H 1996 as well as our key competitor's in three distinct segments:

- Remote Access Concentrator segment (systems with T1/PRI support)
- Remote Access Server segment (systems with BRI, frame relay support)
- ISDN SOHO routers

Per The Dell'Oro group, Ascend continues to maintain its dominant position in the Remote Access Concentrator segment with a 55. 6% market share (See Chart 2 of the attached Excel spreadsheet). Following is the market share of key players in the Remote Access Concentrator segment in 1H 1996:

Ascend	55.6%
US Robotics	26.8%
Shiva	5.2%
3Com	5.1%
Cisco	1.2%

Per the Dell'Oro Group, we continue to gain market share in the Remote Access Concentrator, Remote Access Server and SOHO ISDN Router segments.

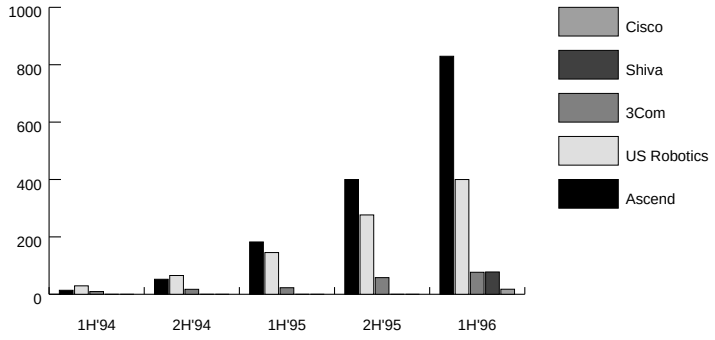
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Worlwide Shipments of Remote Access Concentrator Ports (000's)

	1H'94	2H'94	1H'95	2H'95	Q1'96
Ascend	13.9	52.3	182.3	399.9	829.5
US Robotics	29.4	65.4	145.4	276.5	399.9
3Com	9.5	17.3	22.8	58	76.7
Shiva	0	0	0	0	77.7
Cisco	0	0	0	0	17.6

Ascend products: All MAX products except MAX 1800 and 200plus

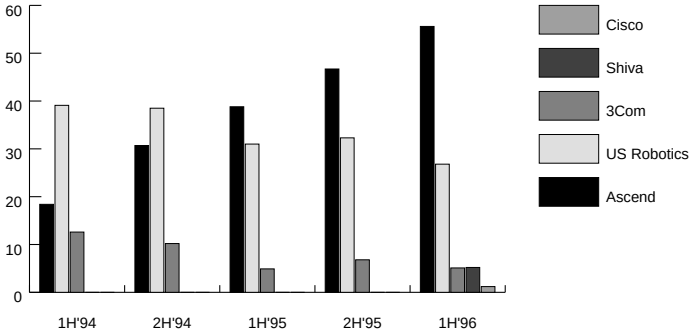


Source: The Dell'Oro Group

Chart 1

Market Share-
Worldwide Shipments of Remote Access Concentrator Ports

	1H'94	2H'94	1H'95	2H'95	1H'96
Ascend	18.4%	30.7%	38.8%	46.7%	55.6%
US Robotics	39.1%	38.5%	31.0%	32.3%	26.8%
3Com	12.6%	10.2%	4.9%	6.8%	5.1%
Shiva	0.0%	0.0%	0.0%	0.0%	5.2%
Cisco	0.0%	0.0%	0.0%	0.0%	1.2%



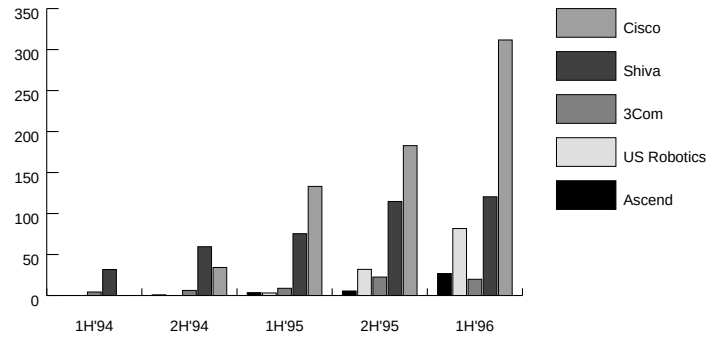
Source: The Dell'Oro Group

Chart 2

Worldwide Shipments of Remote Access Server Ports (000's)

	1H'94	2H'94	1H'95	2H'95	1H'96
Ascend	0	0.8	3.5	5.5	26.8
US Robotics	0	0	3.10	31.90	81.70
3Com	4.3	6.2	8.8	22.5	19.8
Shiva	31.7	59.5	75.4	114.7	120.4
Cisco	0	34.2	133.1	182.8	311.7

