

## **New Recycling Business Methods; Eco Brain**

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Since establishment some 25 year ago, AMITA Corporation has continued its attempts in meeting customer needs, in reducing costs for waste treatment. The solutions we have proposed in the past made use of our networks entailing Japan as well as the East Asian region. However, as enterprises have changed their perspective approaching environmental issues recently, as needs diversify, AMITA too has been changing its strategy to incorporate the use of Information Technology to provide consulting services. AMITA has set its goals in promoting modernization of the waste treatment industry, and optimizing the recycling market to reduce environmental impacts.

Keywords: Market, Consulting, Inter-net

### **Introduction**

#### **Current Status of the Waste Treatment Industry in Japan**

To begin with a briefing on the current situation of the waste industry in Japan, both traditional and advanced technologies, such as those introduced at this symposium, have been practiced widely.

Preventive measures include, reducing waste emissions by; remodeling of manufacturing designs; changing of raw materials and resources; improvement in manufacturing process; and advancing technology for treatment and reusing by; remodeling of manufacturing designs; changing of raw materials and resources; technology for disassembling, cleaning and refining.

Countermeasures to be applied after the waste has already been emitted include, renewing into raw materials, renewing into industrial materials, or sub raw materials, building materials, fertilizer,

and feed. However, there is no valid data as to where, how and at what cost the waste is being managed. The lack in a common basis for statistical presentation hinders modernization and prevents use of Information Technology in this field.

#### **In the Case of the Recycling Industry**

Among all others, the recycling industry provides statistical data most readily. This industry for example has about 50,000 sites, including 3,500 major sites licensed to operate by local governments. However information required for the application of licenses does not include detailed descriptions on recycling methods, standards for input waste material, costs, and other useful information for recycling. Another cause, making the statistics insufficient is that companies that recycle, without charge, are not included as part of the list. Therefore, the accurate number of companies accepting industrial waste

cannot be grasped and even more detailed information, such as standards for input waste material is unmanaged.

From these reasons, it is obvious that information on the recycling industry is insufficient in both quality and quantity.

#### **Urgent Need for Information Management**

As of 31st of May 2001, ISO 14001 certified sites in Japan are over 6,450 and the number keeps on growing. Under the "Zero-emissions" notion proposal by United Nations University, more companies tend to consider that recycling is worth paying the extra cost. They trend is that promoting of recycling leads to improvement of corporate image, and reducing environmental risks consequent in the long run, as advantageous. To promote this movement, recycling market information should be managed urgently.

#### **Environment Related Regulations**

Restrictions by environment related regulations, following the trend of the government's policies, are complicating procedures for waste-related business more and more. Newly executed regulations related to the environment in the last three years include; Basic Law on Promoting a Recycling Society, Electric Appliance Recycling Law, Food Recycling Law, Green Purchase Law, PRTR Law. In addition, Waste Management Law, Containers and Packaging Recycling Law were revised. In 2002, the Construction Waste Recycling Law will take effect.

Following each of these laws, various related work will arise. As for daily operation of industrial waste, manifest slip system controlling

collection and distribution of the waste, intermediate treatment, and final treatment, making report on treated waste, making PRTR report, componential analysis of waste, acquisition and holding of the license and so on, are included.

As mentioned above, the waste industry is experiencing uncontrolled flooding of information, and unprecedented rapid change.

#### **Eco Brain**

##### **Needs of the Waste Industry**

In the situation mentioned above, there are following needs in the waste industry:

- 1) Need for updated information and explanation on waste related regulations and environment related topics,
- 2) Concrete solutions for reducing, reusing and recycling,
- 3) Market information for feasibility studies on recycling businesses,
- 4) Improvement of work efficiency in waste related businesses

AMITA has been working on matching and proposal of "recycling routes" to meet the needs, to reducing waste treatment cost (environmental cost) for the last 25 years. However, "Eco Brain" is the new business method developed to meet the needs mentioned above.

##### **Eco Brain Services**

Eco Brain is a membership providing, monthly

consulting services by sales staff and information and business support services through AMITA-net.

Detailed explanation of the services are as follows:

#### *Information service and explanation*

1. Providing updated information and explanation on waste related regulations and environment related topics.

In order to provide this service, a great deal of facts and figures must be accumulated and made intelligible. Therefore, AMITA is trying to change it to concrete and practical methods to provide information of high practical use.

AMITA has been providing services by answering to clients' inquiries. From now on, AMITA will provide them efficiently to every customer by using the Internet site, AMITA-net.

At the same time, an information desk was set up to continue customer support when needed by answering individual inquiries as before. And sales staff will visit customers every month for follow up service and information obtained will be fed back for the future service.

#### *Proposal of solution*

2. Concrete solutions for reducing, reusing and recycling

3. Market information for feasibility studies on recycling businesses

These two are the greatest needs and closely inter-linked. AMITA has been trying to meet these needs for 25 years. This service includes visiting and investigation for the waste generators and waste acceptors, check of the waste status such as

chemical composition, examination of the investments in equipment, selection of intermediate processing and transportation company, check tests, and proceeding with the entire project.

