



Catalogue no. 63F0002XIE — No. 44

ISSN: 1481-6466

ISBN: 0-662-34529-0

## Research Paper

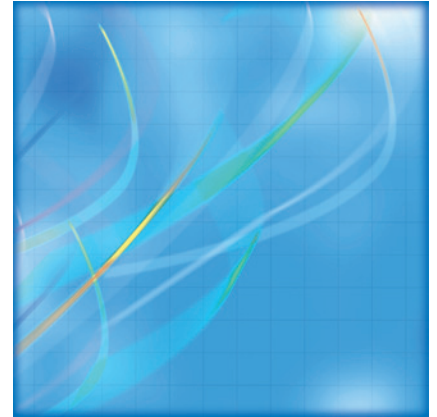
Analytical Paper Series — Service Industries Division

# Struggling to remain competitive: a study of factors impeding growth for Canadian Internet service providers

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July 2003

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Published by the authority of the Minister responsible for  
Statistics Canada

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## Abstract

Today, the phrases “Fierce competition” and “Internet access provision” are synonymous. The vastly changing Internet access market is no longer the domain of its original pioneers – the so called “traditional” Internet service providers.<sup>1</sup> As cable firms, telecommunication carriers and, more recently, wireless carriers flood the market; the business challenges facing firms classified to the ISP industry continue to mount.

Utilizing data from the 2001 Annual Survey of Internet Service Providers and Related Services, this paper examines some of these challenges by exploring various industry characteristics in conjunction with important issues for future growth. The primary focus of this paper revolves around the industry’s perception of factors that impede growth of their business and highlights the significant distinguishing characteristics between small, medium and large sized firms. Examination of responses from firms revealed five principal obstacles to growth: (1) Competition, (2) Cost-related impediments revolving around both ends of the ISP business – their links to consumers and their links to the Internet, (3) Delays in obtaining facilities from suppliers, (4) Access to financing, and (5) Access to Markets. The paper also contains background information on the demand and supply side of the Internet access market, financial performance analysis and structure of the ISP industry to provide additional context to the main analysis.

<sup>1</sup> Firms classified to the Internet Service Provider industry as defined by the North American Industry Classification System (NAICS 2002).

## Struggling to remain competitive: a study of factors impeding growth for Canadian Internet service providers

By Heather Archibald

The worldwide market for Internet services exploded during the late 1990s. Today, Internet use has become a daily routine for many Canadian households and businesses. In 2001, roughly 71% of Canadian businesses<sup>2</sup> used the Internet, and more than 5.8 million Canadian households had at least one member that regularly used the Internet from home.<sup>3</sup>

Internet service providers (ISPs) forged the way for Internet access services in the early 1990s, and they continue to play an important role in connecting Canadians to the Internet. They have the equipment and telecommunication network access required for a point-of-presence on the Internet.

In the Internet supply chain, ISPs act as the intermediary between the owners of the transmission networks over which Internet traffic flows and the growing number of business and residential Internet users. The core of the ISP business is based

on providing this access along with value added service that is largely dependent on the infrastructure offered by large telecommunications companies.

To access the Internet, a user pays a connection fee to the ISP. The vast majority of ISPs charge a flat monthly rate, and some impose a per-hour charge above a certain monthly threshold. In this intensely competitive market, ISPs can lose their customer base if they charge more for services that other firms provide more cheaply. In fact, many Canadians are not inclined to remain loyal to one ISP. A recent study conducted by Ekos Research Associates indicated that about “one in five subscribers are now on their third or fourth ISP since first obtaining home Internet access”.<sup>4</sup>

Although the ISP industry is still relatively young, survey results indicate it is already showing signs of maturity. The strong year-over-year growth in operating revenues achieved in the late 1990s and

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### The Annual Survey of Internet Service Providers and Related Services, 2001...

The survey is directed at firms whose main activity is the provision of Internet access services as defined by the North American Industrial Classification System (NAICS). It is important to note that firms in the cable and telephone sector who provide Internet access services as a secondary activity are not covered by this survey.

<sup>2</sup> -- Source: Statistics Canada, Annual Survey of Electronic Commerce and Technology, 2001. Science, Innovation and Electronic Information Division.

<sup>3</sup> -- 2001 Household Internet Use Survey.

