Introduction

Many people throughout government, environmental organizations, and corporations are looking for positive steps to help manage the disposal of electronic products. They are considering the development of “product takeback” systems to collect used products from their owners and recycle them. There are already a number of different systems in place around the world, and many more are being discussed. IBM has studied extensively the problems associated with Information Technology (IT) equipment disposal and recognizes that safe and environmentally responsible solutions for disposal of electronic equipment should be implemented.

Recommended Approach

Improving recycling rates for IT equipment will depend on developing lower cost and more convenient recycling solutions for products along with a fair process for financing collection and recycling processes. Industry-wide collection and recycling systems offer the best opportunity for implementing environmentally responsible disposal systems within communities while minimizing costs.

Industry-wide IT recycling programs require the cooperation of many stakeholders, each with their own priorities and interests. This demands compromises from all stakeholders to create the most effective and cost efficient recycling system possible. Our experience with many systems globally has led IBM to promote systems which:

- **Use existing municipal waste collection systems to collect used IT products from households and small businesses** - Local communities have invested significant resources in systems for collection of waste materials from households and small businesses. Consumers understand and use these systems. Duplicate systems to collect end-of-life electronic products are unnecessary and would be very expensive. Municipal collection is convenient for last equipment users and will result in the highest collection rates for used equipment.

- **Create joint solutions covering all manufacturers’ products to transport, recycle, and dispose of used IT products collected by local communities** - IT equipment disposed of by households is typically old and has little or no parts value. Consequently, manufacturers have no interest in obtaining this equipment. Transportation, recycling, and disposal costs can be minimized if recycled equipment volumes are high and if local recycling solutions are used. Given the extensive infrastructure required to support takeback of products from households and small businesses, joint systems where costs can be shared among a large number of manufacturers' products are more sustainable.
• **Fund product takeback systems through a special fee on new product sales** - The cost of recycling can be reduced through manufacturers' design for environment initiatives and efficient product return and recycling systems. However, such systems for collection and recycling of IT products from households and small businesses are rarely, if ever, profitable. Thus, a cost effective and sustainable funding process is necessary for these systems. An end-of-life disposal fee collected directly by municipalities or others collecting used products is the most efficient system for funding product takeback. However, environmental groups and local governments fear that end-of-life fees will encourage improper disposal of products, so other funding mechanisms must be considered.

Many agree that a special "recycling fee" assessed on the sale of new products is the most effective way to fund community recycling systems. Recycling fees should:

1. Be clearly identified (visible) at the time of product sale to ensure the maximum transparency of recycling costs to all involved parties.

2. Be based on product type, with higher fees for product categories that are more difficult to collect and recycle and lower fees for product types that are easier to handle. There will always be a tradeoff between the complexity of the method used to determine the recycling fee for a product, and its ability to truly reflect the expected costs of product takeback for that particular product type. However, our experience shows that recycling fees based on product type most accurately reflect actual takeback costs and are the most equitable solution.

3. Be sufficient to cover costs associated with return of all covered products, including historical products (i.e., products that were sold prior to implementation of the recycling system) and orphaned products (i.e., products where manufacturers can not be identified or are no longer in business.) While it might be considered unfair to ask existing producers and / or consumers of products to pay for recycling and disposal of products sold many years ago, the problems associated with recycling and disposal of these old products cannot be ignored. Thus, any recycling system must address collection and recycling of these products.

4. Provide sufficient funds to pay for recycling of products being returned for disposal today (i.e., pay as you go system). There is no need to generate significant reserves to pay for future product return costs. Future fees will be sufficient to pay for collection, transportation and recycling of products returned in the future.

5. Fund all costs associated with transportation, recycling and disposal of covered products. Recycling fees may also be used to subsidize municipal and other collection processes by providing a fixed payment amount per pound of material collected to offset additional costs incurred by municipalities or others for separate collection of IT Products, and to compensate retailers and others involved in the collection of the recycling fee for their administrative costs.
In the United States, IBM has actively pursued the development of voluntary industry-wide recycling solutions based on the concepts identified above. In most instances, voluntary actions by governments, manufacturers, retailers, and consumers result in more efficient and lower costs solutions to environmental problems. However, given the large number of stakeholders involved and their competing interests and priorities, today there is no agreement among all involved parties on the details for implementation of a voluntary recycling solution.

As a result, legislation may be required to establish an improved product recycling system. To avoid different state-by-state product recycling systems throughout the United States, legislation should be national in scope. However, this will be very difficult to secure, and many local communities and states are moving to address mounting volumes of electronic wastes. Consequently IBM will not oppose state legislation in this area as long as it is consistent with the approach identified above, includes adequate provisions to collect the recycling fee on out-of-state Internet and mail order purchases, sunsets the local recycling fee if national legislation is passed, and does not impose additional product design or labeling requirements.