

**eBusiness in the Pulp & Paper Industry:
A Comparison of the United States & Canada**

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Introduction

The Internet is such an integral part of our lives that it seems difficult to imagine that it has been only been since 1993 since its use became commonplace. Although Internet usage figures change daily, the world total figure for August 1999 was approximated at 195 million users (Nua Internet Surveys 1999a). The Internet continues to experience explosive growth, both with regards to the number of users and the revenues generated by the Internet industry.

Of particular interest for the business community is eBusiness (short for electronic business). As defined by Forrester Research, eBusiness consists of "online and traditional business activities that use Internet technologies to support communication, collaboration, service and trade". The importance of electronic trade was recognized by the U.S. government in its report "The Emerging Digital Economy" as early as April 1998, pointing to the \$8 billion of business-to-business online trade conducted in 1997. In 1999, business-to-business eCommerce in the U.S. was \$149 billion and is projected to be \$7.3 trillion by 2004 (Gartner Group 1999).

Specifically for business-to-business markets, eCommerce, or the buying and selling of goods and services on the Internet, is also believed to increase the competitiveness through reinforced partnerships and enhanced relationships (Ovum Ltd. 1999).

EBusiness success comes from a company's ability to take full advantage of Internet marketing opportunities, addressing market segmentation, promotion, distribution, pricing, information management, and customer satisfaction.

Although Canada may be overshadowed by the U.S.'s position as a major player in the Internet economy, the Canadian government has set an ambitious agenda to make Canada the most wired country in the world by the next millennium, through heavy investment in infrastructure and educational programs (Nua Internet Surveys 1999b).

Research context

A study was conducted in 1999 to study eBusiness in the pulp and paper industry in the United States and Canada. Three hundred companies were surveyed.

Data Collection

Mail questionnaires were used to conduct the study. A list of questions was generated for the survey instrument drawing from concepts and questions developed by the researcher in previous studies or adapted from other sources. The survey was reviewed and revised by the researcher, in addition to undergoing pre-testing by a sample of five companies.

The questionnaires were mailed to companies selected from the Lockwood-Post 1998 Directory of the Pulp and Paper Industry (1999). Pre-addressed, postage-paid envelopes, and a personally signed cover letter were included with the questionnaire. In addition, a copy of an article on Internet use in the forest products industry (Vlosky and Fontenot 1997) was included as a means of encouraging participation. The cover letter also promised summary results of the study for completing and returning the questionnaire. The study results are based on two mailings with all surveys sent to pre-identified key informants by name and title. All industry survey respondents were surveyed at the corporate headquarters level.