<sup>4</sup> -- Ekos Research Associates "Re-thinking the Information Highway" Canadian study. July, 2002.

into the new millennium is beginning to slow down. Operating revenues increased 27% to \$1.27 billion in 2001, only about half the 42% gain achieved between 1999 and 2000. This is not surprising since the rate of increase in Internet adoption at the household level also slowed considerably in 2001, which was definitely a contributing factor.<sup>5</sup>

Despite this growth in operating revenues, Canadian ISPs are struggling to turn a profit. About 46% of all ISPs surveyed reported a loss in 2001. Some of the contributing factors were: intense competition; a slow-down in Internet adoption rates; and

significant infrastructure investment (since the introduction of high-speed access).

The high volumes of acquisitions and mergers in this industry have directly contributed to the total number of ISP firms decreasing by 9% in 2001. Many of the small ISPs have quietly exited the market. Today, there are 256<sup>6</sup> firms classified to the Internet Service Provider Industry.

To understand better the challenges ISPs face in the current marketplace, a closer look at the players in this industry follows.

**Table 1.**  
*Major Variables (surveyed portion)*

	2000	2001
Number of establishments	281	256
Number of paid employees	6,488	7,357
Employees per establishment	23	29
Total operating revenue (millions)	997.8	1,268.3
Total operating expenses (millions)	1,136.3	1,550.0
Operating margin	-13.9	-22.2

**Industry Structure:**

Three different industry suppliers dominate the Internet access market today. In one arena are cable access providers, the first to offer high speed Internet services to the residential access market.

The rate of adoption of cable Internet has progressed rapidly since 2000 (+76.5%) as a result of the growing demand for high-speed Internet access. This market is predominantly the

**Dial-up: Declining, but not dead**

Despite significant increase in broadband access revenues (38% of revenues in 2001, compared with 26% in 2000) — Dial-up Internet access, though on the decline...remained a central part of the ISP business, generating 49% of total ISP revenues in 2001.

Technologies such as DSL (digital subscriber line) and Internet over cable networks enable Internet users to transmit information at a much faster speed.

There are two main reasons why high-speed is so attractive to users. Information can be transferred many times faster than with traditional dial-up access. Furthermore, High-speed service doesn't tie up telephone lines so there is no need to invest in a second line. However, dial-up still has its advantages: it is less expensive than DSL or cable, it is much more accessible (DSL and cable are not accessible everywhere across the country), users can dial-up anywhere (hotels etc.) and benefit from increased mobility and portability.

<sup>5</sup> — SIEID; 2001 Household Internet Use Survey (HIUS).

<sup>6</sup> — This number represents the surveyed portion of establishments.

domain of cable operators, with only a small percentage of ISPs reselling cable access. Cable Internet providers are increasingly capturing a greater share of Canada’s Internet access market. In 2001, they generated just over \$429 million in high-speed access revenues.<sup>7</sup>

In another arena are large telecommunications carriers, commonly referred to as telcos. These firms provide the network infrastructure to ISPs. In the beginning of the Internet age,

these firms were slow to compete directly in the business and residential access markets. They predominantly played the role of “suppliers” in the Internet access chain. These days they are capturing an ever increasing share of the market and compete directly with the very firms they supply – firms classified to the ISP industry. Telecommunication carriers clearly have the financial and capital resources along with telecommunication know-how to be successful in this industry. These firms generated just over

\$325 million in access revenues in 2001.<sup>8</sup>

Finally, there are the traditional ISPs, or as they’re more commonly known, the “Independents”. These ISPs are the ones covered by the Annual Survey of Internet Service Providers and Related Services and their characteristics are described in this article.

These three industries combined, generated just over \$2.0<sup>9</sup> billion in Internet access revenues in 2001.