The services above are based on the network with reliable acceptors.

Moreover, where existing recycling methods can not be applied by any reason, a new recycling method is properly developed and proposed.

In the past, recycling route determination and proposal were charged to operate this service, while in Eco Brain, proposal is made free, operation and management fee is reduced specially for members.

#### *Building of recycle market database*

Helpful database to make this service more efficient is under preparation to promote optimization of the recycle market.

The most important point for building the database is the setting of quality standard and price system. In other words, the key is the setting of common language to match the waste recycling routes.

One problem in recycle matching is that receiving conditions of acceptors are not managed. In other words, it is not managed and revealed what kind of quality information is necessary for the matching.

Another problem is that most company does not grasp or control the waste's quality.

They only grasp the analysis data of toxic and/or hazardous substance, obliged by law.

From these reasons, it is natural that recycling method cannot be examined efficiently. Moreover,

as mentioned above, there is a fundamental problem that information on the waste industry is very limited.

AMITA's recycle matching and proposal process is to check the acceptor list and examine the best recycling routes so far.

However, AMITA is going to build the database of quality standard and price system and make the process automatic as much as possible from now on.

#### *Efficient operation*

#### 4. Improvement of work efficiency in waste related work

Eco Brain supports daily operation to provide one stop waste-related service, in addition to providing environmental information and waste management proposal.

The waste-related work can be divided into 2 types mainly.

One is regular and another is irregular work.

Regular work includes ordering, checking the treatment results, charging, dealing with disbursement and credit, and making report related to the law. Contact with customers has been made by telephone and fax, and data have been input by hands. Using AMITA-net can more efficiently do these works.

While irregular work includes coping with "situation changes" as follows.

- 1 ) quality change of the generated waste
- 2 ) quality change of the receivable waste
- 3 ) increase and decrease of the generated waste quantity
- 4 ) increase and decrease of the acceptable waste quantity

#### 5) Generation-acceptance timing gap

As for gap on "quality, quantity, timing", in usual dealing, AMITA will give necessary information efficiently and optimize everything with Supply Chain Management.

However, applying this problem to the waste recycling can lead to quite different state.

In usual dealing, related companies try to cope with "situation changes". On the other hand, in the waste treatment industry, many companies do not try to cope with it.

Because every conditions of the waste perfectly subordinate to the product conditions.

Eco Brain includes dealing with demand-supply gap, by changing the acceptor, improvement of the equipment and the waste's quality, changing the treating fee and other various management works.

The above is the constitution of current service in Eco Brain.

#### **Conclusion of Eco Brain**

The following is the list of services in Eco Brain.  
Service provide channel : Visiting consulting and AMITA-net  
Service contents : Proposal on waste management solution, Efficiency improvement of daily recycling operation, (Regular and/or Irregular work), Explanation of regulations and environment related topics

Eco Brain can provide immediate and efficient one-stop waste-related service, from waste management solution, efficient daily operation to information service on the Internet. It also provides fine-tuned service with visiting

consulting.

### **Mission of AMITA : Recycle Chain Management**

Imagine when the acceptor says, " If the quality of the waste is not improved, it can hardly be received or raised treatment cost is required " Many companies do not try to improve the quality of the waste positively to meet the demand.

As mentioned before, one countermeasure to the demand-supply gap is changing the acceptor, improvement of the waste's quality and changing the treating fee. However, these troubles caused by demand-supply gap can be prevented with preparations of the followings.

- 1) Diversification of the risk with multiple routes
- 2) Quality control system for the waste
- 3) Intermediate base for storage, shipping and processing
- 4) Database of the recycling market

1) indicates that if multiple routes are provided, any trouble happened in one route can be easily coped.

As for 2), management system "making and designing recyclable waste" is built to meet the acceptor's needs. To minimize the cost and risk, in addition to the product market information, the waste recycling market information is supplied to production control system.

As mentioned in 3), with the base to manage optimal transportation and processing, "Quality, Quantity, Timing" gap between generator and acceptor can be properly coped.

With these 3 mechanisms, a stable recycling

operation can be realized.

As an important tool for conducting 1)~3) recycling quality standard and price system is settled. That is the database mentioned in 4).

### **Recycle Chain Management**

Meeting the conditions in 1)~4), Supply Chain Management, "Recycle Chain Management" in AMITA, seemed to be impossible in the waste industry, can be realized.

With the management, the situation of multiple acceptors and waste generator is grasped and distribution base, quality of the waste, equipment in the waste generator and acceptor, storage control and new recycling route are properly investigated and improved in a short time.

As a result, optimization of recycling market as a social system can be realized and it contributes to decreasing the environmental load.

This is the Mission of AMITA.