PARADYNE NETWORKS INC
Form 10-K
March 15, 2004
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SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K

FOR ANNUAL AND TRANSITION REPORTS

PURSUANT TO SECTIONS 13 OR 15(d) OF

THE SECURITES EXCHANGE ACT OF 1934

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

FOR THE FISCAL YEAR ENDED DECEMBER 31, 2003

OR

¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

FOR THE TRANSITION PERIOD FROM _____TO_____

COMMISSION FILE NUMBER: 000-26485

PARADYNE NETWORKS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**75-2658219**
(State or other jurisdiction of incorporation)	**(I.R.S. employer identification no.)**

8545 126th Avenue North

Largo, Florida 33773

(Address of principal executive offices) (Zip Code)

(727) 530-2000

(Registrant s telephone number, including area code)

Securities Registered Pursuant to Section 12(b) of the Act:

None

Securities registered pursuant to Section 12(g) of the Act:

Common stock, $.001 par value per share

(Title of class)

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x

Indicate by check mark whether the registrant is an accelerated filer (as defined in Exchange Act Rule 12B-2) Yes x No ¨

The aggregate market value of the registrant s common stock held by non-affiliates of the registrant was approximately $150,826,031 at March 11, 2004, based on the closing sale price of $3.55 per share for the common stock on such date on the Nasdaq National Market.

The number of shares of the registrant s common stock outstanding at March 11, 2004 was 44,845,949.

Documents Incorporated by Reference

Portions of the registrant s Proxy Statement for the Annual Meeting of Stockholders to be held on May 14, 2004 are incorporated by reference into Part III thereof.

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PARADYNE NETWORKS, INC.

Annual Report on Form 10-K

For the Fiscal Year Ended December 31, 2003

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PART I

ITEM 1. Business

We believe that it is important to communicate our plans and expectations about the future to our stockholders and to the public. Some of the statements in this report are forward-looking statements about our plans and expectations of what may happen in the future, including in particular the statements about our plans and expectations under the headings Item 1. Business and Item 7. Management s Discussion and Analysis of Financial Condition and Results of Operations . Statements that are not historical facts are forward-looking statements. These forward-looking statements are made pursuant to the safe-harbor provisions of the Private Securities Litigation Reform Act of 1995. You can sometimes identify forward-looking statements by our use of forward-looking words like may, will, should, expects, intends, plans, anti believes, estimates, predicts, potential, or continue or the negative of these terms and other similar expressions.

Although we believe that the plans and expectations reflected in or suggested by our forward-looking statements are reasonable, those statements are based only on the current beliefs and assumptions of our management and on information currently available to us and, therefore, they involve uncertainties and risks as to what may happen in the future. Accordingly, we cannot guarantee you that our plans and expectations will be achieved. Our actual results and stockholder values could be very different from and worse than those expressed in or implied by any forward-looking statement in this report as a result of many known and unknown factors, many of which are beyond our ability to predict or control. These factors include, but are not limited to, those contained in Item 7. Management s Discussion and Analysis of Financial Condition and Results of Operations-Risk Factors Which May Impact Future Operating Results and elsewhere in this report. All written and oral forward-looking statements attributable to us are expressly qualified in their entirety by these cautionary statements.

Our forward-looking statements speak only as of the date they are made and should not be relied upon as representing our plans and expectations as of any subsequent date. While we may elect to update or revise forward-looking statements at some time in the future, we specifically disclaim any obligation to do so, even if our plans and expectations change.

This Form 10-K includes trademarks, servicemarks and trade names of other companies.

We make our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and proxy statement for our annual stockholders meeting, as well as any amendments to those reports, available free of charge through our web site as soon as reasonably practicable after we electronically file such material with, or furnish it to the SEC. You can learn more about us by reviewing our SEC filings on our web site. Our SEC reports can be accessed through the company page of our web site, namely www.paradyne.com/corporate_info. The SEC also maintains a web site at www.sec.gov that contains reports, proxy statements and other information regarding SEC registrants, including Paradyne. Any reference herein to our worldwide web address does not constitute incorporation by reference into this Annual Report on Form 10-K of the information contained on our web site.

Overview

We are a leading developer, manufacturer and distributor of broadband network access products for network service providers, commonly referred to as NSPs, and business customers. We operate in a single business segment. We offer solutions for NSPs that utilize existing telephone lines and enable them to offer high speed, cost-effective voice, data and video solutions at speeds up to one gigabit per second. NSPs

use our broadband products to enable high-speed connections from the central office to the customer premise. Moreover, our broadband products enable NSPs to more efficiently provide network access services by allowing a high level of management, monitoring and control over network access equipment and circuits. Business customers use our broadband products for high-speed connection of voice and data communications to connect their employees to corporate wide area networks and to the internet using both public and private services provided by NSPs. Our products are designed for easy installation by NSPs and end users, significantly reducing the need for installation by an onsite service technician, thereby reducing costs for network access. We believe that demand for high-speed, broadband transmission will continue to increase as more business and residential users find narrowband access technologies inadequate to meet their high-bandwidth requirements. We strive to meet that demand in the broadband access market by focusing our products on next generation digital subscriber line, or DSL, Voice over Broadband Gateways, service level management, and other broadband access products.