### Firm size<sup>10</sup> - an important distinguishing trait of ISPs

Firm size is an important distinguishing characteristic of Canadian ISPs. For the purpose

of this article, firm size is measured in terms of total

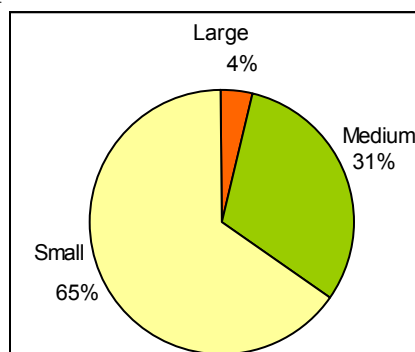
operating revenues, as illustrated in the following table:

**Table 2.**  
*Distribution of firms by size class*

ISP Revenue Group	Total operating revenues	Percentage (%) of total surveyed firms
Small	Less than \$1,000,000	65%
Medium	\$1,000,000 to \$10,000,000	31%
Large	More than \$10,000,000	4%

### Large firms generate the bulk of revenues

Although the ISP industry is predominantly made up of small and medium-sized firms, it is the larger players who dominate the business. Together, small and medium-sized firms represented about 96% of the survey population (Chart 1), but



**Chart 1.**  
*Percent of ISPs by firm size*

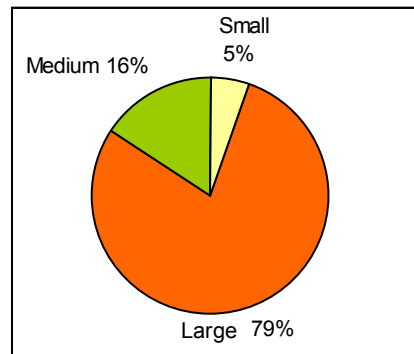
<sup>7</sup> – SIEID; Statistics Canada, 2001 Annual Return for Broadcasting Distribution Licenses.

<sup>8</sup> – SIEID; Statistics Canada, Annual Telecommunications Survey (2001).

<sup>9</sup> – Statistics Canada (2001).

<sup>10</sup> – Some firms may have more than one establishment. Comparisons of firm size are based on the responses of 242 ISP firms..

generated only 21% of industry operating revenues. Large firms, however, though small in numbers (4% of the surveyed population) contributed a whopping 79% of total operating revenues in 2001 (Chart 2).



### ■ Small and medium-sized firms achieve higher margins

Even though larger firms generate the bulk of industry revenues, small-and-medium-sized firms tend to be more profitable. Roughly 60% of small and medium sized firms recorded a profit in 2001 compared with only 9% of large firms. A contributing factor is the fact that small and medium ISPs appear to have greater scope at differentiating their operations and diversifying their services. They tend to generate revenues from a greater variety of services than do their larger counterparts. Nearly 90% of small and medium-sized firms

generated revenues from services in addition to Internet access. In fact, these firms generated revenues from an average of between five to ten services other than Internet provision.

Access alone counted for 87% of ISP industry revenues in 2001. But only 10% of all ISPs generated all of their revenues from the provision of Internet access. Most firms (about 90%) generated revenues from other services in addition to Internet access.

**Chart 2.**  
*Percent of ISP revenues by firm size*

#### How do you define high, medium, or low?

For the purpose of this analysis, responses were based on the following scale of 1-5...

