

TEXAS BUSINESS REVIEW

Bureau of Business Research • College and Graduate School of Business •
The University of Texas at Austin
APRIL 1998

On-line Recycling: Waste/Material Exchange in the Electronic Information Age

Mina M. Dioun
Head, Natural Resources Program
Bureau of Business Research
University of Texas at Austin

In recent years, public concern for environmental quality, high compliance and disposal costs, and reduction of landfill space has prompted many manufacturers and businesses to consider recycling or selling their wastes and to use recycled materials in their processes or activities. A major concern is finding buyers and sellers for these materials.

Enter Waste/Material Exchanges. Clearinghouses of information about “needed” and “available” materials, WEXes are partnerships between business and government to bring seller and buyer together. Most WEXes list all kinds of materials and products—regardless of type, purity, or size—at no cost to the seller. Such services are especially helpful for small manufacturers who often lack access to information.

Survey of the WEXes

Despite the benefits, many manufacturers and businesses do not use WEXes services. Why? How can WEXes increase their efficiency and use? And what role can the World Wide Web play in more effective use of WEXes?

We addressed these questions in a survey mailed to more than 75 WEXes in the United States, Canada, and New Zealand in November 1997. All of the 23 respondents (a 31 percent response rate) indicated that they serve their regional markets, but only 40 percent limited their activities to regional markets. In addition, 61 percent described their activities as nationwide; 48 percent, global.

When WEXes were asked why more firms do not use their services, more than 40 percent ranked the lack of information about the WEXes as the most important factor. According to other respondents, the most important factor was a concern about the liability associated with trading these materials (22 percent), uncertainty about the quality of materials (13 percent), and factors, such as time, effort, and availability (25 percent).

As to how WEX can become more efficient and widely used, 43 percent ranked the *availability of enough resources for the WEXes to inform potential customers about their services* as the most important factor, while 39 percent listed the awareness of the potential buyers and sellers about the WEXes. Interestingly, 13 percent ranked exchanging entirely on the Internet as the most important factor.

Recycling Via the Internet

The Internet offers a very efficient medium for finding customers and products around the globe. The Chicago Board of Trade (CBOT) opened its first electronic market for wastes in October 1995. After sellers post their list and buyers enter the material needed, the CBOT system automatically creates a list of matches and sends an e-mail to the buyer. Currently, most WEXes use their Web sites on the Internet for on-line information. In

the near future, the Internet may become a virtual global marketplace for recycled and secondary materials, with all exchanges made electronically.

According to our survey, 91 percent of the respondents publish their lists of “needed” and “wanted” materials on the Internet and some even provide on-line exchange opportunities. Some WEXes use more than one method to issue information: 87 percent of the respondents send a periodic paper catalog to their subscribers, about 13 percent use an electronic bulletin board system, and 35 percent incorporate a variety of other methods.

Since 1988, the Resource Exchange Network for Eliminating Waste (RENEW) of Texas Natural Resources Conservation Commission (TNRCC) has performed the waste exchange activities and promoted recycling and reuse. The quarterly RENEW catalog, distributed to 5,800 subscribers free of charge, is published on TNRCC’s Web site.

Recycling/Reusing Electronic Products

According to the 1996 Electronic Industry Environmental Roadmap, more than 12 million computers are discarded annually. This report cites a 1991 Carnegie Mellon University study estimating that for every three computers manufactured, two became obsolete and predicting that the ratio will be 1:1 by 2005.

Clearly, a recycling and disposal infrastructure is needed for the obsolete consumer electronic products. Producers of commercial electronic goods lease most of their products, keeping inventory of parts, providing maintenance, and often remanufacturing products using recycled parts. Consumer electronic products, on the other hand, are sold rather than leased, and the producers have little incentive to recycle or reuse obsolete equipment. Also, either consumers are unfamiliar with various disposal options or, in some cases, such collection infrastructures do not exist.

Efforts are under way to create markets for low function computers to be used as “Internet terminals” in, for example, nonprofit organizations and schools. With enough resources, WEXes can facilitate this exchange. Also, a recent collaboration among state agencies, Microelectronics and Computer Technology Corporation (MCC), the University of Texas at Austin, and several recycling organizations resulted in a project, completed by MCC and UT, to study the feasibility of creating an integrated recycling facility in Central Texas. As clearinghouses of information, WEXes could play an important role in the implementation of such a project.

Conclusion

The information superhighway has increased the visibility of WEXes. In the near future, buyers can use the Internet to search the globe for materials and sellers can post their offerings on the Web within minutes. With more funding, WEXes can better publicize their waste exchange services and extend their outreach activities. Expanded and more efficient WEXes services will, in turn, encourage and facilitate recycling and reuse, thereby benefitting the economy and the environment.

References

Mina M. Dioun and Julia Apodaca, “Waste Exchanges: Marketplace for the Cotton Industries Recyclable Materials,” *Proceedings of the 1998 Beltwide Cotton Conference*.

Mina M. Dioun, et al., “Analysis of Texas Manufacturers’ Potential Demand for Recycled Materials,” *Market Opportunities for Recycling in Texas*. Volume I, Bureau of Business Research, University of Texas at Austin, 1997.

Microelectronics and Computer Technology Corporation (MCC), *1996 Electronics Industry Environmental Roadmap*.

Greg Pitts and Colleen Mizuki, “View of Electronic Products Disposition,” *Proceedings of the 1996 IEEE International Symposium on Electronics and the Environment*.

Web Sites of Interest

[Chicago Board of Trade \(CBOT\)](#)

[Texas Natural Resources Conservation Commission \(TNRCC\)](#)

Go to: [Top](#) | [TBR Home Page](#) | [BBR Home Page](#) | [UT GSB Home Page](#)

1 February 1999

Send Comments to: sallyf@mail.utexas.edu