We operate our business through our wholly-owned subsidiary, Paradyne Corporation. Paradyne Corporation was originally incorporated in Delaware in 1969, acquired by AT&T in 1989 and spun out of AT&T as part of Lucent Technologies in 1996. In July 1996, a limited partnership controlled by Texas Pacific Group acquired Paradyne Corporation and formed Paradyne Acquisition Corp. as a holding company. Paradyne Acquisition Corp. changed its name to Paradyne Networks, Inc. in June 1999. In July 1999 and September 1999, Paradyne Networks, Inc. issued shares of common stock in the public marketplace through an initial public offering and secondary offering, respectively.

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Paradyne has a long history of technological innovation. As of the end of 2003, we have issued over 325 U. S. patents, hold over 205 patents and have over 70 U. S. patent applications pending. Our equipment has been sold to over 70% of the Fortune 500® companies. With our reputation and history as a supplier of access solutions to a large customer base, we believe that we are well positioned to provide data, voice and video broadband access solutions to NSPs and business customers as they expand and upgrade their networks.

Industry Background

Over the past several years, data traffic generated by computer users accessing the Internet or business networks has increased significantly. Industry analysts believe that the volume of this data traffic, referred to as wide area network traffic, will continue to expand rapidly due to four key trends:

- the dramatic growth in the use of high bandwidth applications over the Internet; such as video and voice;
- the proliferation of distributed computing applications, such as electronic mail, electronic transaction processing, enterprise resource planning and inter-enterprise information transfer based on Web-technologies;
- the deregulation of the telecommunications services industry which has increased the number of service providers and intensified competition; and
- the continued deployment of high capacity fiber optic networks and the emergence of high-volume bandwidth network access technologies that increase the ability to transfer large volumes of information.

In order to accommodate increasingly high volumes of data, NSPs have invested significant resources to upgrade central office switching centers and the interconnecting infrastructure, known as the network backbone. While capacity constraints in the network backbone continue to be addressed through the use of high-speed digital and fiber-optic equipment, the network that connects end users to NSP central offices, typically known as the last mile, remains a bottleneck that limits high-speed data transmission. The last mile was originally constructed with copper twisted-pair wiring designed to support analog voice traffic. There is an estimated installed base of over 180 million copper lines in the United States, and over 900 million worldwide. End users have been frustrated by these limitations and the ability of NSPs to cost effectively deliver high-speed services, such as telecommuting, branch office internetworking and Internet access, over the last mile. Standard, narrowband dial-up connections, which are typically limited to data transmission rates of 28.8 kilobits per second, or Kbps, to 56.0 Kbps do not adequately support these applications. Most business and residential users are finding these types of narrowband access technologies unacceptable for their high bandwidth requirements for voice, video and data services.

Global regulatory changes have increased the number of competitors in the access portion of the network and are accelerating the need for NSPs to upgrade their networks and increase their service offerings. Internationally, a number of developed and developing nations have privatized their state-owned telecommunications monopolies and opened their markets to new NSPs. New competitors in these markets include cable TV operators, Internet service providers, satellite operators, fixed wireless operators, and electric utilities. For example, cable TV operators already provide voice and data services to customers by leveraging the high bandwidth capabilities of their coaxial cable based infrastructure. This increase in competition for the access portion of the network is also helping to facilitate the transition from narrowband to broadband access over the last mile. These new international competitors are delivering broadband network access to end-user customers for voice, video and data services, which applies significant pressure to the incumbent local exchange carriers, or ILECs, to enhance their network infrastructure and deliver similar broadband services.

New digital technologies have been introduced to increase the speed and quality of digital transmission over the copper wire infrastructure, or local loop, in the last mile and provide alternative means of accessing the network backbone. The increased speed, lower transmission cost, higher reliability and quality of digital networks are better suited for transmitting the increased level of enhanced voice, video and high-speed data traffic that now must pass over the last mile. NSPs continue to aggressively install higher-speed, digital broadband transmission technologies, such as DSL, in the last mile. According to research data compiled by IDC, the worldwide number of DSL connections is expected to grow to over 115 million subscribers by 2007. Based on current market statistics and considering an average price of $100 per line this market growth would require approximately $5.1 billion in DSL equipment over the next four years.

NSPs have deployed various narrowband and broadband technologies across customers wide area networks in order to provide cost-effective access solutions for their customers. Demand for high-speed access services has increased and more protocols have emerged to facilitate the connections of business customers to NSPs network backbones. Protocols are computer languages that allow two or more communications devices, such as modems, to communicate with one another. These protocols include Internet Protocol, commonly referred to as IP, Frame Relay, asynchronous transfer mode, commonly referred to as ATM, integrated services digital network, commonly referred to as ISDN and others. When networks must

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support multiple protocols, network management is more difficult because many protocols are being used simultaneously and the network management devices must decipher each protocol. The proliferation of protocols makes the provision and management of high-speed access technologies and services increasingly difficult. As a result, NSPs are required to operate and maintain hybrid networks comprised of recently adopted new technologies and existing installed equipment.

The performance, quality and maintainability of network services are highly dependent on the volume and type of traffic running over these hybrid networks. As a result, NSPs and business customers need sophisticated diagnostic and management capabilities to monitor business customer application traffic. The required tools should analyze the physical transmission characteristics as well as enable NSPs and business customers to evaluate compliance with service level agreement parameters such as: how much data gets through the network; the time it takes data to get through the network; and availability of the network. Business customers also need management solutions that can be scaled to meet growing demand for services, improve network quality, reduce the number of support personnel managing their networks and lower the overall costs for bandwidth and maintenance tools.