- 1 or 2 = Low impediment
- 3 = Medium
- 4 or 5 = High impediment

### Factors Impeding Growth

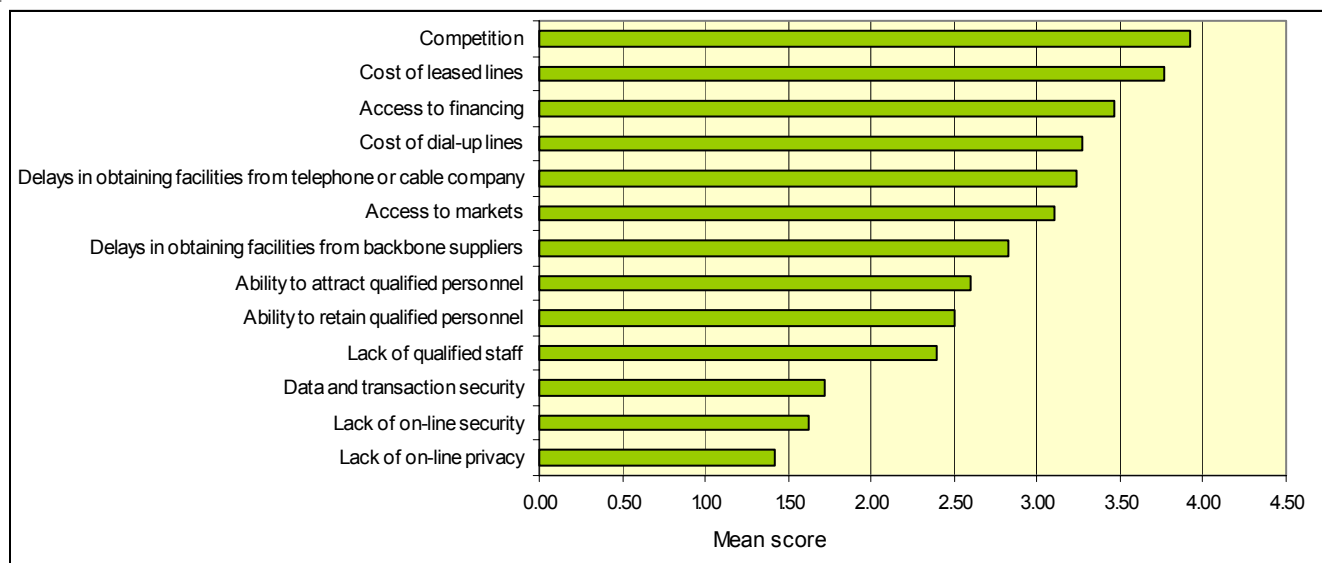
ISPs were asked to rate to what extent various factors impede the growth of their Internet services. There were 14 potential factors from which to choose, plus an "other" category in which respondents could specify in writing any other particular growth impediments facing their organization. Respondents rated

each factor on a scale of one to five, with one representing a low impediment to growth and five representing a high impediment.

The main factor impeding growth was competition, followed by cost-related factors. The following sections elaborate on each of the factors.



**Chart 3.**  
Factors impeding growth, 2001



### ■ Competition

*"In business, the competition will bite you if you keep running; if you stand still... they will swallow you."*

- Victor Kiam

The above quote is a good reflection of what is happening in today's ISP market. The most frequently cited high impediment to growth in this industry was competition, with 60% of all ISPs rating it as either 4 or 5. All the large firms (those with revenues \$10 million or more) reported this to be their greatest barrier to

growth. Also significant, was that two-thirds (65%) of medium-sized firms and 56% of small firms also stated that competition was their greatest impediment.

The structure of the ISP industry in Canada has changed dramatically in the last few years. The number of access providers has shrunk and large players such as telcos and cable companies have entered the market creating

an environment of intense competition and a battle for subscribers. One of the strategies that has been used to lure subscribers from competitors is pricing access services at or near the cost of providing these services. This is one reason that the industry continues to post operating losses, and helps explain why ISPs rate competition as their chief impediment to growth.

### ■ Cost-related impediments

As can be expected, cost-related impediments were the second most highly rated barrier. After competition, the two principal areas of concern for ISPs revolved around costs at both ends of the ISP business – their

links to consumers and their links to the Internet.

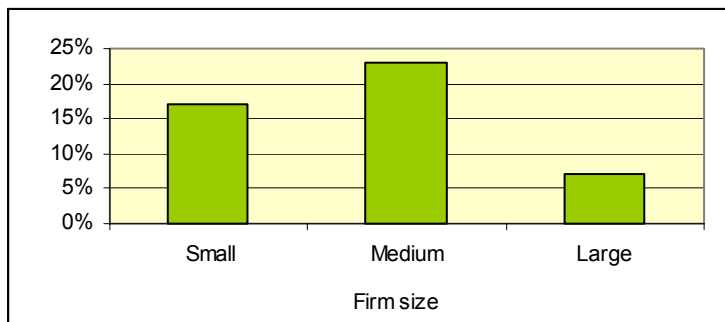
ISPs have sustained steady worsening operating margins over the past few years, due in large part to high expenditures

associated with providing Internet access services. Industry operating expenses grew to \$1.55 billion in 2001, a 36% increase from 2000, significantly more than the 27% increase in operating revenues.

A large proportion of ISP expenditures stem from the cost of leased lines. In 2001, telecommunications expenses, including dial-up line charges, equipment charges, and leased line charges from upstream providers represented about 31% of industry expenses.

About 53% of all respondents reported that the cost of leased lines from upstream providers was a significant barrier (Chart 4). Small ISPs in particular perceived this to be their highest impediment to growth, rating it slightly higher than competition.

