

US EPA ARCHIVE DOCUMENT

Chapter One

Why and How to Start a Recycling-Based Manufacturing Enterprise

This chapter explains why so many opportunities exist for small business development in recycling-based manufacturing and how to start developing your product and planning your business.

1.1 Why Reuse and Recycling Present Viable Business Opportunities

Just about any product on the market today can be made out of recycled materials. Instead of using virgin materials that have been mined or harvested from natural areas, recycled products are made from materials that have already been used once, and have been collected and processed to be used again as feedstocks in new products. Similarly, many products can be repaired or otherwise reused, before their parts are recycled into different products. Because of the environmental, social, and economic benefits associated with reuse and recycling, many sustainable business opportunities and broad public support exist for small-scale manufacturers of recycled products.

While reuse and recycling reduce the need for landfills and incinerators, which can produce significant environmental problems, the greatest environmental benefits of reuse and recycling come from the natural resource and energy savings they provide. Using recycled materials decreases the need for virgin resources, which are often extracted from environmentally-sensitive areas. Manufacturing with recycled materials typically requires much less energy than using virgin resources, because the materials have already been processed at least once. For example, manufacturing glass containers with recycled cullet consumes 32% less energy than using virgin materials.

Small-scale, locally-based manufacturers also provide economic and social benefits to their communities. Recycling-based manufacturing can involve complex and expensive technology, but it can also be low-tech and labor intensive, providing a variety of training and employment opportunities to communities. In one recent study conducted in the State of Washington, recycling-based manufacturing employed more people than the biotechnology industry. Similar studies have shown recycling-based manufacturers provide a wide range of skilled and unskilled jobs at living wages.

In California, several state and local incentives exist to assist manufacturers using recycled materials. AB 939 requires 50% diversion of solid waste from landfills by the year 2000 and AB 2020, known as the Beverage Container Recycling program, provides a network of recycling locations to encourage consumers to redeem empty beverage containers for the CA refund value (CRV) to encourage recycling. California also has several laws which require recycled content in products and mandate that state agencies buy recycled products. The California Department of Conservation, which administers AB 2020, and the California Integrated Waste Management Board (CIWMB), which administers AB 939, both have programs that assist manufacturers who use recycled materials (see Chapter Six for more information). Many local governments, especially those within the CIWMB's Recycling Market Development Zones, also provide incentives to recycling-based manufacturers.

1.2 Opportunities for the Small Entrepreneur

The recycling industry as a whole is very diverse and includes a wide variety of service and product businesses, from those that collect and process all sorts of materials to those that reuse materials or manufacture with recycled content. The industry also supports businesses in public education, consulting, transportation, brokering, and retailing of recycled products. Recycling businesses are structured in every form imaginable, from sole proprietorships and corporations to joint ventures and non-profit enterprises. Some companies are multi-national and vertically integrated while others are very small with limited local markets. Because recycling-based manufacturing produces the greatest economic, social, and environmental benefits within the industry, this guide is focused exclusively on manufacturing with reused and recycled materials.

In an industry as diverse as recycling, the possibilities for the small entrepreneur are almost unlimited. However, some types of businesses will be easier to start than others. Since adding value to the materials is the key to being profitable, one approach is to use a material that currently has a very low or negative value to create a new product which has a much higher value in the marketplace. Because of their low values, great potential exists in using green or mixed-colored glass, mixed paper, plastics labeled with numbers three through seven, scrap tires, and construction and demolition wastes such as scrap wood.

Another approach is to manufacture a product already on the market, substituting recycled materials instead of virgin materials, or to produce a recycled product locally, with local materials. Only a very small percentage of products on the market today are truly new inventions. Most are variations on a theme—try making recycled materials your variation.

Support for small-scale manufacturers using recycled materials is growing, especially in California. The California Integrated Waste Management Board has designated forty Recycling Market Development Zones statewide, which offer a variety of business incentives to recycling companies. Some local governments, such as Alameda County and the City of San Francisco, offer special grant and loan programs to recycling-based manufacturers.

1.3 Factors to Consider in Selecting a Business Enterprise

Chapter Two describes fifty business opportunities in small-scale manufacturing with reused and recycled materials. Review the profiles and see what piques your interest. Before narrowing down your thinking to a specific business enterprise, it is important to understand three things: yourself, your field, and manufacturing in general.