As demand for high-speed transmission continues to increase, we believe that the telecommunications industry will continue to develop and deploy new broadband access technologies, which will become increasingly cost competitive with traditional technologies. As a result of changes in the telecommunications industry, NSPs are requiring flexible solutions that can be scaled to meet growing demand for voice, video and data services, and also permit easy, cost-effective enhancements in the future. With the increasing number of access protocols and equipment options, customers are placing a higher level of importance on the ability of equipment providers to deliver integrated system solutions.

Business Objective and Strategy

Our objective is to maintain and build upon our position as one of the leaders in the broadband access market by focusing on several solutions: next generation DSL, conventional copper broadband, voice over broadband and Service Level Management. Key elements of our strategy include:

Continue To Develop Innovative Broadband Technology and System Solutions

We will continue to focus on providing innovative, cost-effective broadband access solutions that improve communications over the traditional copper telephone wire infrastructure for NSPs and business customers. Sales of broadband equipment represented approximately 89% of our total equipment sales revenues for 2003. We believe that our internally developed technologies play a key role in differentiating our products from those of our competitors. We have been issued over 325 U. S. patents, hold over 205 patents and have over 70 U. S. patent applications pending, and we expect that many of these patents and patent applications will contribute to the development of new technologies and systems. In addition, we will continue to collaborate with technology partners, in the U.S. and overseas, to facilitate the development of competitive products, as we have previously done with Lucent, ST Microelectronics, Texas Instruments and others. Our DSL technological innovations include our ReachDSL technology, which continues to be further enhanced and brought to market in the form of our ReachDSL products. Our ReachDSL transceiver technology, which is the core building block of our ReachDSL products, has demonstrated superior loop reach, immunity to typical impairments and ease of installation over alternative DSL technologies.

In January 2002, we signed an agreement with Alcatel Microelectronics (a division of Alcatel that was subsequently sold to ST Microelectronics) to develop a new ADSL chipset that incorporates our ReachDSL technology. If successful, this new ADSL chipset, called ADSL/R, will allow NSPs to deploy a single product everywhere without concern for whether the copper lines will fully support ADSL

technology. It is anticipated that the ADSL/R chipset will initially attempt to establish connectivity with ADSL, but if it fails to do so, it will establish connectivity with ReachDSL, providing the customer with broadband service regardless of the line conditions. This feature can potentially save the NSP a considerable amount of operational expense, delay and customer frustration. We believe ReachDSL technology will continue to allow us to provide differentiated solutions, both in products and chipset technology, which provide our NSP customers with greater market coverage to more customers and lower installation costs than alternative DSL products.

In February 2003, we offered a new customer premise product that uses ADSL/R technology, which allows the product to operate with standard ADSL technology or, alternatively, with ReachDSL technology. This product represents a large potential benefit to carriers who wish to deploy both standards-based ADSL for some customers and Paradyne s unique ReachDSL in the more challenging environments. This new product will allow the carrier to only have to stock and support a single customer premise product to cover both technologies. In 2004, we plan to offer an enhanced version of ADSL/R supporting the latest ADSL standards ADSL2 and ADSL2+, allowing the NSP to gain the same operational efficiencies and be able to deploy and support video and voice over IP services. We expect the product will be available later this year.

With the acquisition of Elastic Networks in 2002, we obtained a new set of innovative DSL technologies called EtherLoop. Elastic Network s BitStorm product family uses EtherLoop technology to deliver up to 10 Mbps over standard telephone wiring. Elastic Networks had found some success in the in-building and hospitality (hotel) DSL markets with their BitStorm

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products. We have continued to pursue these markets by expanding the BitStorm product line to support video over DSL and significantly improved the cost effectiveness of hospitality and in-building broadband solutions for data and video services. Additionally, Paradyne increased the number of NSP partners in the hospitality market, resulting in a substantial increase share of the hospitality and in-building services market. We believe the additional Bitstorm products along with the EtherLoop technology has allowed Paradyne to provide differentiated video and data solutions to the emerging in-building and hospitality DSL markets.

Our SLM technology innovations have been implemented in our iMarc and OpenLane products. We continue to enhance these products with innovations that enable our NSP customers to offer more cost-effective SLM services more broadly. We continue to enhance our DSL solutions with products designed for the in-building DSL market and more cost-effective DSL access multiplexer, or DSLAM, solutions for deployment of ADSL, SHDSL and our ReachDSL technology. In order to increase customer premise equipment choices for our customers, we will continue to interoperate with products that allow customers to perform additional, high-value functions over their DSL network. These products allow voice, video and data to share the DSL network, streaming audio and video over a DSL network, or special protocols to be transmitted over a DSL network. In order to create additional features for our DSLAMs, we continue to develop new versions of both hardware and software to support new requirements from our customers. Further, we have integrated our iMarc SLM technology into additional platforms, including those that support DSL, IP and ATM. These new SLM DSL products will enable service providers to offer higher profit business networking to branch offices and expand their services beyond the commodity internet access markets. As our customers continue to expand their DSL networks into the application space of conventional broadband networks, we believe our technological leadership and products will provide Paradyne with a competitive advantage.