The cost of dial-up lines was an equal area of concern, with 42% of all ISPs reporting this as an overall high barrier to growth. Small and medium firms were most likely to perceive this as a high barrier. The data seems to suggest that larger firms appear better able to absorb these costs.



#### ■ Delays in obtaining facilities from suppliers

The term “facilities” refers to the dial-up access servers or switches that are owned by either facilities-based ISPs or telcos. Many of the ISPs surveyed are not facilities-based which means they do not own any dialup access servers or switches. Instead, they are completely reliant on someone else to deliver the access service that they, in turn, resell to their business or residential consumers.

Delays in obtaining facilities from suppliers appeared to be a relatively high area of concern for many of the small and medium ISPs in 2001. More than half of all medium-sized firms reported delays in obtaining facilities from

telephone or cable company as a high impediment.

On the other hand, delays in obtaining facilities from backbone suppliers was less of an issue, as only 24% of all ISPs reported it as a high barrier. A backbone supplier provides access to high-speed transmission lines that make up the backbone of the Internet. Different from an ISP, which provides users access to the Internet, a backbone provider supplies ISPs with access to the lines, such as T1 or T3 lines, that connect ISPs to each other, allowing the ISPs to offer their customers Internet access at high speeds.<sup>11</sup>

#### Chart 4.

*Leased line charges from upstream provider as a percentage (%) of total expenses*

<sup>11</sup> – This definition comes from the following ISP Glossary. [www.webopedia.com](http://www.webopedia.com)

## ■ Access to financing

The fourth most frequently selected factor impeding growth was access to financing.

Interestingly, size class had no bearing on how this factor was rated. About 42% of each size group rated this as an overall significant obstacle to growth. The majority of the remainder rated it as a medium-range impediment.

Traditionally, institutional capital in the ISP sector has gone to national networks and consolidators.<sup>12</sup> Generally speaking, it appears that most

venture capitalists focus their Internet access-related investments in mid-to-large-size companies, and the majority of such investments are acquisition related. This leaves the majority of ISP firms struggling to grow and prosper without the help of financing. Coupled with the fact that the Canadian economy exhibited a strong trend towards cost cutting and a cautious approach to capital investment in 2001, it was not surprising to see access to financing rated as a relatively high barrier.

## ■ Access to markets

Access to markets was selected by 41% of the respondents as a high area of concern. It was interesting to note that large firms (67%) were most likely to rate this as a high barrier. Of the small firms, 43% rated this as a high barrier to growth. It appears that smaller firms tend to rely more heavily on the residential dial-up market than their larger counterparts, and experience difficulties in entering the broadband market. In fact, the inability to provide high speed access was frequently cited as an obstacle to growth in the comments section of our questionnaires. As a relatively new technology, high-speed

access is considerably more expensive to roll out as it requires significant infrastructure investment.

Expanding the Internet market certainly appears to be more difficult than it was in the past. The larger ISPs often own their own networks or facilities and tend to be the leaders in new technologies. Small and-medium-sized firms, the majority of which are resellers, must often play catch-up with the rest of the market (high-speed is a perfect example). Despite their struggles, small and medium-sized firms appear more likely to provide a more personal and

## Low regulation

Contrary to many other industries, there is very little regulation within the ISP industry. This is an environment that fosters universal access, growth and competition.

In May 1999, the Canadian Radio-Television and Telecommunications Commission (CRTC) decided that it would not regulate any portion of the Internet.<sup>13</sup>

<sup>12</sup> – "Too Much Investment Chasing Too Few Opportunities" by Ted Stevenson. ISP-Planet. October 28, 1999.

<sup>13</sup> – *Canada: Internet Usage*. International Market Insight (IMI) Series. By Annie Crombie, Marina Sistovaris. 1999.

customized service to their clients, which allows them access to niche markets.

About 29% of ISPs surveyed chose to express their greatest

barriers to growth in the write-in section of the survey question. Of these firms, 17% were medium-sized firms and 83% were small firms. The most frequent barriers cited here were

“having to compete with our major suppliers” and “irrational resell pricing for DSL and cable service.”

## Low Barriers to growth....

### ■ Ability to attract and retain qualified personnel

In the past, the ability to draw highly skilled personnel at a reasonable cost was a major issue in the information and communications technology (ICT) sectors of the economy. This does not appear to be the case in 2001, with most ISPs concerned but not overly worried about this factor contributing to the growth of their businesses.

