

As filed with the Securities and Exchange Commission on January 15, 2004

Registration No. 333-110234

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Amendment No. 2
to
FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

PRIMUS TELECOMMUNICATIONS GROUP, INCORPORATED

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

54-1708481

(I.R.S. Employer Identification No.)

**1700 Old Meadow Road, Suite 300
McLean, Virginia 22102
(703) 902-2800**

(Address, including zip code, and telephone number, including area code of Registrant's principal executive offices)

**K. Paul Singh
Chairman, President and Chief Executive Officer
Primus Telecommunications Group, Incorporated
1700 Old Meadow Road, Suite 300
McLean, Virginia 22102
(703) 902-2800**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

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Approximate date of commencement of proposed sale to the public: As soon as practicable after this Registration Statement becomes effective.

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box.

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(a) OF THE SECURITIES ACT OF 1933 OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

The information contained in this prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

Subject to Completion. Dated January 15, 2004

PROSPECTUS

22,616,990 Shares

Primus Telecommunications Group, Incorporated

Common Stock

The selling security holders identified in this prospectus are selling up to an aggregate of 22,616,990 shares of Primus Telecommunications Group, Incorporated common stock. Primus will not receive any of the proceeds from the sale by the selling security holders.

Certain selling security holders' shares are subject to the terms of a lock-up agreement with Primus, which will generally prohibit the resale of 13,540,008 of such shares through July 30, 2004. See "Plan of Distribution — Lock Up Agreements."

Primus common stock is listed on the Nasdaq National Market under the symbol PRTL. The last reported sales price of the common stock, as reported on the Nasdaq National Market on January 14, 2004, was \$12.61 per share.

Investing in the common stock involves a high degree of risk. See Risk Factors, beginning on page 6.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is January , 2004

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SUMMARY

This summary highlights some of the information in this prospectus. Because this is only a summary, it does not contain all of the information that may be important to you. To understand this prospectus, the common stock and our business, you should read the entire prospectus, particularly "Risk Factors" and the consolidated financial statements and related notes incorporated by reference into this prospectus.

PRIMUS

Primus Telecommunications Group, Incorporated is a global, facilities-based telecommunications services provider offering international and domestic voice, Internet and data services to business and residential retail customers and other carriers located primarily in the United States, Australia, Canada, the United Kingdom and western Europe. Our focus is to service the demand for high quality, competitively priced international communications services that is being driven by the globalization of the world's economies, the worldwide trend toward telecommunications deregulation and the growth of Internet and data traffic.

We target customers with significant telecommunications needs, including small- and medium-sized enterprises, multinational corporations, residential customers, particularly ethnic customers, and other telecommunications carriers and resellers. We provide services over our global network, which consists of:

- 19 domestic and international gateway switching systems (the hardware/software devices that direct the voice traffic across the network) throughout North America, Australia, Europe and Japan;
- approximately 250 connection points to our network, or points of presence, within our principal service regions and other markets;

- undersea and land-based fiber optic transmission lines systems that we own or lease and that carry voice traffic across the network; and
- global network and data centers that use a high-bandwidth network standard and Internet-based protocol to connect with the network (ATM + IP).

We offer our customers a wide range of services, including:

- international and domestic long distance services;
- voice-over-Internet protocol (VoIP) services;
- prepaid calling cards (including services which allow transmission of mobile voice traffic over our land-based network), toll-free services and reorigination services;
- dial-up, dedicated and high-speed Internet access;
- local services, primarily in Australia and Canada;
- ATM+IP broadband services; and
- managed and shared Web hosting services and applications.

The services we offer can be characterized as three main products:

- voice;
- data/Internet; and
- voice-over-Internet protocol services.

Summary net revenue, including percentage break-down, information with respect to our products, by operating segment and geographic region are as follows (in thousands):

Net Revenue by Product Segment

	Year Ended December 31						Nine Months Ended September 30			
	2000	%	2001	%	2002	%	2002	%	2003	%
Voice	\$ 1,077,728	90%	\$ 930,635	86%	\$ 854,840	83%	\$ 629,122	83%	\$ 803,572	85%
Data/Internet	\$ 99,696	8%	\$ 112,836	10%	\$ 111,416	11%	\$ 85,041	11%	\$ 93,711	10%
VoIP	\$ 21,998	2%	\$ 39,004	4%	\$ 57,800	6%	\$ 42,281	6%	\$ 51,665	5%
Total Net Revenue	\$ 1,199,422	100%	\$ 1,082,475	100%	\$ 1,024,056	100%	\$ 756,444	100%	\$ 948,948	100%

Net Revenue by Geographic Segment

Net Revenue	Year Ended December 31						Nine Months Ended September 30			
	2000	%	2001	%	2002	%	2002	%	2003	%
North America										
United States	\$ 343,027	28%	\$ 271,588	25%	\$ 212,399	20%	\$ 153,427	20%	\$ 214,121	23%
Canada	\$ 179,372	15%	\$ 172,647	16%	\$ 163,428	16%	\$ 122,241	16%	\$ 152,715	16%
Other	\$ 10,628	1%	\$ 8,876	1%	\$ 5,742	1%	\$ 4,971	1%	\$ 2,711	0%
Total North America	\$ 533,027	44%	\$ 453,111	42%	\$ 381,569	37%	\$ 280,639	37%	\$ 369,547	39%
Europe										
United Kingdom	\$ 159,683	13%	\$ 141,297	13%	\$ 139,480	14%	\$ 105,656	14%	\$ 107,117	11%
Germany	\$ 98,053	8%	\$ 99,189	9%	\$ 63,767	6%	\$ 50,790	7%	\$ 40,814	4%
Netherlands	\$ 32,882	3%	\$ 42,824	4%	\$ 79,467	8%	\$ 49,716	7%	\$ 116,074	12%
Other	\$ 68,368	6%	\$ 73,737	7%	\$ 80,955	8%	\$ 63,201	8%	\$ 58,422	6%
Total Europe	\$ 358,986	30%	\$ 357,047	33%	\$ 363,669	36%	\$ 269,363	36%	\$ 322,427	33%
Asia-Pacific										
Australia	\$ 283,311	24%	\$ 248,173	23%	\$ 259,459	25%	\$ 190,210	25%	\$ 242,638	26%
Other	\$ 24,098	2%	\$ 24,144	2%	\$ 19,359	2%	\$ 16,232	2%	\$ 14,336	2%

Total Asia-Pacific	\$	307,409	26%	\$	272,317	25%	\$	278,818	27%	\$	206,442	27%	\$	256,974	28%
Total Net Revenue	\$	1,199,422	100%	\$	1,082,475	100%	\$	1,024,056	100%	\$	756,444	100%	\$	948,948	100%

As of September 30, 2003, we had an accumulated deficit of \$(702.8) million and a stockholder's deficit balance of \$(118.3) million. We incurred net losses of \$(63.6) million in 1998, \$(112.7) million in 1999, \$(174.7) million in 2000, \$(306.2) million in 2001 and \$(34.6) million in 2002.

We are a Delaware corporation with our principal executive offices located at 1700 Old Meadow Road, McLean, Virginia 22102. Our telephone number is (703) 902-2800 and our web site address is www.primustel.com. We make available free of charge through the "Investors" section of our web site our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and all amendments to those reports as soon as reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission. We include our web site address in this prospectus only as an inactive textual reference and do not intend it to be an active link to our web site.

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RECENT DEVELOPMENTS

On January 13, 2004, we announced that our wholly owned subsidiary Primus Telecommunications Holding, Inc., or PTHI, had entered into an agreement to sell \$240 million aggregate principal amount of its 8% senior notes due 2014 pursuant to Rule144A and Regulation S under the Securities Act of 1933. We have agreed to fully and unconditionally guarantee these notes. Subject to the satisfaction of certain customary conditions, the offering is expected to close on or about January 16, 2004.

On the issue date of the new notes we will transfer to PTHI by way of a capital contribution all of our net intercompany receivables and all of the capital stock of all of our direct subsidiaries other than PTHI, except for those subsidiaries, the transfer of whose capital stock will require the approval or consent of, or a filing with, state telecommunications regulatory authorities in the United States. We refer to those subsidiaries, the transfer of which would require such approval, consent or filing, as the contingently transferable subsidiaries. The contingently transferable subsidiaries will consist primarily of our U.S. subsidiaries, and the subsidiaries that will be transferred to PTHI on the issue date of the new notes will consist primarily of our non-U.S. subsidiaries. Under the indenture governing the new notes, we will be obligated to use our best efforts to complete the transfer to PTHI of the capital stock of the contingently transferable subsidiaries in accordance with applicable law as soon as practicable after the issue date of the new notes.

Until we have completed this transfer, our guarantee of the new notes will be secured by a pledge of the capital stock of the contingently transferable subsidiaries. The pledged capital stock will also equally and ratably secure our 12³/₄% senior notes due 2009 and possibly any amounts outstanding under our future credit facilities. We will continue to directly own PTHI and, upon the transfer of the capital stock of all of the contingently transferable subsidiaries to PTHI, PTHI will own all of our other subsidiaries. When we have completed the transfer, the pledge of the capital stock of the contingently transferable subsidiaries will automatically be released.

SECURITIES TO BE OFFERED

This prospectus relates to the offer and sale by the selling security holders referenced in this prospectus of up to an aggregate of 22,616,990 shares of our common stock. Certain selling security holders' shares are subject to the terms of a lock-up agreement with Primus, which will generally prohibit the resale of 13,540,008 of such shares through July 30, 2004. For further details regarding how these shares were acquired, please see "Selling Security Holders."

You should carefully consider the information set forth under "Risk Factors" in this prospectus beginning on page 6 and all other information included or incorporated by reference in this prospectus before deciding to purchase any common stock.

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RISK FACTORS

Any purchase of the shares of our common stock involves a high degree of risk. You should consider carefully the following information about these risks, together with the information under the caption "Forward-Looking Information" and the other information contained in or incorporated by reference to this prospectus before you decide to buy common stock.

Risks Related to Our Business

Our high level of debt may adversely affect our financial and operating flexibility.

We currently have substantial indebtedness and may incur additional indebtedness in the future. As of September 30, 2003, our total consolidated indebtedness (including obligations under capital leases and equipment financings) was \$599.0 million. The terms of certain of our outstanding indebtedness limit, but do not prohibit, the incurrence of additional indebtedness.

The level of our indebtedness:

- could make it difficult for us to make required payments of principal and interest on our outstanding debt;
- could limit our ability to obtain any necessary financing in the future for working capital, capital expenditures, debt service requirements or other purposes;

- requires that a substantial portion of our cash flow, if any, be dedicated to the payment of principal and interest on our indebtedness and other obligations and, accordingly, such cash flow will not be available for use in our business;
- could limit our flexibility in planning for, or reacting to, changes in our business;
- results in us being more highly leveraged than many of our competitors, which may place us at a competitive disadvantage;
- could discourage potential acquirors from making offers to acquire us; and
- will make us more vulnerable in the event of a downturn in our business.

We have experienced historical, and may experience future, operating losses and net losses which may hinder our ability to meet our debt service or working capital requirements.