A. Understand Yourself

Choosing the right business is a very personal decision that must be based on knowing your own needs, interests, and skills. What is motivating you to start a business (independence, money, saving the world)? What are your personal strengths and weaknesses? What things do you really like doing and what things drive you crazy? What tasks are you good at and not so good at? Honestly evaluate these aspects of your personality and keep them in mind when deciding which business is right for you.

B. Understand Your Field

You are likely to have the greatest success if you start a business that you are already familiar with. To plan a business, build a strong customer base, and turn a profit, you have to know what you are doing. The best way to learn about your potential business is to work for one similar to it. If that isn't an option, at a minimum, you should visit and tour similar enterprises and interview the people who work there. Small business owners outside your area are likely to be more honest with you than local businesses with which you would be competing. Try to gather as much information as you can about businesses like yours. Trade associations, conferences and exhibits, and trade publications are also good sources of information.

C. Understand Manufacturing

As a small manufacturer, you need to consider several important factors that can make or break your business. Answering these questions for your specific idea will help you understand the challenges you'll face and whether you have selected the right business for you:

Government regulations. What environmental and health and safety regulations will you need to comply with?

Skilled labor. Will you need skilled labor and can you find it readily available and affordable in your area?

Feedstock. Is the recycled material you want to use available at an affordable price from a reliable source?

Production. Will you build a steady inventory or produce products per customer order? Will you manufacture the entire product yourself or contract out some of the work?

Competition. Is your competition small like yourself or will you be taking on large companies?

Success. If your small business is successful, will you sell it to a larger company or try to expand nationally or internationally yourself?

Start-up costs. Do you have the capital and/or sweat equity needed to start a new venture or to buy an existing enterprise?

Once you have considered these three factors and their implications on your business, you are ready to begin the process of developing your product.

1.4 The Process of Developing a Product

Coming up with a product idea to start your business can be difficult and time consuming, but it can also be fun and exhilarating if you take the right steps.

A. Get Ideas from Existing Products

Getting your ideas from existing products and services rather than coming up with a new invention is easier and involves less risk in the marketplace. Most new products are an innovation of an existing product. Variations on a theme may seem less exciting than an entirely new invention, but they are more likely to be accepted by your potential customers. Chapter Two contains profiles of fifty different ideas, all of which are variations on products that are already in use.

Find a product that interests you and think about what kinds of modifications would be useful. Write down these ideas every day for a while, and then go back and reassess your thoughts. Ask

Defining "Recycled" Content

Recycled materials are usually classified as either pre-consumer or post-consumer. Pre-consumer recycled materials refer to industrial scrap and products that never entered the consumer distribution system for whatever reason. Much of this scrap is very clean, well-sorted, and uncontaminated because it was never really used for its intended purpose. Post-consumer recycled materials, on the other hand, have gone through their life as a product or package and have been discarded by the end user. These materials tend to be more contaminated and not as well sorted. However, post-consumer materials are likely to be more abundant, easier to obtain, and in many cases, less expensive than pre-consumer materials. Try to use as much post-consumer material as possible.

Many recycled products contain a mix of both pre-consumer and post-consumer recycled materials. If you will be including the recycled content of your product in its labeling or marketing materials, it will be important to know the amounts of both pre- and post-consumer materials used.

yourself and others questions to facilitate the generation of product ideas. For example, in how many different ways can your proposed product be used? What other products are like yours and how are they effective and ineffective? What can you do to improve upon those qualities? Would making the product out of recycled materials create more excitement among consumers? Would recycled materials make the product higher quality and/or more cost-effective?

B. Put Your Idea on Paper

Small businesses succeed because they meet a need or solve a problem for their customers. What problem will you solve and for whom? It may be helpful to write out a problem statement that defines the problem or need you are interested in addressing through your business. For example:

“Many people don’t like sending mass-produced greeting cards because they seem too impersonal and commercial, but they don’t have the time or talent to make cards themselves.”

“Most fire or charcoal starters contain foul-smelling chemicals that cause air pollution and are poisonous to pets and kids.”

“Decks made out of wood require a lot of maintenance, they splinter, and they have to be replaced every now and then. Also, the price of redwood and other decking materials is rising.”

Follow your problem statement with a solution statement that describes how you will address the problem. This becomes the first draft of your product description. Based on the previous examples, you might draft the following solution statements:

“I will produce one-of-a-kind greeting cards for special occasions made from handmade recycled paper decorated with local scrap and natural materials.”