Ascend Products: MAX 1800, 200plus



Source: The Dell'Oro Group

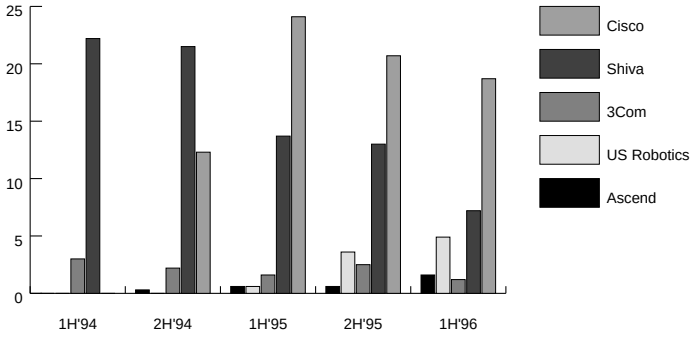
Chart 3

ASCEND

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Market Share Analysis
Worldwide Shipments of Access Server Ports

	1H'94	2H'94	1H'95	2H'95	1H'96
Ascend	0.0%	0.3%	0.6%	0.6%	1.6%
US Robotics	0.0%	0.0%	0.6%	3.6%	4.9%
3Com	3.0%	2.2%	1.6%	2.5%	1.2%
Shiva	22.2%	21.5%	13.7%	13.0%	7.2%
Cisco	0.0%	12.3%	24.1%	20.7%	18.7%



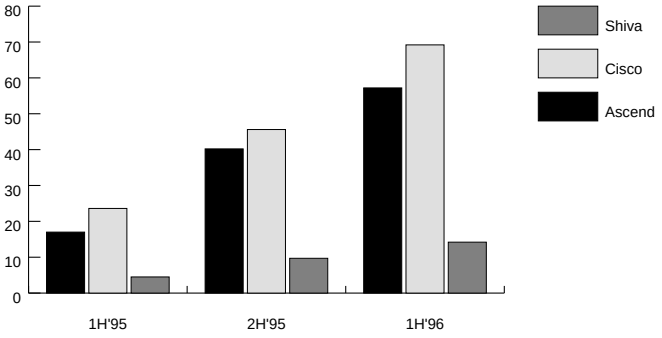
Source: The Dell'Oro Group

Chart 4

Worldwide Shipments of SOHO Router Ports

	1H'95	2H'95	1H'96
Ascend	17	40.2	57.2
Cisco	23.6	45.6	69.2
Shiva	4.5	9.7	14.2

Ascend Products: Pipeline ISDN routers

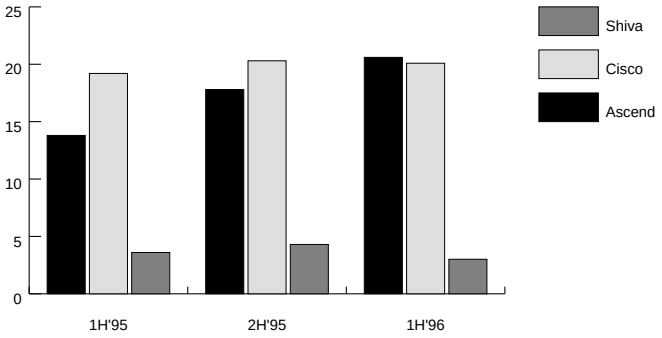


Source: The Dell'Oro Group

Chart 5

Market Share Analysis
Worldwide Shipments of SOHO Router Ports

	1H'95	2H'95	1H'96
Ascend	13.8%	17.8%	20.60%
Cisco	19.2%	20.3%	20.09%
Shiva	3.6%	4.3%	3.01%



Source: The Dell'Oro Group

Chart 6

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The DataQuest Report

Also attached are four charts (charts 7 through 10) based on information published by DataQuest. These charts cover Ascend's performance in the Total Remote Access Concentrator segment (Analog +ISDN/Hybrid*) and Remote Access Concentrator (ISDN/Hybrid only) along with our key competitors.

- DataQuest is segmenting the Access Concentrator market into pure analog (i.e analog only) and ISDN/Hybrid, which is both ISDN and Hybrid (Digital or Analog)

Per DataQuest, we are the market share leader with 56% in Q1 1996 and continue to gain market share (see Chart 8) in the Total Remote Access Concentrator segment, the fastest growing segment in the Remote Access market. Following is the market share analysis summary:

Total Remote Access Concentrator segment (Analog + ISDN/Hybrid) in Q1 1996:

Ascend - 56%
US Robotics - 22%
3Com - 11%
Cisco - 2%
Shiva - Not mentioned

Remote Access Concentrator segment (ISDN/Hybrid only) in Q1 1996:

Ascend - 75%
US Robotics- 7%
3Com- 10%
Shiva - 3%
Cisco- Not mentioned

Important note: Some of our competitors may claim higher market share than what is mentioned above based on Revenues. This is not a true and valid measure because they have per port prices substantially higher than ours.