Continue To Capitalize On Global Buildout of DSL Infrastructure

Unit sales of DSL equipment, as projected by industry sources, continue to show strong growth. According to a worldwide analysis by Point Topic produced in conjunction with the DSL Forum, NSPs added over 27 million lines of DSL in 2003, 65% more than in 2002. Total DSL lines increased by over 30% in the second half of the year, reaching 63.8 million by December 31, 2003, and fueling 78% growth for the year as a whole. This increase is due to accelerated broadband adoption in a greater number of countries, and DSL winning a larger share of the worldwide market over cable modem offerings.

To capitalize on this projected growth, we intend to continue to pursue design wins from NSPs that are offering or plan to offer DSL services. A design win is achieved when an NSP adopts Paradyne products as one of a limited number of DSL platforms for its central office or private network deployment. A typical NSP build out includes DSLAMs in an NSP s central office, resulting in an installed base into which Paradyne will be well positioned to sell DSL line-cards for the DSLAMs and DSL customer premises equipment for the end user. From the third quarter of 1997 through the fourth quarter of 2003, Paradyne has shipped over 36,000 DSLAMs into the marketplace with more than 5.2 million ports of capacity in the field. Some of our current DSL customers include Choice One Communications, Integra Telecom, Beijing Telecom, Dalsviaz (Russia), Cavalier Telephone, TDS Telecom, Northern Telephone, Shanghai Telecom, Concord Telephone, Matanuska Telephone, BroardCom Communications, Puerto Rico Telephone Company, Sprint and Verizon. We will continue to focus on increasing our number of design wins with new NSPs, as well as maintain our existing relationships with NSPs who have awarded us design wins in the past.

We increased our efforts to penetrate the emerging DSL markets outside of the U.S. in 2003 and had success with Serbia Telecom, Cybernet, Og Vodaphone, and EGYNET. These markets represent greater opportunities in 2004 and beyond than they have in the past as many countries throughout Asia, Europe, Africa and Latin America are starting to deploy broadband DSL networks. We also intend to continue to produce a variety of DSL line-cards and develop or interoperate with innovative DSL customer premises equipment to handle the diverse needs of our NSP customers. We intend to deliver DSL solutions which improve the profitability of our NSP customers by avoiding the hidden costs associated with many DSL technologies, such as incremental unbudgeted truck rolls, and by providing business grade solutions that will allow our customers to expand their services beyond basic internet access.

In 2003, we expanded our market share within the in-building and hospitality markets for high-speed access and video over DSL services. These markets have stabilized and have emerged as requiring support for video on demand, internet access and voice. The BitStorm product line is able to cost effectivity deliver the bandwidth over short copper loop distances to support applications like these. In both the in-building (multiple dwelling unit or MDU) market and the hospitality (hotels) market, demand for services like these offer service providers and building owners attractive business opportunities. In 2003, we closed significant equipment deals with Sprint and several significant NSP partners, focused on the U.S. MDU market, and major hotel chains such as Six Continents, a hotel holding company with over 3,200 hotels around the world, such as Inter-Continental, Crowne Plaza, Holiday Inn, Holiday Inn Express and Staybridge Suites by Holiday Inn, International Hilton Group, Marriott, and Sheraton. We will continue to focus on increasing our number of design wins with new MDU and hospitality customers, as we believe we are in the position to take advantage of these markets that are in a continued growth phase.

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Worldwide Deployment of iMarc as Part of Our NSP/ SLM Solutions

NSPs are enhancing their service offerings by providing intelligent devices such as certain of our iMarc products that provide NSPs with the diagnostic instrumentation to remotely monitor, diagnose and isolate the source of network performance issues. As a result, NSPs are able to provide higher uptime services, with lower costs of operations. In addition, NSPs are offering service level agreements for their Frame Relay and asynchronous transfer mode business customers. Service level agreements are put in place between an NSP and the NSP s customer to document how the NSP and the customer expect the service to operate. Three parameters are generally measured and documented in these agreements: (1) availability (i.e. whether the service connection is up and running), (2) latency (delay in traversing the network from end-to-end) and (3) throughput (bandwidth used for the customer s connection). If the service does not operate as specified according to these parameters, then there is typically some type of remedy. One example of those specified agreements is an agreement that service is to be available 24 hours a day, 365 days a year. If the service is not available for one of those days, then the NSP may then be required to reimburse the customer for one day s worth of charges. We believe that as service level agreements become more widely adopted, NSPs and end user customers will increasingly require SLM solutions and, therefore, NSPs will be required to incorporate these solutions in their networks. We intend to focus on further integrating iMarc as part of our existing NSP customers service level agreement solutions and obtaining additional iMarc design wins from new NSPs. Currently, AT&T, SBC, BroadWing, WorldCom, Verizon and Sprint, Telus and Bell Canada offer iMarc solutions to their customers. In addition, we intend to work with leading Frame Relay NSPs and DSL NSPs to deploy lower cost Frame Relay and Virtual Private Network (VPN) solutions using our iMarc DSL solutions. These solutions offer dramatic reductions in costs associated with the access networks. In addition, the Frame Relay over DSL solutions reduce the Frame Relay NSPs backbone costs by consolidating the number of access lines terminated on a common Frame Relay switch. These cost reductions offer increased opportunities to improve margins and increase service rates among the existing Frame Relay customers. They also offer the opportunity for NSPs to migrate the large number of business applications from lower end alternative services such as ISDN, satellite and dial-up connections, and expand the addressable market.