As of September 30, 2003, we had an accumulated deficit of \$(702.8) million and a stockholder's deficit balance of \$(118.3) million. We incurred net losses of \$(63.6) million in 1998, \$(112.7) million in 1999, \$(174.7) million in 2000, \$(306.2) million in 2001 and \$(34.6) million in 2002. During the nine months ended September 30, 2003, we recognized net income of \$35.4 million, a substantial portion of which can be attributed to foreign currency exchange rates that favorably impacted our results. Our recent net income should not necessarily be considered to be indicative of future net income and our results could be adversely affected by currency, competitive or technology developments described in greater detail in succeeding risk factors. As a result, we cannot assure you that our net income will grow or be sustained in future periods. If we cannot sustain net income, or operating income, we may not be able to meet our debt service or working capital requirements. These developments could have a material adverse impact on the trading prices of our common stock.

Because a significant portion of our business is conducted outside the United States, fluctuations in foreign currency exchange rates could adversely affect our results of operations.

A significant portion of our net revenue is derived from sales and operations outside the United States. The reporting currency for our consolidated financial statements is the United States dollar

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(USD). The local currency of each country is the functional currency for each of our respective entities operating in that country. In the future, we expect to continue to derive a significant portion of our net revenue and incur a significant portion of our operating costs outside the United States, and changes in exchange rates have had and may continue to have a significant, and potentially adverse, effect on our results of operations. Our primary risk of loss regarding foreign currency exchange rate risk is caused by fluctuations in the following exchange rates: USD/Australian dollar (AUD), USD/Canadian dollar (CAD), USD/British pound (GBP), and USD/Euro dollar (EUR). In the nine months ended September 30, 2003, the USD weakened compared to the AUD, CAD, GBP and EUR. As a result, our revenue of the subsidiaries whose local currency is the AUD, CAD and EUR increased 9%, 13% and 16% in local currency compared to the nine months ended September 30, 2002, but increased 28%, 25% and 40% in USD, respectively. Our revenue of the subsidiaries whose local currency is the GBP decreased 7% in local currency from the nine months ended September 30, 2002, but increased 1% in USD. Due to the large percentage of our operations conducted outside of the United States, strengthening of the USD relative to one or more of the foregoing currencies could have an adverse impact on our future results of operations. We historically have not engaged in hedging transactions and do not currently contemplate engaging in hedging transactions to mitigate foreign exchange risks.

In addition, the operations of affiliates and subsidiaries in foreign countries have been funded with investments and other advances denominated in foreign currencies. Historically, such investments and advances have been long-term in nature, and we accounted for any adjustments resulting from currency translation as a charge or credit to "accumulated other comprehensive income (loss)" within the stockholders' deficit section of our consolidated balance sheets. In 2002, agreements with certain subsidiaries were put in place for repayment of a portion of the investments and advances made to the subsidiaries. As we anticipate repayment in the foreseeable future of these amounts, we recognize the unrealized gains and losses in foreign currency transaction gain (loss) on the consolidated statements of operations, and depending upon changes in future currency rates, such gains or losses could have a significant, and potentially adverse, effect on our results of operations.

Given our limited experience with, and the intense competition in, the Internet connectivity and data business, we may not be able to successfully operate or expand this part of our business.

Since 1999, we have been targeting businesses and residential customers for Internet and data services through the Primus brand and other businesses. We have been expanding and intend to continue to expand our offering of Internet, data and VoIP services worldwide. We anticipate offering a broad range of Internet protocol-based data and voice communications over our global broadband ATM+IP network. Currently, we provide Internet access services to business and residential customers in the United States, Australia, Canada, Japan, India, Brazil, and Spain, and offer Internet transmission services in the Indian Ocean/Southeast Asia regions through our earth stations in India.

Our experience with these services and these markets is limited. Furthermore, the market for dial-up and broadband Internet connectivity and related services is extremely competitive. Our primary competitors include incumbent operators, cable companies and other Internet service providers (ISPs) that have a significant national or international presence. Many of these operators have substantially greater resources, capital and operational experience than we do. We also expect we will experience increased competition from traditional telecommunications carriers and cable companies that expand into the market for Internet services. Therefore, our future operations involving these services may not generate operating or net income on a predictable basis and we may not be able to successfully expand this part of our business.

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If we do not operate our network efficiently and generate additional traffic, we may not be able to achieve our operational growth goals.

Our long-term success depends on our ability to design, implement, operate, manage and maintain a reliable and cost-effective network. In addition, we rely on third parties to enable us to expand and manage our global network. If we fail to generate additional traffic on our network, if we experience technical or logistical impediments to our ability to migrate traffic onto our network, or if we experience difficulties with our third party providers, we may not achieve desired economies of scale or otherwise be successful in growing our business.

Our potential future growth may place a significant strain on our resources and, if not managed effectively, could result in operational inefficiencies and other difficulties.

Our continued growth and expansion may place a significant strain on our management, operational and financial resources, and increase demand on our systems and controls. We have expanded our retail operations through our recent acquisition of the small- and medium-sized enterprise (SME) voice customer base of Cable & Wireless (C&W) in the United States and the expansion of our prepaid calling card product, particularly in Europe. To manage our growth effectively, we must continue to implement and improve our operational and financial systems and controls, purchase and utilize other transmission facilities, and expand, train and manage our employee base. If we inaccurately forecast the movement of traffic onto our network, we could have insufficient or excessive transmission facilities and disproportionate fixed expenses. As we proceed with our development, operational difficulties could arise from additional demand placed on our customer support, billing and management information systems, on our support, sales and marketing and administrative resources and on our network infrastructure. For instance, we may encounter delays or cost-overruns or suffer other adverse consequences in implementing new systems when required. In addition, our operating and financial control systems and infrastructure could be inadequate to ensure timely and accurate financial reporting.

The integration of our recent and future acquisitions ultimately may not provide the benefits originally anticipated by management and may distract the attention of our personnel from the operation of our business.

We strive to increase the volume of voice and data traffic that we carry over our existing global network in order to reduce transmission costs and other operating costs as a percentage of net revenue, improve gross margins, improve service quality and enhance our ability to introduce new products and services. During 2002 and 2003, to further this growth strategy, we purchased the U.S.-based SME voice customers of C&W and made small purchases of businesses and assets to complement our Canadian-based operations. Future acquisitions may be pursued to further our strategic objectives, including those described above.

Acquisitions of businesses and customer lists, a key element of our historical growth strategy, involve operational risks, including the possibility that an acquisition does not ultimately provide the benefits originally anticipated by management. Moreover, there can be no assurance that we will be successful in:

- identifying attractive acquisition candidates;
- completing and financing additional acquisitions on favorable terms; or
- integrating the acquired business or assets into our own.

There may be difficulty in integrating the service offerings, distribution channels and networks gained through acquisitions with our own. Successful integration of operations and technologies requires the dedication of management and other personnel, which may distract their attention from

the day-to-day business, the development or acquisition of new technologies, and the pursuit of other business acquisition opportunities, and there can be no assurance that successful integration will occur in light of these factors.

We experience intense domestic and international competition which may adversely affect our results of operations and financial condition.

The long distance telecommunications and data industry is intensely competitive, with relatively limited barriers to entry in the more deregulated countries where we operate and with numerous entities competing for the same customers. Recent and pending deregulation in various countries may encourage new entrants to compete, including ISPs, cable television companies and utilities. For example, the United States and many other countries have committed to open their telecommunications markets to competition pursuant to an agreement under the World Trade Organization which began on January 1, 1998. Further, in the United States, as certain conditions have been met under the Telecommunications Act of 1996, the regional Bell operating companies (RBOCs) have been allowed to enter the long distance market, AT&T, MCI and other long distance carriers have been allowed to enter the local telephone services market, and any entity, including cable television companies and utilities, have been allowed to enter both the local service and long distance telecommunications markets. Moreover, the rapid enhancement of VoIP technology may result in increasing levels of traditional domestic and international voice long distance traffic being transmitted over the Internet, as opposed to traditional telecommunication networks such as ours. Currently, there are significant cost savings associated with carrying voice traffic employing VoIP technology, as compared to carrying calls over traditional networks. Thus, there exists the possibility that the price of traditional long distance voice services will decrease in order to be competitive with VoIP. Additionally, competition is expected to be intense to switch customers to VoIP product offerings, as is evidenced by numerous recent market announcements in the U.S. and internationally from industry leaders and competitive carriers concerning significant VoIP initiatives. Our ability to effectively retain our existing customer base and generate new customers, either through our network or our own VoIP offerings, may be adversely affected by accelerated competition arising as a result of VoIP initiatives. As competition intensifies as a result of deregulatory, market or technological developments, our results of operations and financial condition could be adversely affected.

We are substantially smaller than our major competitors, whose marketing and pricing decisions, and relative size advantage, could adversely affect our ability to attract and retain customers and could cause significant pricing pressures that could adversely affect our net revenues per minute, results of operations and financial condition.

The long distance telecommunications and data industry is significantly influenced by the marketing and pricing decisions of the larger long distance industry and Internet access business participants. Our competitors in our core markets include, among others: AT&T, MCI, Sprint, the RBOCs and the major wireless carriers in the United States; Telstra, SingTel Optus and Telecom New Zealand in Australia; Telus, BCE, CallNet and Allstream (formerly AT&T Canada) in Canada; and British Telecommunications plc. (BT), Cable & Wireless UK, MCI, Colt Telecom, Energis and the major wireless carriers in the United Kingdom. Customers frequently change long distance providers and ISPs in response to the offering of lower rates or promotional incentives by competitors. Generally, customers can switch carriers at any time. Competition in all of our markets is likely to remain intense, or even increase in intensity and, as deregulatory influences are experienced in markets outside the United States, competition in non-United States markets is likely to become similar to the intense competition in the United States.

Many of our competitors are significantly larger than we are and have:

- substantially greater financial, technical and marketing resources;

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- larger networks;
 - a broader portfolio of service offerings;
 - greater control over transmission lines;
 - stronger name recognition and customer loyalty;
 - long-standing relationships with our target customers; and
 - lower leverage ratios.

As a result, our ability to attract and retain customers may be adversely affected by the actions of our larger competitors.

Many of our competitors enjoy economies of scale that result in low cost structures for transmission and related costs that could cause significant pricing pressures within the industry. Several long distance carriers in the United States, including most recently, AT&T, MCI, Sprint, the RBOCs and the major wireless carriers, have introduced pricing and product bundling strategies that provide for fixed, low rates for calls within the United States. This strategy could have a material adverse effect on our net revenue per minute, results of operations and financial condition if increases in telecommunications usage and potential cost declines do not result in, or are insufficient to offset the effects of, such price decreases. Many companies emerging out of bankruptcy might benefit from a lower cost structure and might apply pricing pressure within the industry to gain market share. We compete on the basis of price, particularly with respect to our sales to other carriers, and also on the basis of customer service and our ability to provide a variety of telecommunications products and services. If such price pressures materialize, we may not be able to compete successfully in the future.

A deterioration in our relationships with facilities-based carriers could have a material adverse effect upon our cost structure, service quality, network diversity, results of operations and financial condition.

We primarily connect our customers' telephone calls through transmission lines that we lease under a variety of arrangements with other facilities-based long distance carriers. Many of these carriers are, or may become, our competitors. Our ability to maintain and expand our business depends on our ability to maintain favorable relationships with the facilities-based carriers from which we lease transmission lines. If our relationship with one or more of these carriers were to deteriorate or terminate, it could have a material adverse effect upon our cost structure, service quality, network diversity, results of operations and financial condition. Moreover, we lease transmission lines from some vendors that currently are subject to tariff controls and other price constraints, which in the future may be changed.

Uncertainties and risks associated with international markets could adversely impact our international operations.