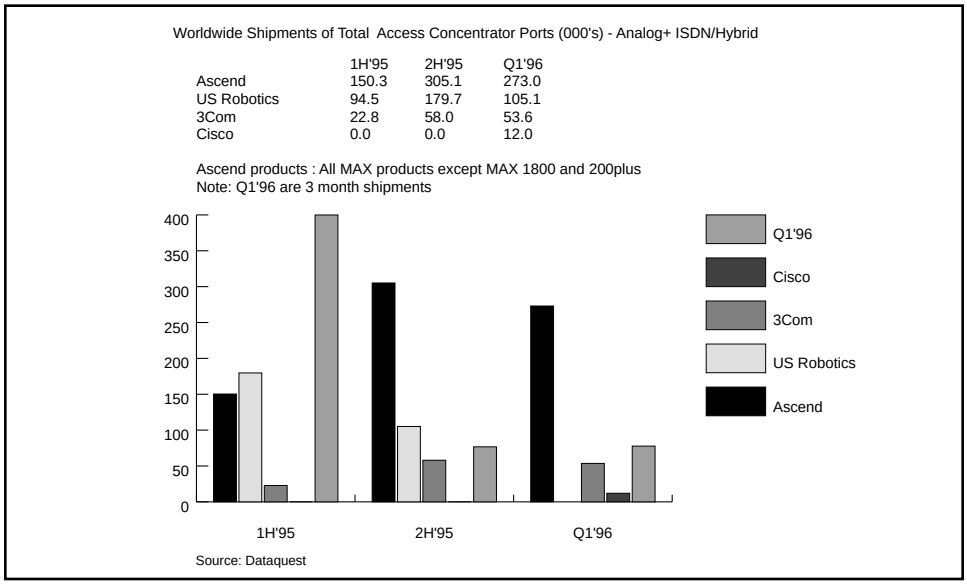
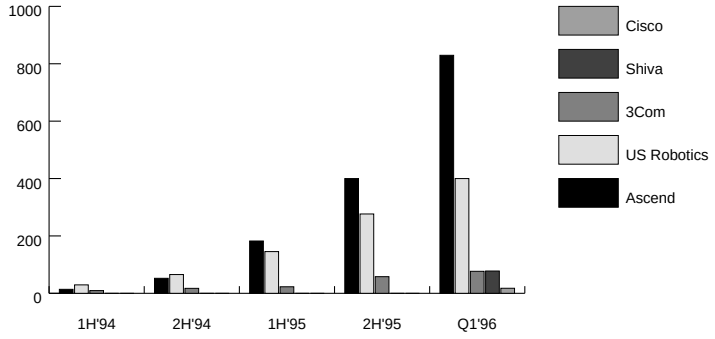


Chart 7

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Market Share Analysis
Worldwide Shipments of Total Access Concentrator Ports (000's)

	1H'95	2H'95	Q1'96
Ascend	42%	46%	56%
US Robotics	27%	27%	22%
3Com	6%	9%	11%
Cisco	0	0	2%



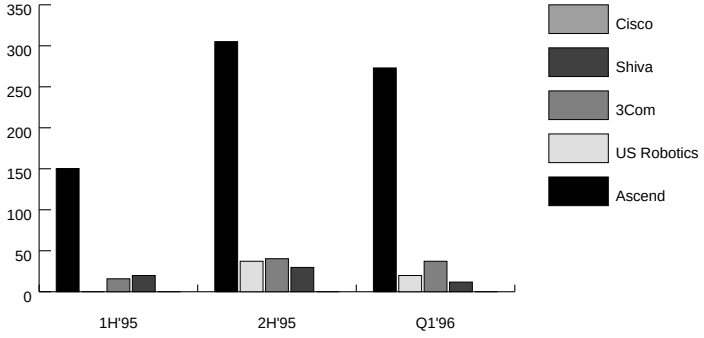
Source: Dataquest

Chart 8

Worldwide Shipments of Remote Access Concentrator Ports (ISDN/Hybrid)

	1H'95	2H'95	Q1'96
Ascend	150.3	305.1	273.0
US Robotics	0.0	0.0	37.2
3Com	15.8	40.3	37.2
Shiva	19.8	29.7	11.8

Note: Q1'96 are 3 month shipments

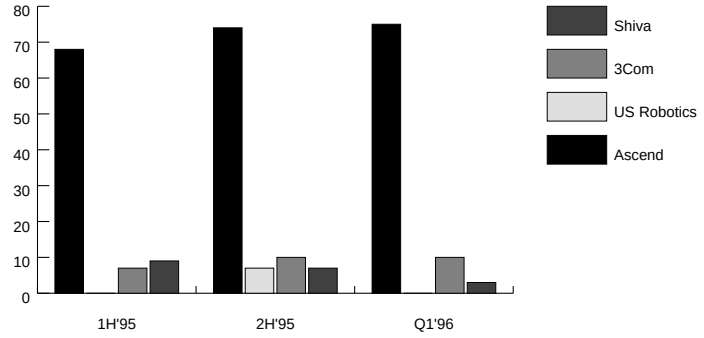


Source: Dataquest

Chart 9

Market Share Analysis
Worldwide Shipments of Remote Access Concentrator Ports ISDN/Hybrid

	1H'95	2H'95	Q1'96
Ascend	68%	74%	75%
US Robotics	0%	0%	7%
3Com	7%	10%	10%
Shiva	9%	7%	3%



Source: Dataquest

Chart 10

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