“I will manufacture a fire starter out of non-toxic, non-polluting materials such as scrap cardboard, wood chips, and wax.”

“I will manufacture plastic lumber decking material that doesn’t need staining or sealing, doesn’t splinter, and lasts three times as long as wood decking.”

C. Pull Together Your Team

As your product starts to take form, you should put together a product development team. Use as many external and internal resources as you can. Who on your board and staff or among your family and friends has product development or marketing experience? Ask around your office and social occasions if people in your personal and professional circles have started their own business or worked on creating or updating products. Your project team should include people with varying skills and interests. By using a variety of people and resources, you will come up with a more innovative, creative, and diverse list of ideas than if you worked alone. Members of your product development team may also become members of your board of directors or business advisory team.

D. Brainstorm to Generate New Ideas

Once your project team is established, then brainstorming should begin. Get your project team together and designate a period of time for brainstorming about product ideas. A strong group leader should keep the discussion focused on idea creation, not criticism. Limit people’s comments to a few minutes at a time and go around the group several times, so team members can build off of each other’s ideas. When the team runs out of ideas, work as a group to focus and narrow the list by following these steps.

1. Pick a few key features that make the product unique.
2. For each feature, discuss additional modifications and innovations that would make the product even more desirable. What are the benefits to the consumer with each alteration? Do these changes detract from other product qualities?

3. Evaluate the resulting product. What are the pros and cons compared to the original concept? Does the product still match up with your personal goals for your business? What is the feasibility of carrying out the idea with your available resources?

E. Assign Responsibilities to Team Members

Based on the results of your brainstorming session, what information do you need and what steps need to be taken to move forward? Create a list of action items and make assignments to team members. Action items might include investigating the competition, finding sources of recycled materials, pricing used and new equipment, locating distribution channels, and interviewing designers to work on product's aesthetics. Be sure to develop a timeline with regular check-in points to keep the product development process moving forward.

F. Keep Track of Ideas and People

Throughout the product development process, you should organize and maintain contact and product information files. Who have you talked to? What did they say and how might they help you later? Keeping a contact file will assist you in maintaining good networking relationships. Also keep a notebook to document your progress. Any ideas you have or contacts you make with vendors or consultants can be useful later, even if they didn't seem so initially. Research from the product development process will come in handy when writing several sections of your business plan. Send out updates on your progress to contacts you make along the way as these people may become investors, distributors, or customers later on.

G. Create the Prototypes and Get Feedback

When you have refined your product ideas, it is time to create some prototypes that you can show to potential customers and distributors for feedback. Show the prototypes to as many people as you can and use the feedback to modify your product. Don't be afraid that someone will steal your ideas. The benefits of receiving feedback on the product far outweigh the risks of someone stealing your ideas. Once you have set up your manufacturing operation, it will be more difficult and expensive to make significant design changes.

1.5 Special Considerations for Non-Profit Enterprises

Many non-profit organizations are interested in developing enterprises that contribute not only to the implementation of mission statements, but also to their bottom line. For example, faced with diminishing financial support from government agencies, a non-profit homeless shelter and job training program may wish to start a recycling-based manufacturing business that offers low-income clients employment opportunities while also generating revenue to support their shelter.

Non-profit entrepreneurs must consider several important issues before embarking on enterprise development. Outlined below are five key tasks to complete during the process of deciding whether or not to start a non-profit business enterprise.

A. Review Your Articles of Incorporation

Incorporation documents can help you clarify your organization's mission and goals. By reviewing these documents you can determine if your business idea is consistent with the mission and purpose of your organization. This is a decision that should be agreed upon by the board of directors and staff. Be sure to come to an initial agreement on the purpose of creating your enterprise. How does it achieve the goals of your organization?

As your business plan begins to take shape, you should review it carefully and determine if it is consistent with your organization's mission statement. Will you conduct business in a way that fulfills your mission and not solely to maximize profits? Is the size of your business consistent with charitable, rather than profit-making purposes? Who is being served by the business? If your business is not consistent with your organization's mission, you may still wish to pursue the idea, but may need to develop it as an independent entity or as a taxable subsidiary.

B. Decide Whether to Form a Subsidiary

Before deciding whether to form a subsidiary business, your organization should consider a few factors. First, is the predicted return on the activity sufficient to justify the investment of time and money involved in creating the subsidiary? Second, has a business plan been outlined and analyzed for a separate business? Third, is your organization prepared to think like a for-profit?