We have significant international operations and, as of September 30, 2003, derive more than 75% of our revenues by providing services outside of the United States. In international markets, we are smaller than the principal or incumbent telecommunications carrier that operates in each of the foreign jurisdictions where we operate. In these markets, incumbent carriers are likely to:

- control access to, and pricing of, the local networks;
- enjoy better brand recognition and brand and customer loyalty; and
- have significant operational economies of scale, including a larger backbone network and more correspondent agreements.

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Moreover, the incumbent carrier may take many months to allow competitors, including us, to interconnect to its switches within its territory. There can be no assurance that we will be able to:

- obtain the permits and operating licenses required for us to operate;
- obtain access to local transmission facilities on economically acceptable terms; or
- market services in international markets.

In addition, operating in international markets generally involves additional risks, including:

- unexpected changes in regulatory requirements, tariffs, customs, duties and other trade barriers;
- difficulties in staffing and managing foreign operations;
- problems in collecting accounts receivable;

- political risks;
- fluctuations in currency exchange rates;
- restrictions associated with the repatriation of funds;
- technology export and import restrictions; and
- seasonal reductions in business activity.

These general risks present potentially significant risk to us in the aggregate because we derive such a large percentage of our revenues from outside of the United States.

Our ability to operate and grow our international operations successfully could be adversely impacted by these risks and uncertainties.

Rapid changes in the telecommunications industry could adversely affect our competitiveness and our financial results.

The telecommunications industry is changing rapidly due to:

- deregulation;
- privatization;
- technological improvements;
- availability of alternative services such as wireless and VoIP; and
- the globalization of the world's economies.

In addition, alternative services to traditional fixed wirelines services, such as wireless and VoIP services, are a substantial competitive threat. If we do not adjust our contemplated plan of development to meet changing market conditions, we may not be able to compete effectively. The telecommunications industry is marked by the introduction of new product and service offerings and technological improvements. Achieving successful financial results will depend on our ability to:

- anticipate, assess and adapt to rapid technological changes; and
- offer, on a timely and cost-effective basis, services that meet evolving industry standards.

If we do not anticipate, assess or adapt to such technological changes at a competitive price, maintain competitive services or obtain new technologies on a timely basis or on satisfactory terms our financial results may be materially and adversely affected.

Terrorist attacks and other acts of violence or war may affect the market on which our securities trade, the markets in which we operate, our operations and our profitability.

We are a U.S.-based corporation with significant international operations. Terrorist attacks, such as the attacks that occurred in New York and Washington, D.C. on September 11, 2001, and subsequent worldwide terrorist actions, including apparent action against companies operating abroad, may negatively affect our operations and your investment in Primus. We cannot assure you that there will not be further terrorist attacks that impact our employees, network facilities or support systems, either in the United States or in any of the other countries in which we operate. Certain losses resulting from these types of events are uninsurable and others are not likely to be covered by our insurance.

Terrorist attacks may directly impact our business operations through damage or harm to our employees, network facilities or support systems, increased security costs or the general curtailment of voice or data traffic. Any of these events could result in increased volatility in or damage to Primus and the United States and worldwide financial markets and economies. They also could result in a continuation of the current economic uncertainty in the United States or abroad, which could have a material adverse effect on our operating results and financial condition.

We are subject to potential adverse effects of regulation which may have a material adverse impact on our competitive position, growth and financial performance.

Our operations are subject to constantly changing regulation. There can be no assurance that future regulatory changes will not have a material adverse effect on us, or that regulators or third parties will not raise material issues with regard to our compliance or noncompliance with applicable regulations, any of which could have a material adverse effect upon us. As a multinational telecommunications company, we are subject to varying degrees of regulation in each of the jurisdictions in which we provide our services. Local laws and regulations, and the interpretation of such laws and regulations, differ significantly among the jurisdictions in which we operate. Enforcement and interpretations of these laws and regulations can be unpredictable and are often subject to the informal views of government officials. Recent widespread regulatory changes in the United Kingdom and potential future regulatory, judicial, legislative and government policy changes in other jurisdictions where we operate could have a material adverse effect on us. Domestic or international regulators or third parties may raise material issues with regard to our compliance or noncompliance with applicable regulations, and therefore may have a material adverse impact on our competitive position, growth and financial performance.

Regulatory considerations that affect or limit our business include:

- United States common carrier requirements not to unreasonably discriminate among customers and to charge just and reasonable rates;
- general uncertainty regarding the future regulatory classification of VoIP telephony; if regulators decide that VoIP is a regulated telecommunications service, our VoIP services may be subject to burdensome regulatory requirements and fees, we may be obligated to pay carriers additional interconnection fees and our operating costs may increase;
- general changes in access charges, universal service and regulatory fee payments would affect our cost of providing long distance services; and
- general changes in access charges and contribution payments could adversely affect our cost of providing long distance wireless and other services.

Any adverse developments implicating the foregoing could materially adversely affect our business, financial condition, results of operations and prospects.

Risks Relating to an Investment in our Common Stock

Future sales of our common stock in the public market could create selling pressure on our common stock and lower our stock price.

Significant future sales of our common stock in the public market, including in particular the shares offered under this prospectus and the Note Registration Statement (defined below), could lower our stock price and impair our ability to raise funds in new stock offerings.

A majority of the shares of common stock that are offered by this prospectus first became eligible for resale through Rule 144 under the Securities Act on December 31, 2003; 5,000,000 shares of common stock that are offered by this prospectus first become eligible for resale through Rule 144 on November 25, 2004; and the remaining portion of the shares of common stock that are offered by this prospectus first become eligible for resale through Rule 144 on March 31, 2004, in each case subject to applicable volume limitations and other restrictions under Rule 144. In addition, the holders of the 3³/₄% convertible senior notes due 2010 (the "2010 Convertible Notes") have a registration statement covering the notes and common stock (the "Note Registration Statement") that may be acquired upon conversion of the 2010 Convertible Notes. The Note Registration Statement was effective under the Securities Act as of the date of this prospectus. Sales of a substantial amount of common stock in the public market, or the perception that these sales may occur, could create selling pressure on our common stock and adversely affect the market price of our common stock prevailing from time to time in the public market and could impair our ability to raise funds in additional stock offerings.

Future issuances of common stock could adversely impact our earnings per share and create selling pressure on our common stock, which could adversely affect our stock price.

As of December 15, 2003, we had 88,443,258 outstanding shares of our common stock that were subject to dilution by;

- 14,157,925 shares of common stock, subject to potential adjustment issuable upon conversion of our 2010 Convertible Notes;
- 7,388,119 shares of common stock issuable upon the exercise of outstanding stock options;
- 1,428,342 shares of common stock issuable upon the conversion of our 5³/₄% convertible subordinated debentures due 2007 (the "2007 Convertible Notes"); and
- 330,097 shares of common stock issuable upon the exercise of outstanding warrants issued in connection with the sale of our 11³/₄% senior notes due 2004 (the "Warrants").

We may also issue a significant number of additional shares of common stock as consideration for future acquisitions or other investments or for other purposes. We have also filed with the SEC an additional registration statement concerning \$200 million of debt and equity securities that we may offer from time to time, which was effective under the Securities Act as of the date of this prospectus. Future issuances of common stock could adversely impact our earnings per share by diluting our outstanding common stock, which could adversely affect our stock price. Sales of a substantial amount of common stock in the public market, or the perception that these sales may occur, could adversely affect the market price of our common stock prevailing from time to time in the public market and could impair our ability to raise funds in additional stock offerings.

The market price of our common stock may decline and fluctuate significantly.

In recent years, the market prices for securities of companies in the telecommunications industry have declined substantially and have been highly volatile. For example, from January 1, 1998 through December 31, 1999, the market price of our common stock and the Standard & Poor's Telecommunications (Long Distance) Index (Long Distance Index) increased by 137% and 110%,

respectively. Subsequently, from January 1, 2000 through December 15, 2003, the market price of our common stock and the Long Distance Index declined by 75% and 89%, respectively. Various factors and events may cause the market price of our common stock to decline or fluctuate significantly. Such factors and events include the liquidity of the market for our common stock, variations in our quarterly operating results and our growth strategies, regulatory, technological or other changes (both domestic and international) affecting the telecommunications industry generally, our competitors' business developments, changes in the cost of telecommunications service or other operating costs and changes in general market conditions. On May 14, 2002, our common stock was delisted from the Nasdaq National Market for failure to meet the required minimum bid price necessary to maintain listing on the Nasdaq National Market, and on such date our common stock began trading on the Nasdaq SmallCap Market, which is generally a less liquid market than the Nasdaq National Market. On March 21, 2003, the

listing of our common stock on the Nasdaq National Market was reinstated, after once again satisfying the minimum bid price requirements. There can be no assurance that our common stock will not decline or that future declines in the market price of our common stock will not result in our common stock being delisted from the Nasdaq National Market again or that if such delisting does occur, that there would be a liquid market for our common stock.

A small group of our stockholders could exercise influence over our affairs.

As of December 15, 2003, funds affiliated with American International Group, Inc. (AIG) beneficially owned 18.7% of our outstanding common stock. Such holders' shares of common stock are offered for sale under this prospectus. As a result of such share ownership, these holders can exercise influence over our affairs through the provisions of an agreement between such holders and us, described under "Description of Capital Stock—Contractual Governance Provisions," that requires the consent of a majority of our non-management directors before we may undertake certain actions, and that provides for the right, subject to certain conditions, of the funds affiliated with AIG to nominate one member for election by stockholders to our board of directors and propose one Board observer, in each case, subject to the maintenance of certain minimum ownership levels.

In addition, these holders' significant ownership levels could have an influence on:

- amendments to our certificate of incorporation;
- other fundamental corporate transactions such as mergers and asset sales; and
- the general direction of our business and affairs.

In addition, the applicable triggering provisions of our Rights Agreement (described in greater detail below and under "Description of Capital Stock—Takeover Protections—Rights Agreement") contain exceptions with respect to the acquisition of beneficial ownership of our shares by such holders and the other former holder of our Series C Convertible Preferred Stock (collectively, the "Former Series C Holders"). As a result, such holders could gain additional control over our affairs without triggering the provisions of our Rights Agreement.

Anti-takeover provisions could impede or discourage a third party acquisition.

We are a Delaware corporation and the anti-takeover provisions of Delaware law impose various impediments to the ability of a third party to acquire control of our company, even if a change in control would be beneficial to our existing stockholders. In addition, our board of directors has the power, without stockholder approval, to designate the terms of one or more series of preferred stock and issue shares of preferred stock, which could be used defensively if a takeover is threatened. We also have adopted a Rights Agreement, commonly known as a "poison pill," that entitles our stockholders to acquire additional shares of our common stock, or a potential acquirer of our company, at a substantial discount from their market value in the event of an attempted takeover, unless such

stockholders' rights are earlier redeemed or exchanged by us in the discretion of our board of directors. Our by-laws provide for a classified board of directors serving staggered three-year terms and restrictions on who may call a special meeting of stockholders, and our certificate of incorporation prohibits stockholder action by written consent. The indentures governing our outstanding notes and public debt require that we offer to repurchase such debt or notes upon a change of control. Lastly, all options issued under our stock option plans automatically vest upon a change of control. Our incorporation under Delaware law, our board of directors' ability to create and issue a new series of preferred stock, the acceleration of the vesting of options, the existence of our Rights Agreement, the requirement to repurchase senior notes and the notes, and certain provisions of our certificate of incorporation or by-laws could impede a merger, takeover or other business combination involving our company or discourage a potential acquirer from making a tender offer for our common stock, which, under certain circumstances, could reduce the market value of our common stock. See "Description of Capital Stock—Takeover Protections."