Focus on Product Sales To and Through NSPs

We intend to continue focusing on NSPs that deploy DSL, Frame Relay and IP voice, video and data services to capitalize on the increased demand for such services. Over the past five years, our sales to NSPs have increased as a result of the efforts of our worldwide NSP direct sales force. We intend to focus the efforts of our direct sales force on maintaining and increasing sales within our current NSP customer base as well as attracting new NSP customers worldwide.

Leverage Fortune 500® Customer Base as They Upgrade Their Networks to Broadband

We intend to leverage our installed base of Fortune 500® companies and other businesses that have purchased our narrowband products and conventional broadband products. Many of these customers have deployed networks including a combination of our narrowband and broadband solutions, and we expect that these companies will continue to upgrade their networks with additional broadband solutions. We believe that our existing customers prefer to buy our broadband products as a result of the ability to integrate our products into their existing networks more efficiently than the products of our competitors.

Products and Technologies

We develop, manufacture and distribute an extensive line of broadband network access products and technologies. Sales of broadband products represented approximately 81% of our total equipment sales revenue in 2001, approximately 82% in 2002 and approximately 89% in 2003. In addition, we provide systems that allow business customers and NSPs to have a high level of management, monitoring and control over their

network access equipment and circuits. Although advanced network management systems are an important aspect of our products and technology, they have not been a material aspect of our sales revenue generation. The table below includes a summary of our principal products. A further description of these products follows the table.

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Broadband Solutions

Product	Description	Application
GranDSLAM	A DSL access multiplexer chassis that houses different line cards supporting a variety of DSL technologies which enable a variety of access services, including the ability to support line cards that support between four and 24 ports per card.	Typically resides inside an NSP s central office and terminates many DSL lines and aggregates them into a high-speed connection to a network backbone.
ADSL/ADSL2	Consists of: - A line card that fits inside the DSL access multiplexer, or DSLAM, and supports asymmetric digital subscriber line, or ADSL, technologies that operate at the highest possible speed based on the quality of the telephone line, and g.lite a lower speed, splitterless asymmetric DSL technology. - A customer premises endpoint that connects the users equipment to the telephone line.	The card in the DSLAM and the endpoint create a high speed packet connection operating at transmission rates up to 12 megabits per second over a two wire telephone line. Also allows voice to be transmitted at the same time data is being transmitted and allows business partners to provide endpoints that work with Paradyne s DSLAM.
RADSL	Consists of: - A line card that fits inside the DSLAM, and supports ADSL and symmetric digital subscriber line, or SDSL, technologies that operate at the highest possible speed based on the quality of the telephone line. - A stand-alone endpoint that connects the user to the telephone line.	The card in the DSLAM and the endpoint create a high speed packet connection operating at transmission rates up to 7 megabits per second over a two wire telephone line. Also allows voice to be transmitted at the same time data is being transmitted.
MSDSL	Consists of: - A line card that fits inside the DSLAM and supports SDSL technology. - An endpoint that connects the end user equipment to the telephone line.	The card in the DSLAM and the endpoint create a high speed channelized connection operating at transmission rates up to 2 megabits per second over a two wire telephone line. Allows channelized voice to be transmitted at the same time data is being transmitted.
SDSL	Consists of:	The card in the DSLAM and the endpoint create a high speed ATM based connection operating at transmission rates up to 2 megabits per second over a two wire telephone line. Also allows interoperability with certified business partner provided endpoints and iMarc DSL

	- A line card that fits inside the DSLAM and supports SDSL.	endpoints.
	- An endpoint that connects the end user equipment to the telephone line.	
SDSL /IDSL	Consists of:	The card in the DSLAM and the endpoint create a high speed connection operating at transmission rates up to 2 megabits per second over a two wire telephone line. IDSL also allows operation through a Digital Loop Carrier (DLC) for service areas that are fed by DLC based connections.
	- A high density line card that fits inside the DSLAM and supports SDSL/integrated digital subscriber Line, or IDSL, technology that operates at the highest possible speed based on the quality of the telephone line.	
	- An endpoint that connects the end user equipment to the telephone line.	

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Product	Description	Application
G.SHDSL	Consists of: - A line card that fits inside the DSLAM and supports G.SHDSL technology that operates at up to 2 megabits per second. - A customer premises endpoint that connects the users equipment to the telephone line.	The card in the DSLAM and the endpoint create a high speed connection operating at transmission rates up to 2 megabits per second over a two wire telephone line. Also allows interoperability with certified business partner provided endpoints and iMarc DSL endpoints.
ReachDSL	Consists of: - A line card that fits inside the DSLAM and supports ReachDSL technology. - An endpoint that connects the end user equipment to the telephone line.	The card in the DSLAM and the endpoint create a high speed packet connection operating at transmission rates up to 2.2 megabits per second over a two wire telephone line. Also allows voice to be transmitted at the same time data is being transmitted.
ADSL/R CPE	An endpoint device that connects the end user equipment to the telephone line using either ADSL or ReachDSL technology.	The ADSL/R endpoint creates a high speed packet connection operating at transmission rates up to 8 megabits per second over a two wire telephone line running ADSL or up to 2.2 megabits per second over a two wire telephone line running ReachDSL technology. Also allows voice to be transmitted at the same time data is being transmitted.
GranDSLAM 4200	A DSL access multiplexer designed to support a single DSL technology (either ADSL or ReachDSL) over a standard telephone wire. This DSLAM is packaged in a small housing that is only one rack-unit in height (referred to as a 1-U DSLAM), making it very conservative in terms of the rack space required to house the unit.	Typically resides inside an NSP s central office or remote terminal cabinet and terminates up to 24 ADSL or ReachDSL lines and aggregates them into a high-speed connection to a network backbone. Ideal for applications where there is very limited physical space to house the DSLAM.
BitStorm 2400 IP DSLAM	A DSL access multiplexer that is one rack unit in height, designed specifically to support EtherLoop next generation IP DSL technology enabling bi-directional IP bandwidth up to 10 Mbps per line, all compatible with baseband voice on a single pair.	Typically resides inside an NSP s central office or in a building wiring closet and terminates up to 24 EtherLoop lines and aggregates them into a high-speed IP connection to a network backbone.
BitStorm 2600 IP DSLAM	A DSL access multiplexer that is one rack unit in height, designed to support standard ADSL services to a standard ADSL endpoint product at the customer premise, simultaneous with baseband voice on a single pair.	Typically resides inside an NSP s central office or in a building wiring closet and terminates up to 24 ADSL lines and aggregates them into a high-speed IP connection to a network backbone
BitStorm 4800 IP DSLAM	A DSL access multiplexer that is one rack unit in height, designed to support standard ADSL services to a standard ADSL endpoint product at the customer premise, simultaneous with baseband	Typically resides inside an NSP s central office or in a building wiring closet and terminates up to 48 ADSL lines and aggregates them into a high-speed IP connection to a network backbone.