Response Rates

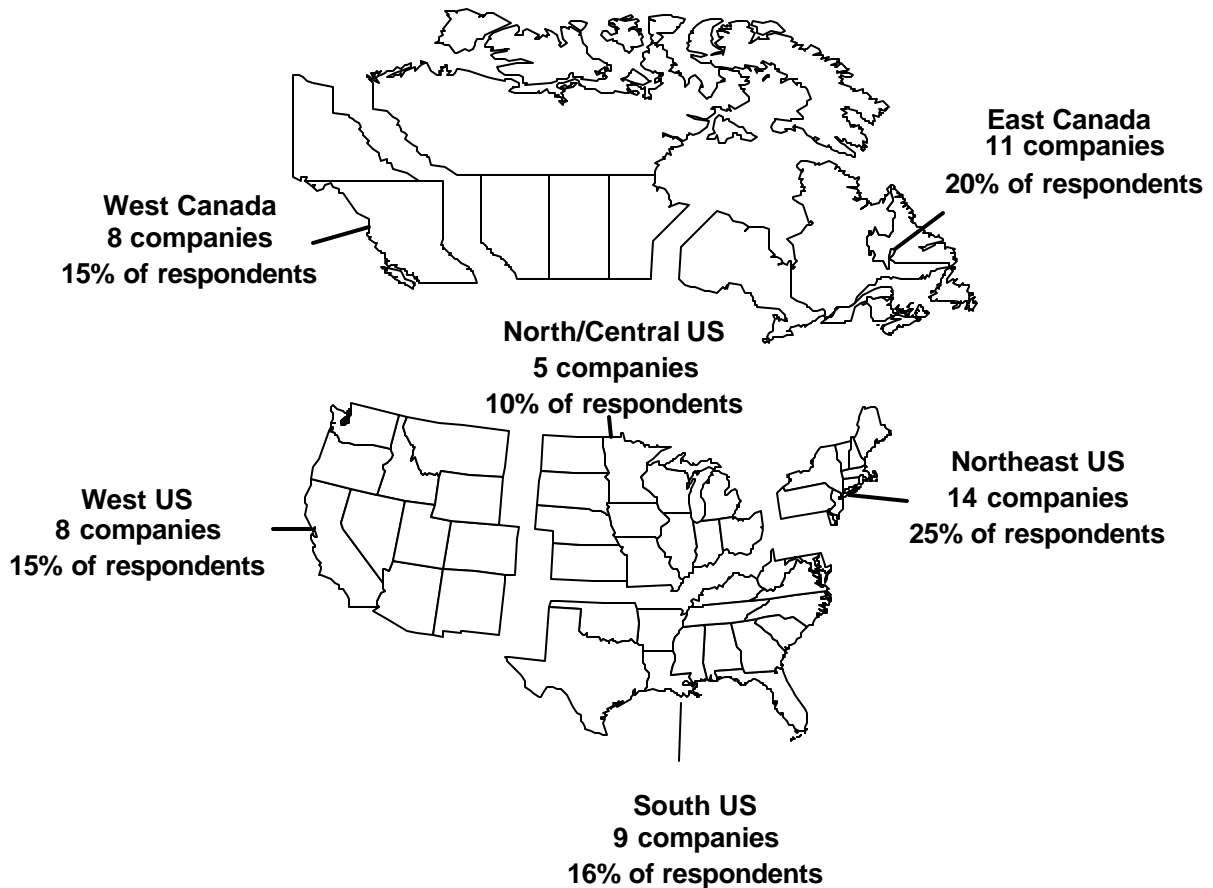
Overall, the adjusted response rate after accounting for non-deliverable surveys (due to company closures, change of address or deceased) was 18 percent. Given that typical response rates for industrial studies range from 15-35 percent (Adams 1986, Donald 1960), a response rate of 18 percent in this study is considered adequate. Tests for non-response bias were performed and none was detected.

Respondent Geographic Distribution

Figure 1 shows the geographic distribution of the study respondents who indicated their corporate locations. All regions of the United States and Canada are well represented in the study.

Figure 1.

Responses by Geographic Region (overall response rate=18%)



Respondent profile

Respondents on average are represented by large companies (**Figure 2**).

Figure 2.

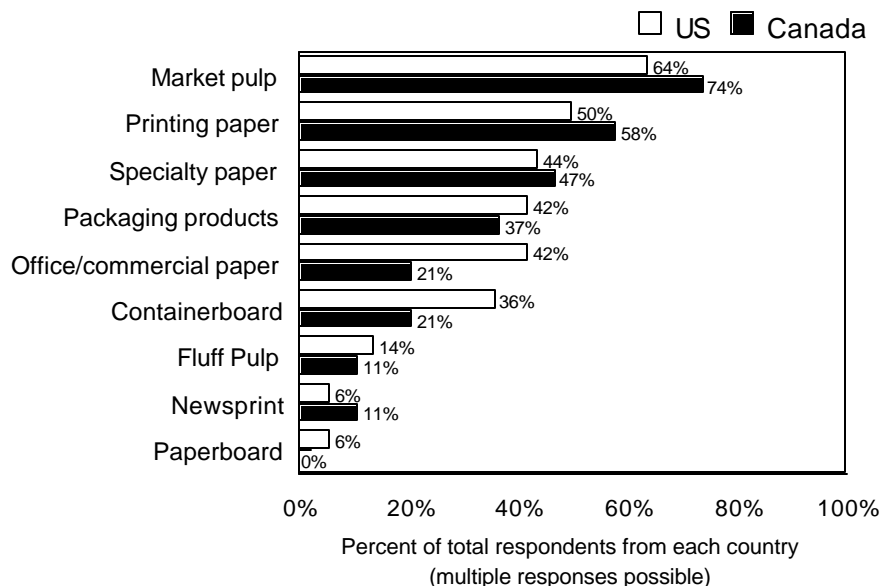
Partial List of Companies-Pulp & Paper

Boise Cascade Corp.
Bowater Inc.
Canadian Forest Products Ltd.
Champion International Corp.
Crown Vantage Inc.
Daishowa Forest Products Ltd.
Domtar Inc.
Donohue Inc.
Fibreco Pulp Inc.
Fletcher Challenge Canada Ltd.
Jefferson Smurfit Corp.
Longview Fibre Co.
Potlatch Corp.
Slocan Forest Products Ltd.
The Celotex Corp.
Union Camp Corp.
Willamette Industries Inc.