USE OF PROCEEDS

We will not receive any proceeds from the sale of the shares of common stock offered by this prospectus. See "Selling Security Holders."

DIVIDEND POLICY

We have not paid any cash dividends on our common stock to date. The payment of dividends, if any, in the future is within the discretion of our board of directors and will depend on our earnings, capital requirements and financial condition. Dividends are also restricted by certain of the indentures governing our outstanding senior notes and may be restricted by other credit arrangements entered into in the future. Our board of directors presently intends to retain all earnings, if any, for use in our business operations, and accordingly, our board of directors does not expect to declare or pay any dividends in the foreseeable future.

SELECTED FINANCIAL DATA

The following selected financial data should be read in conjunction with our consolidated and consolidated condensed financial statements, the notes thereto, and with "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained in documents incorporated by reference into this prospectus. The statement of operations data for the years ended December 31, 1998, 1999, 2000, 2001 and 2002 and the balance sheet data as of December 31, 1998, 1999, 2000, 2001 and 2002 have been derived from our consolidated financial statements, which have been audited by Deloitte & Touche LLP, independent auditors. The statement of operations data for the nine months ended September 30, 2002 and 2003, and the balance sheet data as of June 30, 2002 and 2003, have

been derived from the unaudited consolidated condensed financial statements which, in management's opinion, include all adjustments (consisting of only normal recurring adjustments) necessary for a fair presentation of the information set forth therein. You should not rely on interim results as being indicative of results we may expect for the full year.

	Year Ended December 31,					Nine Months Ended September 30,	
	1998	1999	2000	2001	2002	2002	2003
(in thousands, except per share amounts)							
Statement of Operations Data:							
Net revenue	\$ 421,628	\$ 832,739	\$ 1,199,422	\$ 1,082,475	\$ 1,024,056	\$ 756,444	\$ 948,948
Cost of revenue	353,016	624,599	861,181	767,841	668,643	498,244	582,190
Gross margin	68,612	208,140	338,241	314,634	355,413	258,200	366,758
Operating expenses							
Selling, general and administrative	79,532	199,581	330,411	303,026	254,152	187,084	254,146
Depreciation and amortization	24,185	54,957	120,695	157,596	82,239	60,067	62,713
Loss on sale of assets	—	—	—	—	—	—	804
Asset impairment write-down	—	—	—	526,309	22,337	570	537
Total operating expenses	103,717	254,538	451,106	986,931	358,728	247,721	318,200
Income (loss) from operations	(35,105)	(46,398)	(112,865)	(672,297)	(3,315)	10,479	48,558
Interest expense	(40,047)	(79,629)	(132,137)	(100,700)	(68,303)	(52,085)	(46,691)
Gain on early extinguishment of debt	—	—	40,952	491,771	36,675	27,251	13,252
Interest income and other income (expense)	11,504	13,395	30,743	(17,951)	(771)	880	385
Foreign currency transaction gain (loss)	—	(104)	(1,357)	(1,999)	8,486	(392)	25,249
Income (loss) before income taxes	(63,648)	(112,736)	(174,664)	(301,176)	(27,228)	(13,867)	40,753
Income tax benefit (expense)	—	—	—	(5,000)	3,598	8,679	(3,681)
Income (loss) before cumulative effect of change in accounting principle	(63,648)	(112,736)	(174,664)	(306,176)	(23,630)	(5,188)	37,072
Cumulative effect of change in accounting principle	—	—	—	—	(10,973)	(10,973)	—
Net income (loss)	(63,648)	(112,736)	(174,664)	(306,176)	(34,603)	(16,161)	37,072
Accreted and deemed dividend on convertible preferred stock	—	—	—	—	—	—	(1,678)
Income (loss) attributable to common stockholders	\$ (63,648)	\$ (112,736)	\$ (174,664)	\$ (306,176)	\$ (34,603)	\$ (16,161)	\$ 35,394
Basic income (loss) per common share	\$ (2.61)	\$ (3.72)	\$ (4.40)	\$ (5.73)	\$ (0.54)	\$ (0.25)	\$ 0.41
Diluted income (loss) per common share	\$ (2.61)	\$ (3.72)	\$ (4.40)	\$ (5.73)	\$ (0.54)	\$ (0.25)	\$ 0.40
Weighted average shares outstanding:							
Basic	24,432	30,323	39,691	53,423	64,631	64,536	86,236
Diluted	24,432	30,323	39,691	53,423	64,631	64,536	90,026

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	Year Ended December 31,					Nine Months Ended September 30,	
	1998	1999	2000	2001	2002	2002	2003
(in thousands, except ratios)							
Geographic Data							
Net revenue:							
North America	\$ 188,008	\$ 406,083	\$ 533,027	\$ 453,111	\$ 381,569	\$ 280,639	\$ 369,547
Europe	60,863	195,477	358,986	357,047	363,669	269,363	322,427
Asia-Pacific	172,757	231,179	307,409	272,317	278,818	206,442	256,974
Total	\$ 421,628	\$ 832,739	\$ 1,199,422	\$ 1,082,475	\$ 1,024,056	\$ 756,444	\$ 948,948
Other Data:							
Gross margin as a percentage of net revenue	16.3%	25.0%	28.2%	29.1%	34.7%	34.1%	38.6%
Capital expenditures	\$ 75,983	\$ 110,582	\$ 193,772	\$ 87,771	\$ 29,367	\$ 21,929	\$ 14,372
Free Cash Flow(1):							
Net cash provided by (used in) operating activities	\$ (71,296)	\$ (55,570)	\$ (131,020)	\$ (110,351)	\$ 34,633	\$ 26,288	\$ 49,538
Net cash used in investing activities	(54,221)	(200,173)	(240,014)	(89,355)	(31,607)	(22,067)	(15,337)
Free cash flow	\$ (125,517)	\$ (255,743)	\$ (371,034)	\$ (199,706)	\$ 3,026	\$ 4,221	\$ 34,201

as of December 31,

as of September 30,

1998	1999	2000	2001	2002	2002	2003
(in thousands)						

Balance Sheet Data:														
Cash and cash equivalents	\$	136,196	\$	471,542	\$	393,812	\$	83,953	\$	92,492	\$	72,050	\$	122,751
Restricted cash and investments	\$	25,729	\$	25,932	\$	5,066	\$	4,961	\$	11,712	\$	6,932	\$	12,329
Working capital(2)	\$	107,193	\$	384,998	\$	255,436	\$	(62,590)	\$	(64,771)	\$	(85,179)	\$	(39,592)
Total assets	\$	673,963	\$	1,450,746	\$	1,748,126	\$	816,214	\$	724,588	\$	736,905	\$	783,388
Long-term obligations (including current portion)	\$	420,174	\$	929,944	\$	1,256,453	\$	667,587	\$	600,988	\$	613,677	\$	598,992
Stockholder's equity (deficit)	\$	114,917	\$	190,859	\$	83,695	\$	(178,484)	\$	(200,123)	\$	(182,905)	\$	(118,267)

- (1) Free cash flow, as defined by us, consists of net cash provided by (used in) operating activities less net cash used in investing activities. Free cash flow, as defined above, may not be similar to free cash flow measures presented by other companies, is not a measurement under generally accepted accounting principles in the United States, and should be considered in addition to, but not as a substitute for, the information contained in our statement of cash flows. We believe free cash flow provides a measure of our ability, after making our capital expenditures and other investments in our infrastructure, to meet scheduled debt payments. We use free cash flow to monitor the impact of our operations on our cash reserves and our ability to generate sufficient cash flow to fund our scheduled debt maturities and other financing activities, including discretionary refinancings and retirements of debt. Because free cash flow represents the amount of cash generated or used in operating activities and investing activities before deductions for scheduled debt maturities and other fixed obligations (such as capital leases, vendor financing and other long-term obligations), you should not use it as a measure of the amount of cash available for discretionary expenditures. Scheduled debt maturities paid during the years ended December 31, 1998, 1999, 2000, 2001 and 2002 were \$2.4 million, \$21.9 million, \$16.3 million, \$33.7 million and \$25.9 million, respectively and during the nine months ended September 30, 2002 and September 30, 2003 were \$23.9 million and \$97.4 million, respectively. For information regarding our scheduled debt maturities and other fixed obligations, you should review the table disclosing our long-term obligations under "Management's Discussion and Analysis of Financial Conditions and Results of Operations—Liquidity—Short-and Long-Term Liquidity Considerations and Risks incorporated by reference into this prospectus from our quarterly and annual reports on Form 10-Q and 10-K, as filed with the SEC. See "Where You Can Find More Information."
- (2) Working capital consists of current assets less current liabilities, in each case calculated in accordance with United States generally accepted accounting principles. The decrease in working capital as of September 30, 2003 as compared to December 31, 2002 is primarily a result of our using the cash received from the issuance of the Series C Preferred to reduce long-term debt in the amount of \$53.6 million.

DESCRIPTION OF CAPITAL STOCK

General

Our certificate of incorporation authorizes the issuance of 150,000,000 shares of common stock, and 2,455,000 shares of preferred stock, each par value \$0.01 per share. As of December 15, 2003, our outstanding capital stock consisted of 88,443,258 shares of common stock held by 561 stockholders of record and no shares of preferred stock. As of December 15, 2003 there were 13,000,000 shares of common stock reserved for issuance upon the exercise of stock options and other stock equivalents, 14,157,925 shares of common stock reserved for issuance pursuant to the conversion of the 2010 Convertible Notes, 1,428,342 shares of common stock reserved for issuance pursuant to the conversion of the 2007 Convertible Notes and 330,097 shares of common stock reserved for issuance pursuant to the exercise of the outstanding Warrants. On November 4, 2003, the holders of our Series C convertible preferred stock (the "Series C Preferred") converted all outstanding Series C Preferred into 22,616,990 shares of our common stock. The following summaries of certain provisions of our capital stock do not purport to be complete and are subject to, and qualified in their entirety by, the provisions of our certificate of incorporation and bylaws, which are available from us upon request, and by applicable law. We are a Delaware corporation and are subject to the Delaware General Corporation Law (DGCL).

Common Stock

Holders of common stock are entitled to one vote per share on all matters to be voted upon by our stockholders, and the holders of our common stock vote together as a single class on all matters to be voted upon by the stockholders. The holders of common stock are entitled to receive ratably dividends when, as and if declared from time to time by the board of directors out of our assets available for the payment of dividends to the extent permitted by law, subject to preferences that may be applicable to any outstanding preferred stock and any other provisions of our certificate of incorporation. We do not, however, anticipate paying any cash dividends in the foreseeable future.

Holders of common stock have no preemptive or other rights to subscribe for additional shares. No shares of common stock are subject to redemption or a sinking fund. Holders of common stock also do not have cumulative voting rights, which means the holder or holders of more than half of the shares voting for the election of directors can elect all the directors then being elected. In the event of any liquidation, dissolution or winding up of our company, whether voluntary or involuntary, after payment of our debts and other liabilities, and subject to the rights and liquidation preference, if any, of holders of shares of preferred stock, holders of common stock are entitled to share pro rata in any distribution of remaining assets to the stockholders. All of the outstanding shares of common stock are, and the shares issued upon conversion of the notes will be, fully paid and nonassessable.