voice on a single pair.

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Product	Description	Application
StormPort CPE	From the Elastic Networks acquisition. IP DSL modems enabling baseband voice and bi-directional IP bandwidth up to 10 Mbps.	Typically resides at a customer premise location where the DSL service is terminated by a customer Ethernet port.
iMarc SLM (Service Level Management)	Consists of: - A stand-alone endpoint that connects remote offices to a frame relay network. Also available as a line card. - SLM software for monitoring and managing a Frame Relay network.	Many locations are connected to a Frame Relay network and the SLM software is used to make sure each location is operating efficiently per the configuration of the Frame Relay service.
iMarc SDSL	Consists of: - A stand-alone endpoint that connects remote offices to an ATM based Frame Relay network and supports symmetric digital subscriber line, or SDSL (2B1Q) technology that operates at the highest possible speed based on the quality of the telephone line. - SLM software for monitoring and managing a Frame Relay network.	The SLM software is used to make sure each location connected to the Frame Relay network is operating efficiently per the configuration of the Frame Relay service. iMarc SDSL provides the same basic capabilities of the iMarc FLEX product, however, it incorporates SDSL as an alternative to T1 or DDS access.
iMarc SDSL Router	Consists of: - A stand-alone endpoint with an integrated basic router that connects remote offices to an ATM based Frame Relay or IP VPN Network and SDSL technology. - Optional SLM software for monitoring and managing a Frame Relay network.	The SLM software is used to make sure each location connected to the Frame Relay network is operating efficiently per the configuration of the Frame Relay service. iMarc SDSL provides the same basic capabilities of the iMarc FLEX product, however, it incorporates SDSL as an alternative to T1 or DDS access and includes an integrated router.
iMarc G.SHDSL	Consists of: - A stand-alone endpoint that connects remote offices to an ATM based Frame Relay network and supports standard G.SHDSL technology that operates at the	The SLM software is used to make sure each location connected to the Frame Relay network is operating efficiently per the configuration of the Frame Relay service. iMarc G.SHDSL provides the same basic capabilities of the iMarc FLEX product, however, it incorporates G.SHDSL as an alternative to T1 or DDS access.

	highest possible speed based on the quality of the telephone line.	
	- SLM software for monitoring and managing a Frame Relay network.	
iMarc Network to Network	A stand-alone endpoint that connects two Frame Relay networks together.	Allows two different Frame Relay networks to be connected together and support the SLM software applications.
iMarc/ATM	A stand-alone endpoint that connects large locations to a Frame Relay network through a 45 megabits per second connection to an ATM network.	Allows one high-speed connection to a Frame Relay network that is more efficient than many lower speed connections.
Jetstream CPX-1000	A standards-based voice gateway chassis that provides all the signaling and interfaces required for broadband access equipment to interface with a standard class-5 telephone switch.	Enables broadband voice services by allowing the interconnection of ATM data streams to a standard class-5 telephone switch, converting the ATM broadband connection to a standard T1 or E1 telephone switch connection.

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Product	Description	Application
Acculink Broadband Digital Access	Stand-alone endpoints that transmit data and voice over high-speed circuits. Also available as a line card.	Allows voice and data traffic to share a single, high-speed circuit to a variety of backbone networks.

Narrowband Solutions

Product	Description	Application
Comsphere Subrate Digital Access	Stand-alone and line card products that support data transmission over digital network facilities.	Allows data services to be connected over digital leased lines at narrowband speeds.
Comsphere Modems	Stand-alone and line card products that support data transmission over analog network facilities.	Dial-up and leased line modems that allow narrowband connectivity over analog lines

Network Management Solutions

Product	Description	Application
OpenLane Network Management System	Software for managing networks built with Paradyne products.	Used as a stand-alone system or part of a larger system to manage all the Paradyne products deployed in a network.
GrandView Network Management System	Software for managing networks built with Paradyne GranDSLAM or Bitstorm products.	Used as a stand-alone system or part of a larger system to manage all the Paradyne GranDSLAM or Bitstorm products deployed in a network.