Respondents produce a variety of products (**Figure 3**). Market pulp is the most frequently manufactured product for respondents from both countries followed by printing paper and specialty paper. A larger percentage of Canadian respondents produce commercial paper and containerboard.

Figure 3.

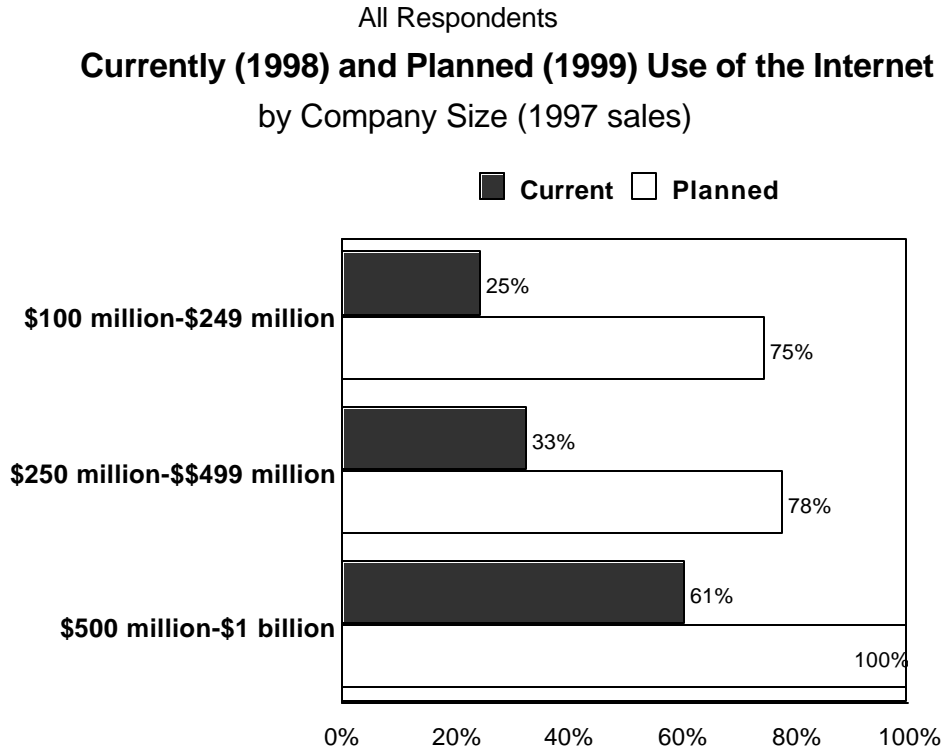
Respondent Major Product Categories - Pulp and Paper



Use of eBusiness

Ninety-two percent of U.S. respondents said their companies used the Internet to conduct business in 1998 while 89 percent of Canadian respondents did so. Overall, for the entire respondent set, larger companies were most likely to have already adopted Internet technologies and are also more likely to do so in the future (**Figure 4**).

Figure 4.



Implementation of Internet capabilities by respondents has taken place in the recent past. **Figure 5** shows that 82 percent U.S. respondents and 78 percent of Canadian respondents developed these technologies in the previous three years from when the study was conducted. U.S. companies implemented the Internet earlier. Overall, using bivariate correlation analysis, implementation (before 1996) was found to be positively and significantly correlated to company size (at $\alpha = 0.05$) with larger companies, typically lead adopters of technology, implementing earlier.

With regard to investments made to date (up to 1998) in Internet capabilities, just 10 percent of U.S. respondents spent less than \$10,000 while a third of Canadian respondents spent the same amount (**Figure 6**). Twenty-four percent of U.S. respondents spent more than a million dollars on Internet development while the most any Canadian respondent spent was a quarter million dollars.

Figure 5.