Preferred Stock

We are authorized to issue up to 2,455,000 shares of preferred stock, par value \$0.01 per share (the "Preferred Stock"), of which 455,000 shares are designated Series A Preferred Stock, 30,000 shares are designated Series B Junior Participating Preferred Stock, and 559,950 shares are designated Series C Preferred.

In addition to the Preferred Stock designated as described above, our board of directors, without further action by the holders of our common stock is also authorized to issue up to 1,410,050 shares of other Preferred Stock ("Other Preferred Stock"). Our board of directors may determine the timing, series, designation and number of shares of Other Preferred Stock to be issued, as well as the rights, preferences and limitations of such shares, including those related to voting power, redemption, conversion, dividend rights and liquidation preferences. The issuance of Other Preferred Stock could in

certain circumstances adversely affect the voting power of the holders of our common stock or have the effect of deterring or delaying any attempt by a person, entity or group to obtain control of us.

Contractual Governance Provisions

Primus has agreed that, for so long as the Former Series C Holders own common stock representing at least: five percent (5%) of the total outstanding voting power of Primus on a "Fully Diluted Basis" (as defined below), it will use its best efforts, subject to the exercise of fiduciary duties, by our Board of Directors to have a designee of the AIG Affiliated Entities (see "Selling Security Holders") nominated for election by our stockholders as a member of the Board of Directors (without any guarantee that such person shall be elected as a director); and ten percent (10%) of the total outstanding voting power of Primus on a Fully Diluted Basis, it will use its best efforts, subject to the exercise of fiduciary duties, by our Board of Directors to have a designee of the AIG Affiliated Entities serve as a

non-voting observer to the board of directors (the "Board Observer"); provided that such director nominee and the Board Observer are reasonably acceptable to a majority of our other directors. Following the conversion of the Series C Preferred, the Board elected Paul G. Pizzani as a director and Geoffrey L. Hamlin as the Board Observer, each of whom served in similar roles on behalf of the holders of Series C Preferred. For purposes of determining a stockholder's ownership percentage, "Fully Diluted Basis" shall mean the inclusion of all issued and outstanding shares of common stock plus the maximum number of shares of common stock issuable upon the exercise or conversion of all outstanding debt and equity securities.

For so long as the Former Series C Holders own common stock representing at least ten percent (10%) of the total outstanding voting power of Primus on a Fully Diluted Basis, Primus may not without majority approval of the non-management directors of Primus, voting together as a group:

- merge or consolidate Primus or any subsidiary with annual revenues of at least \$75,000,000 (a "Material Subsidiary") unless there is no change of control of Primus or any Material Subsidiary, measured by majority equity ownership;
- sell, transfer or dispose of all or substantially all of the assets of Primus or any Material Subsidiary;
- incur indebtedness such that we have in excess of \$535 million of Net Debt (defined below);
- authorize total common stock issuable upon the exercise of employee, consultant and certain other options, whether granted prior to, on or after the second closing of the Series C Preferred on March 31, 2003 (the "Second Closing"), in excess of 9,000,000 shares (subject to replenishment upon the forfeiture of unvested options);
- liquidate, reorganize, recapitalize, declare bankruptcy, consent to a receiver, or effect a general assignment for the benefit of creditors; or
- issue common stock or common stock equivalents at an effective purchase price per share (including the assumed payment of all applicable exercise or conversion payments at the time of issuance) that is less than the average closing price of the common stock for the consecutive 20-day trading period preceding such issuance, other than certain excluded issuances.

"Net Debt" means indebtedness of Primus with a maturity of one (1) year or more (excluding any such indebtedness incurred by Primus in connection with its acquisition of assets pursuant to that certain Customer Transfer Agreement by and between Primus and C&W dated September 13, 2002) less our unrestricted cash balance (including proceeds from the Initial Closing and Second Closing not used to achieve certain leverage criteria) as of the last day of the quarter preceding the calculation date.

Common Stock Warrants

As of December 15, 2003, we had outstanding warrants for the purchase of 330,097 shares of common stock at an exercise price of \$9.075 per share.

The exercise price of the warrants is subject to adjustment upon the occurrence of certain events, including, among other things, the payment of a stock dividend, a merger or consolidation and the issuance for consideration of rights, options or warrants (other than rights to purchase common stock issued to stockholders generally) to acquire our common stock. A holder of any of the warrants described above will not be entitled to any rights as a stockholder of us, including, without limitation, the right to vote with respect to the shares of our common stock, until such holder has exercised the warrants.

Registration Rights

Simultaneously with the initial closing of the sale of the Series C Preferred, we entered into a registration rights agreement, pursuant to which we granted to the purchasers of the Series C Preferred (and their affiliates and permitted transferees) (the "Designated Holders") registration rights with respect to the shares of common stock issuable upon conversion of the Series C Preferred held by the Designated Holders (collectively, the "Series C Registrable Securities"). The shares of common stock offered by this prospectus constitute Series C Registrable Securities.

At any time after the date of the registration rights agreement, the Designated Holders holding at least two-thirds of the Series C Registrable Securities may cause us to file a registration statement under the Securities Act, with respect to their Series C Registrable Securities, so long as the aggregate proceeds to them from the registration statement is expected to exceed \$10.0 million (a "Demand Registration"). The Designated Holders are entitled to two Demand Registrations, but in the case of an underwritten Demand Registration, if the number of Series C Registrable Securities to be registered on any particular registration statement is reduced to less than 67% of the Series C Registrable Securities initially requested to be registered, the Designated Holders will be entitled to one additional Demand Registration. Designated Holders whose shares are not included in the initial request for registration may also register their Series C Registrable Securities in the Demand Registration.

The Designated Holders also have unlimited piggyback registrations, as well as the right to request registrations of their Series C Registrable Securities on Form S-3, subject to certain limitations, so long as the aggregate proceeds to them from a particular Registration Statement is expected to exceed \$1.0 million (an "S-3 Registration"). We filed the Registration Statement of which this prospectus is a part with the SEC pursuant to such an S-3 Registration request.

We may postpone the filing of a registration statement relating to a Demand Registration or an S-3 Registration for certain specified valid business reasons described in the registration rights agreement, but in no event for more than 150 days, and we may withdraw a filed registration statement in the event of any valid business reason not resulting from our actions. We may exercise this right to postponement or withdrawal no more than once in any 12-month period. For so long as the Designated Holders hold at least 10% of the outstanding voting power of our stockholders on a fully diluted basis, we may not grant additional registration rights to any party without the prior consent of a majority of our non-employee directors, unless such registration rights are subordinate to the rights granted under the registration rights agreement.

All such registrations would be at our expense, exclusive of underwriting discounts and commissions. We and the Designated Holders have entered into customary indemnification and contribution provisions.

Takeover Protections

Classified Board

Pursuant to our By-laws, our board of directors is divided into three classes of directors each containing, as nearly as possible, an equal number of directors. Directors within each class are elected to serve three-year terms and approximately one-third of the directors sit for election at each annual meeting of our stockholders. A classified board of directors may have the effect of deterring or delaying any attempt by any group to obtain control of Primus by a proxy contest since such third party would be required to have its nominees elected at two separate annual meetings of our stockholders in order to elect a majority of the members of the board of directors. Directors who are elected to fill a vacancy (including vacancies created by an increase in the number of directors) must be confirmed by the stockholders at the next annual meeting of stockholders whether or not such director's term expires at such annual meeting.

Other Protections Under By-Laws

Our by-laws allow the board of directors to increase the number of directors from time to time and to fill any vacancies on the board of directors, including vacancies resulting from an increase in the number of directors. This provision is designed to provide the board of directors with flexibility to deal with an attempted hostile takeover by a stockholder who may acquire a majority voting interest in us without paying a premium. This provision allows the board of directors to increase its size and prevent a "squeeze-out" of any remaining minority interest soon after a new majority stockholder gains control over us. Further, the by-laws limit the new majority stockholder's power to remove a current or all current directors before the annual meeting in the absence of "cause." Cause for removal of a director is limited to:

- a judicial determination that a director is of unsound mind;
- a conviction of a director of an offense punishable by imprisonment for a term of more than one year;
- a breach or failure by a director to perform the statutory duties of said director's office if the breach or failure constitutes self-dealing, willful misconduct or recklessness; or
- a failure of a director, within 60 days after notice of his or her election, to accept such office either in writing or by attending a meeting of the board of directors and fulfilling such other requirements of qualification as the by-laws or certificate of incorporation may provide.

Rights Agreement

We are party to an agreement with StockTrans, Inc., as Rights Agent, dated December 23, 1998 (as amended, the "Rights Agreement"). The Rights Agreement provides for the distribution of rights that entitle the registered holder, subject to the terms of the Rights Agreement (including the Exchange Right described in the succeeding paragraph), to purchase from us one-thousandth of a share (a "Unit") of Series B Junior Participating Preferred Stock, par value \$0.01 per share (the "Series B Preferred"), at a purchase price of \$90.00 per Unit, subject to adjustment (the "Rights"). Each Unit is designed to be the economic equivalent of one share of our common stock. The Rights are presently attached to all certificates representing shares of outstanding common stock, including the shares of common stock offered under this prospectus that were issued upon conversion of Series C Preferred. The Rights will separate from the common stock and the Rights will become exercisable (such date, a "Distribution Date") upon the earlier of:

- ten business days following a public announcement (the date of such announcement being the "Stock Acquisition Date") that a person or group of affiliated or associated persons (an

"Acquiring Person") has acquired, obtained the right to acquire, or otherwise obtained beneficial ownership of 20% or more of the then outstanding shares of common stock; or

- ten business days following the commencement of a tender offer or exchange offer that would result in an Acquiring Person owning 20% or more of the then outstanding shares of common stock, or such later date as may be determined by action of a majority of the members of the board of directors (such determination to be made prior to such time as any person becomes an Acquiring Person).

The term "Acquiring Person" does not include us, any of our subsidiaries, any of our employee benefit plans or employee stock plans, or any holder of the common stock issued upon conversion of the Series C Preferred (each such person or entity being referred to as an "Exempt Person").

In the event that

- we are the surviving corporation in a merger with an Acquiring Person and shares of common stock shall remain outstanding;
- a person or group of affiliated or associated persons becomes the beneficial owner of 20% or more of the then outstanding shares of common stock;
- an Acquiring Person engages in one or more "self-dealing" transactions as set forth in the Rights Agreement; or
- during such time as there is an Acquiring Person, an event occurs which results in such Acquiring Person's ownership interest being increased by more than 1% (e.g., by means of a reverse stock split or recapitalization);

then, in each case, each holder of a Right will thereafter have the right to receive, upon exercise, a Unit of Series B Preferred (or, in certain circumstances, common stock, cash, property or other of our securities) having a value equal to two times the exercise price of the Right. The exercise price is the purchase price multiplied by the number of Units of Series B Preferred issuable upon exercise of a Right prior to the events described in this paragraph. Our board of directors may, at its option, at any time after a person becomes an Acquiring Person, cause us to exchange all or any part of the then outstanding and exercisable Rights for

shares of our common stock at an exchange ratio of one share per Right (as adjusted for stock splits, stock dividends or similar transactions) or for Units of our Preferred Stock designed to have the same voting rights as one share of our common stock (the "Exchange Right"). The Exchange Right will terminate once any person (other than an Exempt Person), together with that person's affiliates and associates, becomes the beneficial owner of a majority of our common stock then outstanding. Notwithstanding any of the foregoing, following the occurrence of any of the events set forth in this paragraph, all Rights that are, or (under certain circumstances specified in the Rights Agreement) were, beneficially owned by any Acquiring Person will be null and void.