Broadband Solutions

Broadband DSL

The multiservices system includes DSLAM termination equipment, which provides aggregation of services in the central office, and an array of customer premises equipment, which extend various broadband access services over the local loop to the customer premise. The system supports a range of broadband multimedia access services, such as business and residential Internet access, remote local area networks access and virtual private network access at symmetric rates (similar transmission rate for sending and receiving data over the same line) of up to 2 Mbps and asymmetric rates (varying transmission rates for sending and receiving data over the same line) of up to 12 Mbps. It also supports Frame Relay, ATM and T1/E1 channelized access to the wide area networks. With channelized access, customers can send and receive voice or data traffic on different channels. For example, channels 1-12 could be used to send data while channels 13-24 could be used to send voice. In addition to supporting high density configurations for central office applications, the efficient packaging for lower density market entry applications allows products to be deployed in a variety of private copper networks, including multi-dwelling-units for both business and residential access services, universities, hotels, and government campus private networks.

Our primary customers for our DSL products are CLECs, incumbent carriers and other NSPs. Our DSL customer base is expanding in international markets through deregulation and the rapidly growing interest in developing countries for broadband DSL. Our products are easily installed, scaleable and operate over long loops, which enhance an NSP s ability to deploy them quickly and service new customers. Additionally, these qualities allow our NSP customers to supply symmetric services to their business customers and asymmetric services to their consumer customers or they may want to use ATM on some backbone connections and Frame Relay on other backbone connections. The system can be configured, monitored and controlled through our GrandView network management system which provides complete end-to-end management and reporting coverage of the entire broadband DSL access solution.

Our DSL products consist of two major product categories, DSLAMs and customer premises equipment.

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Multiservices GranDSLAMs: A DSLAM is a DSL access multiplexer installed in NSPs central offices and private copper networks that provides termination and aggregation of multiple DSL lines and associated services protocol translation. Paradyne s Multiservices DSLAMs are called the GranDSLAM. The GranDSLAM systems consist of network equipment building standard (NEBS) certified chassis and associated DSL line cards, and an aggregation system with a variety of wide area network options and a standards based network management system. Network equipment building standard certification is generally necessary in order for a product to be installed in the central office of an NSP. Key features of a GranDSLAM system include:

- the ability to support line cards that support between four and 24 ports per card;
- multiple DSLAM configurations, which include our highly-compact, stackable DSLAM supporting as few as 24 DSL ports which is scalable to 48 ports and our high-density DSLAM supporting as many as 432 lines per shelf;
- the ability to support a range of voice and data applications that operate over packet technologies and channelized access technologies;
- a broad set of available interfaces to consolidate traffic onto a backbone network. These interfaces operate from between 1.544 Mbps up to 155 Mbps in asynchronous transfer mode (ATM) interfaces and up to gigabit speeds to support Ethernet interfaces. These interfaces include: 10base-T, 100base-T, 1000base-T Ethernet interfaces, and T1 E1, NxT1, DS-3, E3, STM-1 and OC3 ATM interfaces.
- a simple network management protocol compliant distributed network management architecture that supports efficient network management required for large NSP network deployments.

DSL customer premises equipment: DSL customer premises equipment terminates DSL access services at the customer premise for connectivity to local area networks, personal computers, routers and other voice and data equipment. Customer premises equipment operates at a variety of transmission speeds and loop lengths to meet the needs of our customers. Customer premises equipment and associated DSLAM line cards support multiple DSL technologies. In addition to developing our own DSL customer premises equipment, we partner with third parties for customer premise equipment and interoperability with other industry leaders to provide our customers with a broader range of endpoints and expand the total service opportunities supported by our system.

BitStorm. As a result of the Elastic Networks acquisition in March 2002, we now develop, manufacture and distribute the BitStorm family of products. The BitStorm system includes (1) The BitStorm 2400 IP DSLAM, the BitStorm 2600 and the BitStorm 4800 IP DSLAM, which provide aggregation of services in the central office or the building wiring closet, and (2) StormPort or ADSL customer premises equipment, which extends broadband access services over the local loop to the customer premise. The system supports a range of broadband multimedia access services, such as business and residential Internet access, remote local area networks access and virtual private network access at symmetric rates (similar transmission rate for sending and receiving data over the same line) of up to 10 Mbps or asymmetric rates up to 12 Mbps. BitStorm products are ideal for multi-dwelling units for both business and residential access services, universities, hotels, and government campus private networks.

Our primary customers for BitStorm products are in-building network providers, hotel and hospitality network providers and incumbent carriers and other NSPs. Some of our BitStorm products use our patented EtherLoop technology, which is easily installed, scaleable and operates over long loops, which enhance an NSP s ability to deploy them quickly and service new customer applications. Additionally, EtherLoop can deliver bandwidth up to 10 Mbps over relatively short loops, which enables high-quality video services, Internet access and baseband voice to be simultaneously offered. The BitStorm system can be configured, monitored and controlled through our GrandView network management system, which provides complete end-to-end management and reporting coverage of the entire broadband access solution.

Our BitStorm products consist of two major product categories, a selection of DSLAMs and customer premises equipment.