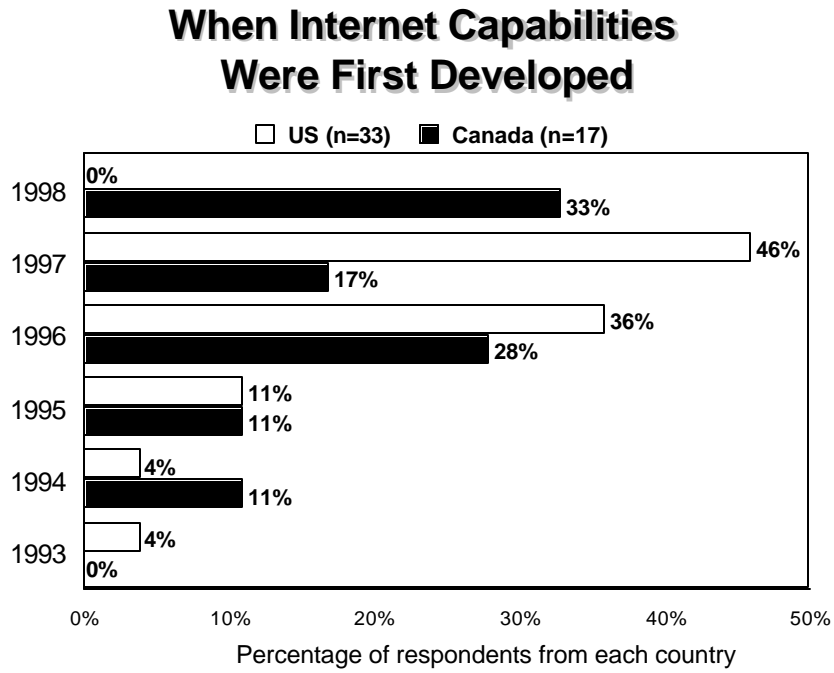
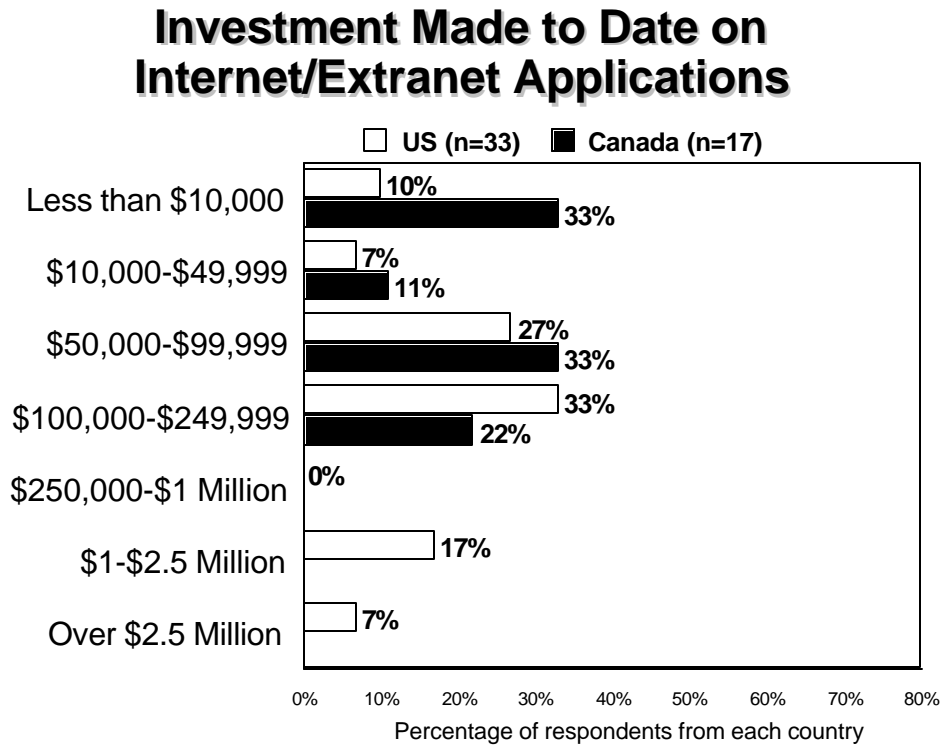