In the event that, at any time following the Stock Acquisition Date,

- we are acquired in a merger or other business combination transaction and we are not the surviving corporation (other than a merger described in the preceding paragraph);
- any person or group of affiliated or associated persons consolidates or merges with us and all or part of the common stock is converted or exchanged for securities, cash or property of any other person or group of affiliated or associated persons; or
- 50% or more of our assets or earning power is sold or transferred,

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each holder of a Right (except the Rights which previously have been voided or exchanged as described above) shall thereafter have the right to receive, upon exercise, common stock of the Acquiring Person having a value equal to two times the exercise price of the Right.

The Rights are not exercisable until the Distribution Date and will expire on December 23, 2008 unless the term of the agreement is extended or the Rights are earlier redeemed or exchanged by us. At the time until ten business days following the Stock Acquisition Date or such later date as a majority of the members of the board of directors shall determine (such determination to be made prior to the date specified by the Rights Agreement), a majority of the board of directors may redeem the Rights in whole, but not in part, at a price of \$0.001 per Right (subject to adjustment in certain events) (the "Redemption Price"). Immediately upon the action of a majority of the board of directors ordering the redemption of the Rights, the Rights will terminate and the only right of the holders of Rights will be to receive the Redemption Price.

Statutory Provisions

We are subject to Section 203 of the DGCL which, subject to certain exceptions, prohibits a Delaware corporation, the voting stock of which is generally publicly traded (i.e., listed on a national securities exchange or authorized for quotation on an inter-dealer quotation system of a registered national securities association) or held of record by more than 2,000 stockholders, from engaging in any "business combination" (as defined below) with any "interested stockholder" (as defined below) for a period of three years following the date that such stockholder became an interested stockholder, unless:

- prior to such date, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding those shares owned (1) by persons who are directors and also officers, and (2) by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or subsequent to such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66²/₃% of the outstanding voting stock which is not owned by the interested stockholder.
- Section 203 of the DGCL defines "business combination" to include:
- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;
- subject to certain exceptions, any transaction which results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation which has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of benefits provided by or through the corporation. In general, Section 203 defines an "interested stockholder" as any person who, together with any

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affiliates or associates of such person, beneficially owns, directly or indirectly, 15% or more of the outstanding voting stock of a Delaware corporation.

This provision of the DGCL could prohibit or delay mergers or other takeover or change of control attempts with respect to us and, accordingly, may discourage attempts that might result in a premium over the market price for shares held by our stockholders.

Acceleration of Vesting

Upon a change of control, our board of directors may accelerate the vesting of all unvested options issued pursuant to our stock option plans. The acceleration of vesting of such options upon a change of control may have the effect of discouraging a third party from making a tender offer or otherwise attempting to obtain control of us by making any such transaction more costly.

Repurchase of Senior Notes

Upon a change of control, pursuant to the indentures governing each of our senior notes (other than the 1997 senior notes), the holders of such senior notes may require us to repurchase their senior notes at 101% of principal plus accrued interest. A similar provision is contained in the indenture governing our 2000 convertible debentures and the indenture governing the notes offered hereby. These provisions may have the effect of discouraging a third party from making a tender offer or otherwise attempting to obtain control of us.

Indemnification of Directors and Officers

Section 145 of the DGCL provides the power to indemnify any director or officer acting in his capacity as our representative who was, is or is threatened to be made a party to any action or proceeding for expenses, judgments, penalties, fines and amounts paid in settlement in connection with that action or proceeding. The indemnity provisions apply whether the action was instituted by a third party or arose by or in our right. Generally the only limitations on our ability to indemnify our director or officer is that the director or officer acted in good faith in a manner reasonably believed to be in, or not opposed to, the best interests of the corporation and, with respect to any criminal action, that the director or officer has no reasonable cause to believe that his conduct was unlawful.

Article V of our by-laws provides that we will indemnify any person by reason of the fact that he or she is or was a director, officer, employee or agent of Primus (or is or was serving in such capacity for another entity at our request). To the extent that a director, officer, employee or agent of ours has been successful on the merits or otherwise in defense of any action, suit or proceeding referred to in such Article V, or in defense of any claim, issue or matter therein, he or shall be indemnified by us against actually and reasonably incurred expenses in connection therewith. Such expenses may be paid by us in advance of the final disposition of the action upon receipt of an undertaking to repay the advance if it is ultimately determined that such person is not entitled to indemnification.

Our by-laws authorize us to take steps to ensure that all persons entitled to indemnification are properly indemnified, including, if the board of directors so determines, purchasing and maintaining insurance. We have obtained a policy insuring our directors and officers against certain liabilities, including liabilities under the Securities Act.

Limitation of Liability

Our certificate of incorporation provides that none of our directors shall be personally liable to us or our stockholders for monetary damages for a breach of fiduciary duty as a director, except for liability:

- for any breach of that person's duty of loyalty to us or our stockholders;

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- for acts or omissions not in good faith or involving intentional misconduct or a knowing violation of law;
- for the unlawful payment of dividends on or redemption of our capital stock; and
- for any transaction from which that person derived an improper personal benefit.

We maintain directors and officers' liability insurance to provide directors and officers with insurance coverage for losses arising from claims based on breaches of duty, negligence, error and other wrongful acts. At present, except for the litigation described in this prospectus, there is no pending litigation or proceeding, and we are not aware of any threatened litigation or proceeding, involving any director or officer where indemnification will be required or permitted under our certificate of incorporation or our by-laws.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is StockTrans, Inc.

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SELLING SECURITY HOLDERS

The following table sets forth information known to us as of December 15, 2003 with respect to the selling security holders listed below ("selling holders") and the number of shares of common stock beneficially owned by each selling holder that may be offered under this prospectus, based upon record holdings and Amendment No. 2 to a Schedule 13D filed by certain of the holders with the SEC on December 8, 2003 (the AIG 13D Amendment). The selling holders may offer all, some or none of the common stock. Because the selling holders may offer all or some portion of the common stock, no estimate can be given as to the amount of the common stock that will be held by the selling holders upon termination of any sales. The table below assumes that all selling holders will sell all of their common stock, unless otherwise indicated.

In the following table, we have determined the number and percentage of shares beneficially owned in accordance with Rule 13d-3 of the Exchange Act, and this information does not necessarily indicate beneficial ownership for any other purpose. Applicable percentages are based on the shares of common stock outstanding as of the close of business on December 15, 2003.

Name	Common Stock Beneficially Owned(1) Before Offering	Percent of Common Stock Beneficially Owned Before Offering	Common Stock Offered	Common Stock Beneficially Owned After Completion of the Offering
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American International Group, Inc.	16,540,008(1)	18.7%	16,540,008(1)	-0-
AIG Global Sports & Entertainment Fund, L.P. ("AIG Global Sports")	8,270,004(2)	9.4%	8,270,004(2)	-0-
AIG Global Emerging Markets Fund, L.L.C. ("AIG Emerging Markets")	7,478,556(2)	8.5%	7,478,556(2)	-0-
GEM Parallel Fund, L.P. ("GEM")	791,448(2)	*	791,448(2)	-0-
Duke Hotels Limited ("Duke")	576,982	*	576,982	-0-
Smithfield Fiduciary LLC (3) (5)	3,200,000	3.6%	3,200,000	-0-
Citadel Equity Fund Ltd. (4) (5)	1,000,000	1.1%	1,000,000	-0-
Connecticut General Life Insurance Company Separate Account FTF	800,000	*	800,000	-0-
Deutsche Bank, AG, London Branch (5)	500,000	*	500,000	-0-
	22,616,990	25.6%	22,616,990	-0-

* Less than 1%.

(1) Consists of shares listed below in this column that are held of record directly by AIG Global Sports, AIG Emerging Markets and GEM, each of which is managed by a sole general partner or sole managing member that is an indirect wholly-owned subsidiary of AIG (with AIG Global Sports, AIG Emerging Markets, and GEM collectively constituting the "AIG Affiliated Entities"). According to the AIG 13D Amendment, each of AIG GSEF, L.P. (AIGGSEFGP), the sole general partner of AIG Global Sports; AIG GSEF Investments, Ltd. (AIGGSEFI), the sole general partner of AIGGSEFGP; AIG Capital Partners, Inc. (AIGCP), the sole shareholder of AIGGSEFI; AIG Capital Management Corp. (AIGCMC), the sole managing member of AIG Emerging Markets and the sole general partner of GEM; AIG Asset Management Services, Inc. (AIGAMS), the sole shareholder of AIGCMC; and AIG Global Investment Group, Inc., the sole shareholder of AIGCP and AIGAMS; is also deemed to beneficially own some or all of the shares held of record directly by AIG Global Sports, AIG Emerging Markets and GEM. See also "Plan of Distribution—Lock-Up Agreements."

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(2) Represents shares owned of record included as part of the shares beneficially owned and disclosed in note 1 above.

(3) Highbridge Capital Management, LLC ("Highbridge"), is the trading manager of Smithfield Fiduciary LLC ("Smithfield") and consequently has voting control and investment discretion over the shares of common stock held by Smithfield. Glenn Dubin and Henry Swieca control Highbridge. Each of Highbridge and Messrs. Dubin and Swieca disclaims beneficial ownership of the shares held by Smithfield.

(4) Citadel Limited Partnership is the trading manager of Citadel Equity Fund Ltd. and consequently has voting control and investment discretion over the securities held by Citadel Equity Fund Ltd. Citadel Limited Partnership disclaims beneficial ownership of the shares held by Citadel Equity Fund Ltd. Kenneth C. Griffin indirectly controls Citadel Limited Partnership. Mr. Griffin disclaims beneficial ownership of the shares held by Citadel Equity Fund Ltd.

(5) Each of these selling holders purchased the shares listed beside its name in the table in the ordinary course of business on November 25, 2003 and, on such date, had no agreements or understandings, direct or indirect, with any person to distribute these securities.

With the exception of the AIG Affiliated Entities' and Duke's participation in the purchase of Series C Preferred, and the election and participation of a member of the board of directors and Board Observer, none of the selling security holders has held any position or office or has had any material relationship with us or any of our predecessors or affiliates within three years of the date of this prospectus. See "Description of Capital Stock—Contractual Governance Agreement."

The AIG Affiliated Entities and Duke (1) purchased the Series C Preferred in private transactions on December 31, 2002 and March 31, 2003, (2) converted the Series C Preferred into an aggregate of 22,616,990 shares of Primus common stock on November 4, 2003, and (3) sold an aggregate of 5,500,000 shares of the common stock listed above for resale by the other selling holders to such holders in a private transaction on November 25, 2003. Each of the AIG Affiliated Entities purchased shares of Series C Preferred in the ordinary course of business and, at the dates of the respective purchases, had no agreements or understandings, direct or indirect, with any person to distribute these securities or the shares of common stock into which they were convertible.

All of the shares of common stock listed above were "restricted securities" under the Securities Act prior to effectiveness of the registration statement relating to this prospectus. Information concerning the selling security holders may change from time to time and any changed information will be set forth in amendments to the registration statement relating to this prospectus and/or supplements to this prospectus if and when necessary.

PLAN OF DISTRIBUTION

We are registering 22,616,990 shares of common stock under this prospectus on behalf of the selling security holders. We will receive no proceeds from this offering.

As used herein, the term "selling security holder" includes donees, pledgees, transferees or other successors-in-interests selling shares received from a named selling security holder as a gift, partnership distribution, or other non-sale-related transfer after the date of this prospectus.