Today's ISP industry employs 7,357 people, up 13% from 2000. Firms spend an average of \$1.9 million on employee salaries, wages and benefits. These totaled \$453.9 million for the overall

industry (representing 29% of total operating expenses) in 2001. The average salary for the industry climbed 27% to \$61,700.

Large firms differed from their medium and small counterparts in their ability to attract and retain staff. More than half of all ISPs (54%) rated lack of qualified staff as an overall low impediment to growth. Larger firms are able to pay their employees higher salaries than their smaller counterparts. Even so, 44% of these large firms considered this issue a medium barrier to growth,

showing more concern than small and medium-sized firms.

Ability to attract qualified staff was ranked further down the list of barriers for small and medium-sized firms. However, 44% of the large firms considered this to be a medium-range barrier. Of the large firms, 56% also considered the ability to retain qualified personnel a medium-range barrier to growth, while 63% of the medium-sized firms and 40% of the small considered it to be an overall low impediment.

### ■ Data and transaction security

The factor data and transaction security was given an average score of 1.7 for the overall industry which is quite low. Only 7% of ISPs considered this factor

a high impediment to growth, while roughly 70% of all ISPs considered this an overall-low barrier to growth. It appears that in today's market, ISPs feel they

take the necessary precautions and implement the appropriate tools and technology to ensure for the safe exchange of data and transactions over their networks.

## ■ Security and privacy issues

Only 4% of the survey population considered on-line security as a high barrier to growth. The few firms that did cite it as a concern tended to be very small ISPs. Lack of online privacy was even less of an issue with a mere 2% of those surveyed, rating it as a high barrier. This is not to suggest that ISPs don't regard the protection of personal information and online privacy as highly important. Instead, it may indicate that ISPs have access to adequate technologies for protecting the security of their clientele.

**Table. 3**

*Impediments to growth by firm size*

	Considered High Impediments (ranked as 4 or 5)			
	All Firms	Small (Less than \$1 million)	Medium (\$1 million - \$10 millions)	Large (more than \$10 millions)
Competition	60%	56%	65%	100%
Cost of leased lines from upstream providers	53%	57%	47%	44%
Cost of dial-up lines	42%	46%	33%	33%
Access to financing	42%	42%	42%	44%
Delays in obtaining facilities from telephone or cable company	43%	36%	55%	43%
Access to markets	41%	43%	32%	67%
Delays in obtaining facilities from backbone suppliers	24%	23%	25%	22%
Ability to attract qualified personnel	24%	22%	31%	11%
Ability to retain qualified personnel	17%	19%	12%	11%
Lack of qualified staff	19%	21%	19%	0%
Data and transaction security	7%	8%	5%	0%
Lack of on-line security	4%	6%	1%	0%
Lack of on-line privacy	2%	2%	1%	0%

## Summary

Though facing a myriad of challenges, Internet service providers continue to meet the changing and sophisticated needs of Canada's Internet users.

Expanding the Internet market is definitely more difficult than it was in the past. Intense competition, cost-related impediments and access to markets are some of the most

frequently cited contributing factors. Expectations for future growth are mixed, with slightly more than half of the firms surveyed predicting revenue growth for 2002. In attempts to increase market share and subscriber base, ISPs have learned to diversify themselves by offering an array of services. Some of the most common services offered include web site

hosting, web page design, and domain name registrations services.

In 2001, smaller firms tended to rely more heavily on the residential dial-up market than their larger counterparts and generated the lion's share of their revenues from dial-up access. Only 40% of smaller firms provide high-speed access. While

the market for high-speed Internet access is still at an early stage of development, it continues to grow and independent ISPs will have to move quickly if they hope to capture a piece of this market from their larger rivals in the telecommunications and cable industries.

Differentiation and financial performance will become increasingly important. The key to survival for small and medium-sized ISPs in this highly competitive environment will be their ability to continue innovating in technology and services, and to move quickly in identifying and exploiting new market opportunities before their larger rivals.<sup>14</sup>

<sup>14</sup> – "Independent ISPs face rough ride as competition intensifies" - written by Nathalie Dargan of Analysys Research Limited. February, 1999. Cambridge, UK.

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