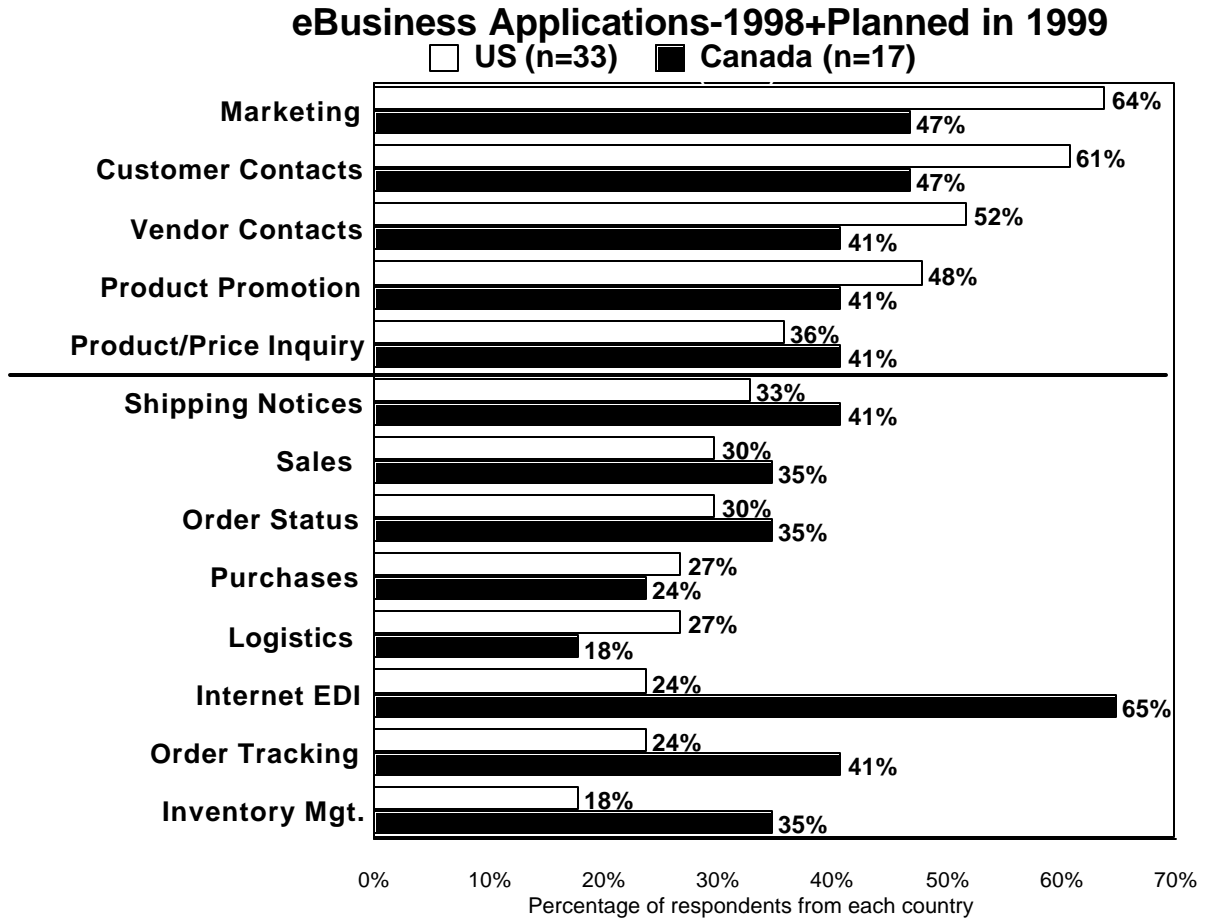
Figure 6.



eBusiness Applications

When combining what respondents were doing in 1998 and their plans for 1999, marketing was the most prevalent application facilitated by the Internet respondents from the U.S while Internet EDI was top ranked for Canada (Figure 7). Other frequently implemented applications have to do with basic functions such as web page development, promotion, basic marketing, and inquiries as well as “higher order” eBusiness applications such as eCommerce, logistics, Internet-EDI, inventory management, etc.

Figure 7.



Benefits of implementing eBusiness

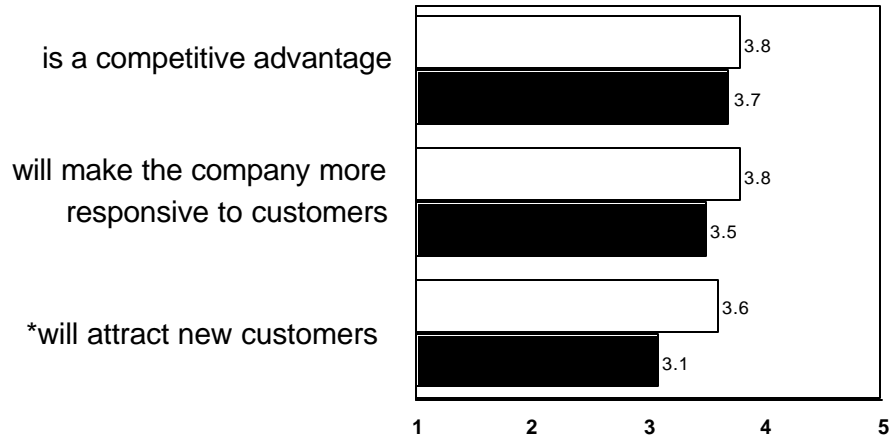
With few exceptions, respondents were fairly consistent in the perceived benefits from reaching customers through the Internet (**Figure 8**). The highest score for any perceived benefit was only 3.8 on a 5-point Likert-type scale indicating a lack of overwhelming belief in customer-oriented Internet benefits. The benefits of offering a competitive advantage and responsiveness to customers were top ranked benefits. Only cost reduction scored at 3.0 (neutral).