Subject to the limitations described under "—Lock-Up Agreements," (the "Lock-Up Agreements") the selling security holders may sell shares of common stock from time to time (if at all) using any one or more of the following methods:

- to or through underwriters, brokers or dealers;
- directly to one or more other purchasers;

- through agents on a best-efforts basis;
- through a combination of any of these methods of sale; or
- through any other method permitted pursuant to applicable law.

If a selling security holder sells shares of common stock through underwriters, dealers, brokers or agents, those underwriters, dealers, brokers or agents may receive compensation in the form of discounts, concessions or commissions from the selling security holder and/or the purchasers of the shares of common stock.

The shares of common stock may be sold from time to time:

- in one or more transactions at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to prevailing market prices;
- at varying prices determined at the time of sale; or
- at negotiated prices.

These sales may be effected:

- in transactions on any national securities exchange or quotation service on which our common stock may be listed or quoted at the time of sale, including the Nasdaq National Market on which our common stock is currently quoted;
- in transactions in the over-the-counter market;
- in block transactions in which the broker or dealer so engaged will attempt to sell the shares of common stock as agent but may position and resell a portion of the block as principal to facilitate the transaction, or in crosses, in which the same broker acts as an agent on both sides of the trade;
- in transactions otherwise than on exchanges or services or in the over-the-counter market;
- through the writing of options; or
- through other types of transactions.

In connection with sales of common stock or otherwise, the selling security holder may, subject to the Lock-Up Agreements, enter into hedging transactions with brokers-dealers or others, who may in turn engage in short sales of the common stock in the course of hedging the positions they assume. The selling security holder may sell short the common stock and may deliver this prospectus in connection with short sales and use the shares of common stock covered by the prospectus to cover these short sales. In addition, any shares of common stock covered by this prospectus that qualify for sale pursuant to Rule 144 or any other available exemption from registration under the Securities Act may be sold under Rule 144 or another available exemption.

At the time a particular offering of shares of common stock is made, a prospectus supplement, if required, will be distributed which will set forth the aggregate amount of shares of common stock being offered and the terms of the offering, including the name or names of any underwriters, dealers, brokers or agents, if any, and any discounts, commissions or concessions allowed or reallocated to be paid to brokers or dealers. To our knowledge, there are currently no agreements, arrangements or understandings with respect to the sale of any of the shares offered hereby.

Each selling security holder and any underwriters, dealers, brokers or agents who participate in the distribution of the shares of common stock may be deemed to be "underwriters" within the meaning of the Securities Act and any profits on the sale of the shares of common stock by them and any

discounts, commissions or concessions received by any underwriters, dealers, brokers or agents may be deemed to be underwriting discounts and commissions under the Securities Act.

Each selling security holder and any other person participating in a distribution of the shares of common stock will be subject to applicable provisions of the Exchange Act and the rules and regulations under the Exchange Act, including, without limitation, Regulation M which may limit the timing of purchases and sales of shares of common stock by the selling security holder and any other person participating in the distribution. Furthermore, Regulation M under the Exchange Act may restrict the ability of any person engaged in a distribution of the shares of common stock to engage in market-making activities with respect to the shares of common stock being distributed for a period of up to five business days prior to the commencement of the distribution. All of the foregoing may affect the marketability of the shares of common stock and the ability of any person or entity to engage in market-making activities with respect to the shares of common stock.

Certain expenses incurred in connection with the registration of the shares, including printer's and accounting fees and the fees, disbursements and expenses of our counsel and the reasonable fees of one counsel for the selling security holders will be borne by us. Commissions and discounts, if any, attributable to the sales of the shares of common stock will be borne by each selling security holder. We have agreed to indemnify the selling security holders against certain losses,

claims, damages and liabilities, including liabilities under the Securities Act. Each selling security holder may agree to indemnify any broker-dealer or agent that participates in transactions involving sales of the shares of common stock against certain liabilities, including liabilities arising under the Securities Act.

Lock-Up Agreements

Each of the AIG Affiliated Entities has entered into an agreement with Primus through which the AIG Affiliated Entities have agreed, subject to certain exceptions, not to offer, sell or otherwise dispose of an aggregate of 13,540,008 shares of our common stock or any securities convertible or exchangeable into our common stock through July 30, 2004, without the prior written consent of Primus.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy any reports, statements or other information filed by us at the SEC's public reference room at Room 1024, Judiciary Plaza, 450 Fifth Street, N.W., Washington, D.C. 20549. You can request copies of these documents by contacting the SEC and paying a fee for the copying costs. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room. You also may inspect copies of these materials at the reading room of the library of the National Association of Securities Dealers, Inc., 1735 K Street, N.W., Washington, D.C. 20006. Our SEC filings are also available to the public from commercial document retrieval services and at the SEC's web site at "<http://www.sec.gov>."

We "incorporate by reference" into this prospectus certain information we file with the SEC, which means that we can disclose important information to you by referring you to another prospectus we filed with the SEC. The information incorporated by reference is an important part of this prospectus, and information that we file later with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings we will make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, after the date of this prospectus but before the end of any offering made under this prospectus:

- our Current Report on Form 8-K, filed with the SEC on January 14, 2004;
- our two Current Reports on Form 8-K, filed with the SEC on January 7, 2004;
- our Current Report on Form 8-K, filed with the SEC on November 4, 2003;

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- our Current Report on Form 8-K, filed with the SEC on October 22, 2003;
 - our Current Report on Form 8-K, filed with the SEC on September 16, 2003;
 - our Current Report on Form 8-K, filed with the SEC on September 5, 2003 (the "Form 8-K");
 - our Quarterly Reports on Form 10-Q for the quarters ended September 30, 2003, June 30, 2003 and March 31, 2003;
 - our Amendment to Quarterly Report on Form 10-Q/A for the quarter ended June 30, 2003, filed with the SEC on December 23, 2003 excluding Exhibit 32 thereunder;
 - our Definitive Proxy Statement on Schedule 14A as filed with the SEC on April 30, 2003, excluding the information contained in such proxy statement under the captions "Executive Compensation and Other Information—Ten-Year Option Repricings," "Stock Price Performance Graph," "Compensation Committee Report on Executive Compensation" and "Report of the Audit Committee," which are not incorporated by reference in this prospectus; and
 - our Annual Report on Form 10-K for the fiscal year ended December 31, 2002, as amended and superseded by Items 5.B and 7 of the Form 8-K;

We will furnish without charge to you, upon written or oral request, a copy of any or all of the documents described above, except for exhibits, unless the exhibits are specifically incorporated by reference into the prospectus. You should direct your requests to: Primus Telecommunications Group, Incorporated, 1700 Old Meadow Road, McLean, VA 22102, Attention: Thomas R. Kloster, Senior Vice President.

WE HAVE AUTHORIZED NO ONE TO GIVE ANY INFORMATION OR TO MAKE ANY REPRESENTATIONS NOT CONTAINED IN THIS PROSPECTUS. YOU SHOULD RELY ONLY ON THE INFORMATION PROVIDED IN THIS PROSPECTUS OR INCORPORATED BY REFERENCE THEREIN. YOU MUST NOT RELY ON ANY UNAUTHORIZED INFORMATION.

THIS PROSPECTUS DOES NOT OFFER TO SELL OR BUY ANY SHARES OF COMMON STOCK IN ANY JURISDICTION WHERE IT IS UNLAWFUL. YOU SHOULD NOT ASSUME THAT THE INFORMATION IN THIS PROSPECTUS IS ACCURATE AS OF ANY DATE OTHER THAN THE DATE ON THE FRONT OF THIS PROSPECTUS.

FORWARD-LOOKING INFORMATION

Certain statements included or incorporated by reference into this prospectus and elsewhere concerning Primus constitute "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Such statements are based on current expectations, and are not strictly historical statements. Forward-looking statements include, without limitation, statements set forth in this prospectus and elsewhere regarding, among other things:

- our expectations of future growth, revenue, foreign revenue contributions and net income, as well as income from operations, earnings per share, cost reduction efforts, cash flow, network development, Internet services development, traffic development, capital expenditures, selling, general and administrative expenses, goodwill impairment charges, service introductions and cash requirements;
- our financing, refinancing and/or debt repurchase, restructuring or exchange plans or initiatives;
- our liquidity and debt service forecasts;
- assumptions regarding stable currency exchange rates;

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- management's plans, goals, expectations, guidance, objectives, strategies, and timing for future operations, acquisitions, product plans and performance;
 - the revenue or other impact of our acquisition of the SME customer base of C&W in the United States;
 - the impact of a recent inquiry by the FCC concerning compliance by our subsidiary Primus Telecommunications, Inc. with recently enacted Do-Not-Call regulations; and
 - management's assessment of market factors.

Factors and risks, including certain of those described in greater detail herein, that could cause actual results or circumstances to differ materially from those set forth or contemplated in forward-looking statements include, without limitation:

- changes in business conditions;
- fluctuations in the exchange rates of currencies, particularly any strengthening of the United States dollar relative to foreign currencies of the countries where we conduct our foreign operations;
- adverse interest rate developments;
- fluctuations in prevailing trade credit terms or revenues due to the adverse impact of, among other things, further telecommunications carrier bankruptcies or adverse bankruptcy related developments affecting our large carrier customers;
- the possible inability to raise additional capital when needed, or at all;
- the inability to reduce, repurchase, exchange or restructure debt significantly, or in amounts sufficient to conduct regular ongoing operations;
- changes in the telecommunications or Internet industry;
- adverse tax rulings from applicable taxing authorities;
- digital subscriber line (DSL), Internet and telecommunications competition;
- changes in financial, capital market and economic conditions;
- changes in service offerings or business strategies;
- difficulty in migrating or retaining customers, including former C&W customers associated with our recent acquisition of this customer base, or integrating other assets;
- difficulty in providing voice-over-Internet protocol services;
- changes in the regulatory schemes or requirements and regulatory enforcement in the markets in which we operate;
- restrictions on our ability to follow certain strategies or complete certain transactions as a result of our capital structure or debt covenants;
- risks associated with our limited DSL, Internet and Web hosting experience and expertise;
- entry into developing markets;
- the possible inability to hire and/or retain qualified sales, technical and other personnel, and to manage growth;
- risks associated with international operations;
- dependence on effective information systems;

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- dependence on third parties to enable us to expand and manage our global network and operations;

- dependence on the implementation and performance of our global asynchronous transfer mode + Internet protocol communications network;
- adverse outcomes of outstanding litigation matters;
- adverse FCC rulings or fines affecting our operations;
- the potential elimination or limitation of a substantial amount or all of our U.S. or foreign operating loss carryforwards due to significant issuances of equity securities, changes in ownership or other circumstances, which carryforwards would otherwise be available to reduce future taxable income; and
- the outbreak or escalation of hostilities or terrorist acts and adverse geopolitical developments.

As such, actual results or circumstances may vary materially from such forward-looking statements or expectations. Readers are also cautioned not to place undue reliance on these forward-looking statements which speak only as of the date these statements were made. We are not necessarily obligated to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

You are advised, however, to consult the discussion of risks and uncertainties under "Risk Factors" in this prospectus and under "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Short- and Long-Term Liquidity Considerations and Risks" and "Business—Legal Proceedings" in the Form 8-K and in our Form 10-K and Forms 10-Q filed with the SEC. See "Where You Can Find More Information." These are the principal factors that we think could cause our actual results to differ materially from expected results, but other factors could also adversely affect our business and the value of your investment in our securities.