BitStorm 2400 IP DSLAM: The BitStorm 2400 IP DSLAM is a compact, 1-U (one rack unit in height) device that incorporates 24 dedicated EtherLoop ports, and a high-speed aggregation uplink for IP networks. As subscriber requirements grow, units may be stacked to provide as many as 192 ports. Key features of a BitStorm 2400 IP DSLAM system include:

- the ability to support up to 24 EtherLoop ports;
- the ability to support data applications that operate over packet technologies; and
- a simple network management protocol compliant distributed network management architecture that supports efficient network management required for large or small network deployments.

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BitStorm 2600 IP DSLAM: The BitStorm 2600 IP DSLAM is a compact, 1-U device that incorporates either 24 dedicated ADSL ports, and a high-speed aggregation uplink for IP networks. As subscriber requirements grow, units may be stacked to provide as many as 192 ports. Key features of a BitStorm 2600 IP DSLAM system include:

- the ability to support up to 24 ADSL ports;
- the ability to connect to a wide range of industry standard ADSL endpoints;
- the ability to support a range of voice and data applications that operate over packet technologies; and
- a simple network management protocol compliant distributed network management architecture that supports efficient network management required for large or small network deployments.

BitStorm 4800 IP DSLAM: The BitStorm 4800 IP DSLAM is a compact, 1-U device that incorporates either 24 or 48 dedicated ADSL ports, and a high-speed aggregation uplink for IP networks. As subscriber requirements grow, units may be stacked to provide as many as 384 ports. Key features of a BitStorm 4800 IP DSLAM system include:

- the ability to support up to 24 or 48 ADSL ports;
- the ability to connect to a wide range of industry standard ADSL endpoints;
- the ability to support a range of voice and data applications that operate over packet technologies; and
- a simple network management protocol compliant distributed network management architecture that supports efficient network management required for large or small network deployments.

StormPort customer premises equipment: BitStorm customer premises equipment terminates DSL access services at the customer premise for connectivity to local area networks, personal computers, routers and other voice and data equipment. BitStorm StormPort customer premises equipment operates at a variety of transmission speeds and loop lengths to meet the needs of our customers. StormPort customer premises equipment and associated DSLAM line cards support our patented EtherLoop technology, which enables speeds of up to 10 Mbps across the standard copper loop.

DSL technology innovation: We expect to continue to implement multiple DSL technologies in our products, and, consistent with market requirements, to implement additional DSL technologies as they become available and accepted in the market. While we purchase some of the DSL technologies implemented in the GranDSLAM and customer premises equipment, our ReachDSL product represents a unique DSL technology developed and implemented by us that does not require a telephone line splitter and works over very long loops. The primary advantages of ReachDSL technology are:

- simultaneous voice and data capability over copper loops up to 30,000 feet (compared with ADSL which typically operates up to 17,000 feet) unaffected by multiple terminations of copper loop, commonly known as bridged taps, which provides for ease of

customer installation and eliminates need for rewiring at the customer premise; and

its ability to provide high bandwidth service in an impaired copper environment.

The ReachDSL product is well suited for line sharing and spectrum unbundling applications as specified by the Federal Communications Commission on December 9, 1999. ReachDSL can be operated in line sharing configurations where the DSL service is delivered over the same local line that is delivering basic telephone service. In addition, ReachDSL has demonstrated an ability to operate consistently over a wider range of loop conditions and loop lengths than ADSL based products. We believe ReachDSL provides a competitive advantage for competitive local exchange carriers and incumbent carriers in this application. Additionally, we believe ReachDSL offers unique capabilities for the incumbent telephone companies in developing countries, where the copper infrastructure is particularly challenging for ADSL. The unique performance characteristics of ReachDSL position us well for future business in developing countries around the world.

We expect to continue to implement multiple DSL technologies in our BitStorm products consistent with market demand and new technological innovations. Our BitStorm EtherLoop product works at high speeds over short loops and at slower, but still broadband speeds over very long loops. The primary advantages of EtherLoop technology are:

service up to 10 megabits over copper loops up to 5,000-6,000 feet, which enables simultaneous high-speed video services in addition to internet access and baseband voice; and

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operation over copper loops up to 24,000 feet unaffected by bridged taps and other typical loop impairments, similar to ReachDSL.

Broadband SLM

iMarc. Our iMarc system is an innovative Service Level Management system, or SLM, for Frame Relay, Frame Relay/ATM, and IP networks. The iMarc system consists of customer premises equipment, NSP equipment and network management software to monitor and measure network performance across public Frame Relay networks. The iMarc system is available with service level verification features that measure performance and store the results for retrieval by our OpenLane network management system. The storage and data retrieval mechanisms have been implemented according to recognized industry standards, which makes the iMarc system compatible and interoperable with many other systems that business customers or NSPs may have installed. The iMarc network access units also provide extensive non-disruptive diagnostic and testing capabilities along with standard access functionality, to give enterprise customers or service providers a complete managed solution.

Key features of our iMarc system include:

extensive performance management with diagnostic and control capabilities that are used to identify and resolve problems quickly without disrupting the network;

standards based measurements that allow customers to measure data throughput both within and above their committed information rates;

availability in a range of conventional network access speeds, from 64 Kbps up to T3;

additional availability in SDSL and G.SHDSL based configurations to enable Frame Relay services over DSL access networks;

non-disruptive management that can be accessed over the Frame Relay network or through an integrated dial modem;

ability to install and diagnose without the presence of a router or a costly technician visit to the customer site;

dial backup through integrated service digital network to protect against network failures;

network to network interface for SLM across multiple Frame Relay networks;