Figure 8.

Perceived Benefits of Reaching Customers via the Internet

Scale: 1=strongly disagree to 5=strongly agree

□ US (n=36) ■ Canada (n=19)

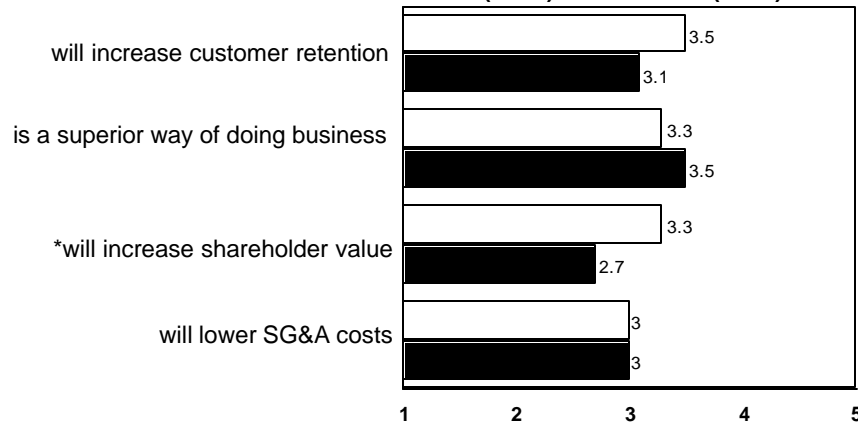


* - difference is statistically significant for alpha=5%

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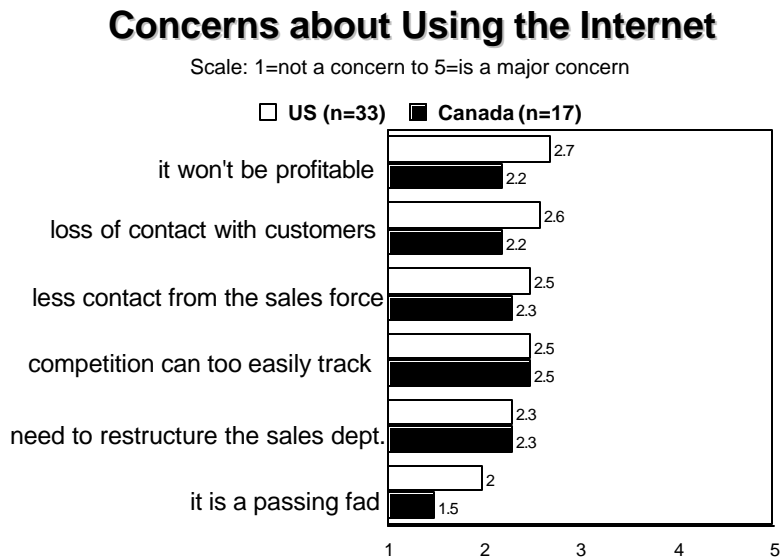
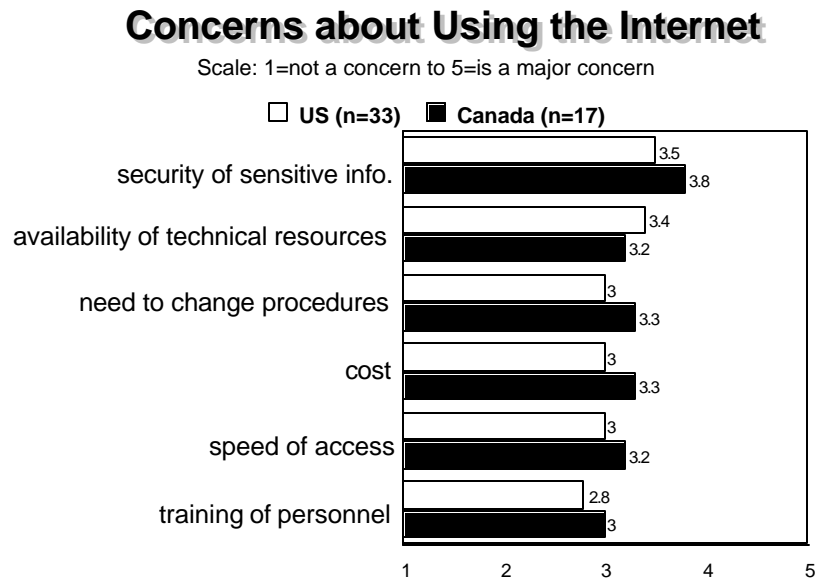
* - difference is statistically significant for alpha=5%