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LEGAL MATTERS

Cooley Godward LLP, Reston, Virginia, will pass upon the validity of the issuance of the common stock offered under this prospectus.

EXPERTS

The consolidated financial statements and the related financial statement schedule of Primus Telecommunications Group, Incorporated and subsidiaries, incorporated in this prospectus by reference from Primus Telecommunications Group, Incorporated's Current Report on Form 8-K, as filed with the SEC on September 5, 2003, have been audited by Deloitte & Touche LLP, independent auditors, as stated in their report dated February 27, 2003 (August 28, 2003 as to the effects of the adoption of Statement of Financial Accounting Standard (SFAS) No. 145 described in Note 2), which report expresses an unqualified opinion and includes an explanatory paragraph referring to the adoption of SFAS No. 142, "Goodwill and Other Intangible Assets" and SFAS No. 145, "Rescission of FASB Statements No. 4, 44, and 64, amendment of FASB Statement No. 13, and Technical Corrections," which is incorporated herein by reference, and has been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

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PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION

The following table sets forth the costs and expenses, other than underwriting discounts and commissions, payable by the registrant in connection with the distribution of the notes and common stock being registered. All amounts are estimated, except the SEC Registration Fee, and the Nasdaq National Market Filing Fee:

SEC Registration Fee	\$	16,423
Accounting Fees		25,000
Legal Fees and Expenses		100,000
Printing and Engraving		5,000
Miscellaneous		5,000
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Total	\$	151,423
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ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS

Section 145 of the Delaware General Corporation Law (the "DGCL") permits each Delaware business corporation to indemnify its directors, officers, employees and agents against liability for each such person's acts taken in his or her capacity as a director, officer, employee or agent of the corporation if such actions were taken in good faith and in a manner which he or she reasonably believed to be in or not opposed to the best interests of the corporation, and with respect to any criminal action, if he or she had no reasonable cause to believe his or her conduct was unlawful. Article X of our Amended and Restated By-Laws provides that we, to the full extent permitted by Section 145 of the DGCL, shall indemnify all of our past and present directors and may indemnify all of our past or present employees or other agents. To the extent that a director, officer, employee or agent of ours has been successful on the merits or otherwise in defense of any action, suit or proceeding referred to in such Article X, or in defense of any claim, issue or matter therein, he or she shall be indemnified by us against

actually and reasonably incurred expenses in connection therewith. Such expenses may be paid by us in advance of the final disposition of the action upon receipt of an undertaking to repay the advance if it is ultimately determined that such person is not entitled to indemnification.

As permitted by Section 102(b)(7) of the DGCL, Article 11 of our Amended and Restated Certificate of Incorporation provides that no director shall be liable to us for monetary damages for breach of fiduciary duty as a director, except for liability:

- (i) for any breach of the director's duty of loyalty to us or our stockholders,
- (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law,
- (iii) for the unlawful payment of dividends on or redemption of our capital stock; or
- (iv) for any transaction from which the director derived an improper personal benefit.

We have obtained a policy insuring us and our directors and officers against certain liabilities, including liabilities under the Securities Act.

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ITEM 16. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) Exhibits.

- 4.1 Registration Rights Agreement dated as of December 31, 2002 between the Registrant and the holders of Series C Preferred (Incorporated by reference to Exhibit 99.2 of the Registrant's Current Report on Form 8-K filed with the SEC on January 2, 2003) (the "Registration Rights Agreement").
- 4.2 Amendment No. 1 to the Registration Rights Agreement, dated as of November 21, 2003.*
- 4.3 Lock-Up Agreement, as amended, dated November 21, 2003 among Primus and the AIG Affiliated Entities.**
- 5.1 Opinion of Cooley Godward LLP.**
- 23.1 Consent of Deloitte & Touche LLP, Independent Auditors.*
- 23.2 Consent of Cooley Godward LLP (included in Exhibit 5.1).**
- 24.1 Power of Attorney (see page II-3).**
- 99.1 Contractual/Governance Agreement dated November 4, 2003 among Primus and the AIG Affiliated Entities.**

* Filed herewith.

** Previously filed.

(b) Financial Statement Schedules

Consolidated Schedules are omitted because they are not applicable, or because the information is included in the Schedule, Financial Statements or the Notes thereto, which are incorporated by reference from the registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2002 and Current Report on Form 8-K filed with the SEC on September 5, 2003.

ITEM 17. UNDERTAKINGS.

The undersigned Registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement
 - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of this Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this Registration Statement. Notwithstanding the foregoing, any increase or decrease in the volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective Registration Statement; and

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- (iii) To include any material information with respect to the plan of distribution not previously disclosed in this Registration Statement or any material change to such information in this Registration Statement;

provided, however, that paragraphs (1)(i) and (1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed by the Company pursuant to Section 13 or Section 15(d) of the Exchange Act, that are incorporated by reference in this Registration Statement.

(2) That, for the purposes of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at the time shall be deemed to be the initial *bona fide* offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

The Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in this Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein and the offering of such securities at the time shall be deemed to be the initial *bona fide* offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the indemnification provisions described herein, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing Amendment No. 2 to this Registration Statement on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of McLean, Commonwealth of Virginia, on January 15, 2004.

PRIMUS TELECOMMUNICATIONS GROUP, INCORPORATED

By: /s/ K. PAUL SINGH

K. Paul Singh
Chairman, President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signatures	Title	Date
/s/ K. PAUL SINGH	Chairman, President, Chief Executive Officer (Principal Executive Officer)	January 15, 2004
K. Paul Singh		
/s/ JOHN F. DEPODESTA	Executive Vice President, Secretary and Director	January 15, 2004
John F. DePodesta		
/s/ NEIL L. HAZARD	Executive Vice President, Chief Operating Officer and Chief Financial Officer (Principal Financial Officer)	January 15, 2004
Neil L. Hazard		
/s/ TRACY BOOK LAWSON	Vice President — Corporate Controller (Principal Accounting Officer)	January 15, 2004
Tracy Book Lawson		
/s/ DAVID E. HERSHBERG*	Director	January 15, 2004
David E. Hershberg		
/s/ NICK EARLE*	Director	January 15, 2004
Nick Earle		
/s/ PRADMAN P. KAUL*	Director	January 15, 2004

Pradman P. Kaul

/s/ JOHN G. PUENTE*

Director

January 15, 2004

John G. Puente

/s/ DOUGLAS M. KARP*

Director

January 15, 2004

Douglas M. Karp

/s/ PAUL G. PIZZANI*

Director

January 15, 2004

Paul G. Pizzani

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*By /s/ K. PAUL SINGH

Director

January 15, 2004

K. Paul Singh
Attorney-in-fact

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EXHIBIT INDEX

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* Filed herewith.

** Previously filed.

Amendment No. 1 to
REGISTRATION RIGHTS AGREEMENT
by and among
PRIMUS TELECOMMUNICATIONS GROUP, INCORPORATED,
AIG GLOBAL SPORTS AND ENTERTAINMENT FUND, L.P.
and
THE OTHER INVESTORS LISTED HEREIN

Dated as of November 21, 2003

REGISTRATION RIGHTS AGREEMENT

The signatories hereto (as well as certain other Investors) entered into a REGISTRATION RIGHTS AGREEMENT, dated as of December 31, 2002 (the "*Registration Rights Agreement*") and a Stock Purchase Agreement, dated as of December 31, 2002 (the "*Stock Purchase Agreement*"), concerning the issuance and sale to the Investors, of shares of Series C Convertible Preferred Stock, par value \$0.01 per share (the "*Series C Preferred Stock*"), of the Company. Capitalized terms that are not otherwise defined herein shall have the meanings set forth in the Registration Rights Agreement.

WHEREAS, the signatories own the Registrable Securities set forth on the signature page hereto, which collectively represent more than a majority of outstanding Registrable Securities owned by all Investor Stockholders; and

WHEREAS, in order to facilitate the Investors' future resale of Common Stock that was acquired upon conversion of the Series C Preferred Stock, the Company expended significant internal and professional resources to expeditiously file a registration statement under the Securities Act concerning such shares.

NOW, THEREFORE, in consideration of the Company's efforts described above and the mutual covenants and agreements set forth herein and for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto agree to amend the following provisions of the Registration Rights Agreement as follows (the Agreement, as so amended constituting the "*Amended Agreement*"):

Section 6(b) is amended and superseded in its entirety by the following:

6 (b) *Restrictions on Public Sale by the Company.* The Company agrees not to effect any public sale or distribution of any of its equity securities, or any securities convertible into or exchangeable or exercisable for its equity securities (excluding in any case (i) any offering of the Company's securities pursuant to Rule 144A ("*Rule 144A Offerings*"), or any other recognized exemption from registration, under the Securities Act and (ii) registrations on Form S-4 or S-8 or any successor thereto and registrations on Form S-3 or any other applicable form relating to the registration of resales of securities acquired pursuant to Rule 144A Offerings) to the same extent and for the same period that the Company's executive officers and directors agree not to effect any sale of Company Common Stock following the effective date of any Specified Registration Statement. For purposes of the Amended Agreement, a "*Specified Registration Statement*" means a Registration Statement filed by the Company pursuant to a Demand Registration in which the Designated Holders of Registrable Securities are participating and such registration covers a firm commitment underwritten offering of at least \$50 million in Common Stock.

IN WITNESS WHEREOF, the undersigned have executed, or have caused to be executed, this Amended Agreement on the date first written above.

PRIMUS TELECOMMUNICATIONS GROUP, INCORPORATED

By: _____

Name

AIG GLOBAL SPORTS AND ENTERTAINMENT FUND, L.P.

By: AIG GSEF, L.P.,
its General Partner

By: AIG GSEF INVESTMENTS, LTD.,
its General Partner

By: _____

Name:
Title:

Registrable Securities

AIG GLOBAL EMERGING MARKETS FUND, L.L.C.

By: AIG Capital Management Corp.,
its Managing Member

By:

Name: Peter Yu
Title: Vice President

Registrable Securities

AIG GEM PARALLEL FUND, L.P.

By: AIG Capital Management Corp.,
its General Partner

By:

Name: Peter Yu
Title: Vice President

Registrable Securities

QuickLinks

[Exhibit 4.2](#)

[REGISTRATION RIGHTS AGREEMENT](#)

INDEPENDENT AUDITORS' CONSENT

We consent to the incorporation by reference in Amendment No. 2 to Registration Statement No. 333-110234 on Form S-3 of Primus Telecommunications Group, Incorporated and subsidiaries of our report dated February 27, 2003 (August 28, 2003 as to the effects of the adoption of Statement of Financial Accounting Standard (SFAS) No. 145 described in Note 2), which report expresses an unqualified opinion and includes an explanatory paragraph referring to the adoption of SFAS No. 142, "Goodwill and Other Intangible Assets," effective January 1, 2002, and SFAS No. 145, "Rescission of FASB Statements No. 4, 44, and 64, amendment of FASB Statement No. 13, and Technical Corrections," effective January 1, 2003, appearing in Primus Telecommunications Group, Incorporated's Current Report on Form 8-K, as filed with the Securities and Exchange Commission on September 5, 2003. We also consent to the references to us under the headings "Selected Financial Data" and "Experts" in such Prospectus.

DELOITTE & TOUCHE LLP

McLean, Virginia
January 13, 2004

QuickLinks

[EXHIBIT 23.1](#)

[INDEPENDENT AUDITORS' CONSENT](#)