Concerns and impediments to implementation

As is the case with the adoption of any new technology or practice in a company, especially one that can have such far-reaching implications, respondents had some concerns about the Internet. As has been found to be the case in previous Internet studies (Lewis 1994, Pitis 1999, Vlosky and Fontenot 1997, Vlosky 1998, Vlosky and Gazo 1996), concern about security of information ranks highest on the list (**Figure 9**).

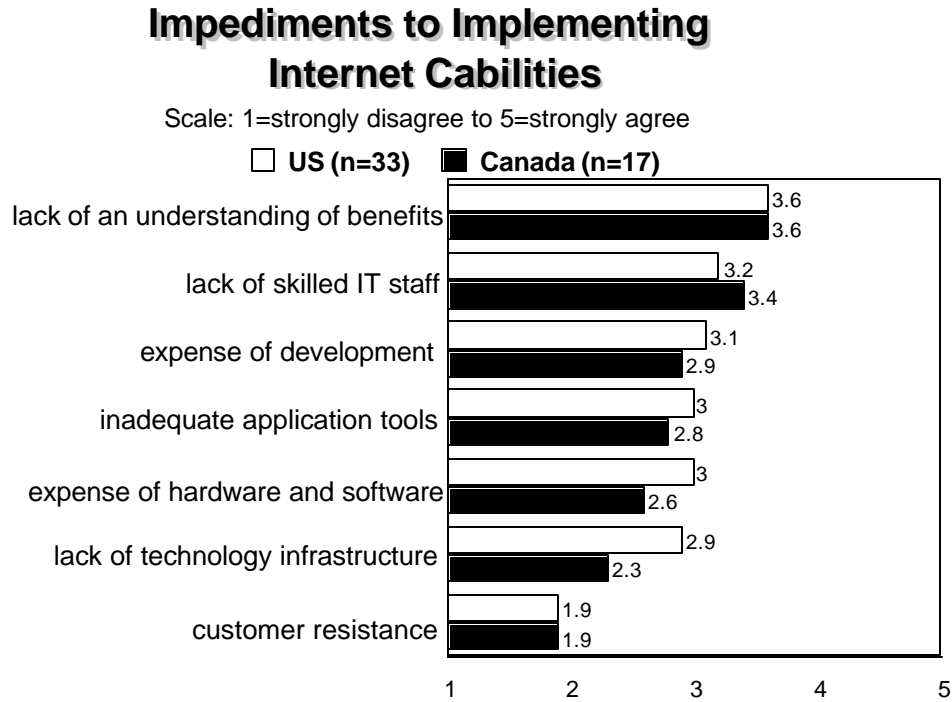
A lack of technical resource requirements ranked second on the list of concerns. Most concerns ranked at, or below, neutral (3.0 on a scale of 1=not a concern to 5=is of great concern) for respondents from both countries, include the possible loss of contact from the sales force, lack of profitability, and need to restructure the sales department. Ranked last is the concern that the Internet is a passing fad, although U.S. respondents scored statistically significantly higher than Canadian respondents.

Figure 9.



Respondents from both countries ranked a lack of understanding of benefits as the main impediment to successful Internet implementation. Aside from U.S. respondents facing a lack of skilled information technology (IT) staff to manage Internet implementation, and a slight agreement that expense of development is a problem, there were no significant perceived impediments to eBusiness implementation (**Figure 10**). Overall, respondents indicate little resistance from customers in implementing Internet capabilities, the least ranked issue.

Figure 10.

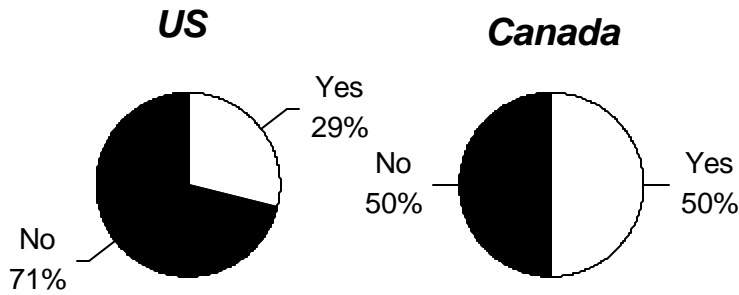


Finally, respondents were asked whether Internet implementation was on schedule and whether or not they had received the anticipated benefits (**Figure 11**). Twenty-nine percent and 50 percent of respondents from the U.S. and Canada, respectively, said that they were where they wanted to be in implementation. With regard to receiving the desired benefits, a majority of respondents (62 percent of U.S. respondents and 57 percent of Canadian respondents) said that they had not received the expected benefits.

Figure 11.

Is your company where it wants to be in implementing Internet capabilities?

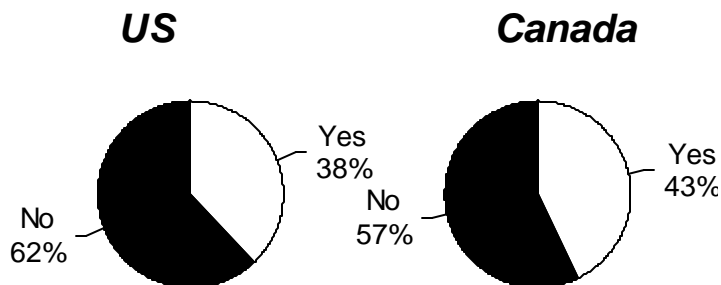
US (n=33) Canada (n=17)



Percentage of respondents from each country

If your company has an Internet capability, have the desired benefits been received?

US (n=33) Canada (n=17)



Percentage of respondents from each country

Summary

This study indicates that Canadian and U.S. pulp and paper respondents were fairly evenly matched in Internet implementation in 1998. They had similar concerns and faced similar impediments.

References

- Adams, J.S. 1986. "An Experiment on Question and Response Bias". *Public Opinion Quarterly*. 20(Fall). pp. 593-598.
- Computer Industry Almanac Inc. 1999. "Over 150 Million Internet Users Worldwide at Year-end 1998", n.d., < <http://www.c-i-a.com/199904iu.htm>> (September 27, 1999).
- Donald, M.N. 1960. "Implications of Non-Response for the Interpretation of Mail Questionnaire Data". *Public Opinion Quarterly* 24 (Spring). pp. 99-114.
- Gartner Group. September 1999. "Gartner says 75 percent of eBusiness will fail". *InfoWorld Electric*, <<http://www.infoworld.com/cgi-bin/displayStory.pl?990923.iigartner.htm>>, (October 2, 1999).
- Lewis, Peter H. 1994. "Internet for profit; businesses rush to capitalize on the Internet," *Computer Shopper*, Vol. 14 ; No. 11 (November), 178.
- Miller Freeman 1998 Directory of the Wood Products Industry. 1999. Miller-Freeman, Inc. San Francisco, California.
- Nua Internet Surveys. 1999a. "How many online?", n.d., <www.nua.ie/surveys/how_many_online/index.html> (September 29, 1999).
- Nua Internet Surveys. 1999b. "The E-Maple Leaf", n.d., <http://www.nua.ie/surveys/analysis/weekly_editorial/archives/issue1no70.html> (September 25, 1999).
- Ovum Ltd. 1999. "Business-to-Business Electronic Commerce: Opening the Market", 13 January 1999, <<http://www.ovum.co.uk/ovum/news/exe3pr.htm>> (October 1, 1999).
- Pitis, Olivian T. 1999. "U.S. Forest Products Exporters and the Information Superhighway". Master Thesis. Louisiana State University, Baton Rouge, LA.
- Vlosky, Richard P. 1998. "An Update on Internet Applications in the North American Forest Products Industry". Final Report to Sponsors. 150 pp.
- Vlosky, R.P. and Rene'e Fontenot. 1997. "The Internet and The Forest Products Industry: Current Status and Projected Trends." *Forest Products Journal*. Vol. 47. 11/12. Pp. 33-40.
- Vlosky, R.P., and Rado Gazo. 1996. "The Internet and the Forest Products Community: The Role of the Forest Products Society." *Forest Products Journal*. Vol. 46. No. 5. pp. 19-26.