One of the primary reasons for creating a for-profit subsidiary is to protect the tax-exempt status of your non-profit organization. If your organization is engaging in “substantial unrelated business activity” as defined by the Internal Revenue Service, it could risk losing its tax-exempt status. Forming a subsidiary gives you the ability to limit the legal liability of your parent non-profit for the subsidiary’s activities. The non-profit’s organizational assets could be protected from the debts of the subsidiary and vice versa.

As a subsidiary business, you may be able to receive funding, such as commercial business loans, which may not be available to you as a non-profit. Some financing resources are only available to for-profit enterprises, while others are available only to non-profits. Understanding where financing will come from and limitations on how it can pass between the non-profit and the subsidiary will be important. Also, a subsidiary would not be subject to the same lobbying limitations as a non-profit corporation, which may be important, depending on your business.

Forming a subsidiary does have some drawbacks, such as adding significant costs in terms of time and money. In the short run, a subsidiary will incur incorporation expenses such as legal fees, government filing fees, and securities law compliance fees. In the long run, the major cost is the time necessary to maintain corporate separation, such as separate tax returns, along with the additional expenses of running two separate organizations. Tax-exempt benefits such as special postal rates and income tax exemptions will not apply to the subsidiary.

If you decide to form a subsidiary, in order to maintain its legal status, you will need a separate board of directors, separate books, records, and financial accounts. The subsidiary can contract with the parent non-profit for staff, space and other needs, and the parent non-profit can lend money to the subsidiary, without loss of liability protection, as long as the transactions are reasonable and fair to both organizations.

If your non-profit organization is considering starting an enterprise, you should consult an attorney who is familiar with the laws of non-profit and tax-exempt organizations. Determining what form your enterprise should take is a complicated process with long-term legal and financial implications.

C. Assess Your Organizational Resources

Enterprise development requires both standard business planning to ensure the viability of the enterprise, as well as non-profit strategic planning to ensure that the enterprise fits well with the non-profit mission. Without careful coordination and communication, these two purposes can collide.

It is important to maintain a clear sense of who in your organization is responsible for various aspects of planning for the business, within the larger plan for the non-profit. The board of directors and staff should decide whether to have the board oversee the business or to form a separate management committee, depending on the skills and knowledge represented on the current board. Planning an enterprise will require an entrepreneurial spirit that can remain true to the organization’s mission.

Starting an enterprise will most likely require an outside person to join the organization as a business manager. This person should possess specialized business skills related to your endeavor. Some restructuring amongst the staff can also help produce a more effective business. When considering restructuring think about what the needs of the business will be and what the staff’s responsibilities will be in meeting those needs. Determine how these staffing changes will impact the rest of the non-profit’s activities.

D. Rally External Resources

Your non-profit organization will most likely require additional assistance to get your enterprise up and running. You should use external resources as much as possible to fill in the gaps and meet the needs that your staff and board are unable to address. You can turn to program participants and your professional contacts for assistance.

Program Participants. The interests of the people your organization serves should be the primary motivation for the creation of an enterprise, whether they are low-income community members, youth, elders, or the public at large. The involvement of the program participants provides non-profit managers with good feedback about the relevancy of the enterprise to the organization.

Professional Contacts. Various professional resources can help develop your enterprise. Funders are typically very knowledgeable about resources and organizations which might be helpful to you in the enterprise development process. Lending institutions and loan officers should be contacted early in the process for feedback and information on their criteria for lending to non-profit enterprises. Investors can provide good business insight. Consultants can fill in the gaps found in your organization's knowledge base by transferring information to the board and to the person in charge of managing the enterprise. Consultants can often provide necessary market research that your organization could not complete on its own.

E. Develop Support Networks

It is important in the enterprise development process to access business, non-profit, political, and other networks. It is especially important to network within circles of influence and abilities that are not present within your organization. A good starting point is your organization's existing network. Then branch out to meet others who are working in the same field as your new enterprise and to individuals that may be supportive of your activities. For example, developing political contacts can be helpful in your enterprise development, especially when working with city governments.

1.6 Putting the Pieces Together

With your product development process underway, you can begin developing your business plan. Chapter Three outlines a standard business plan and reviews each section in depth. Chapter Four presents a primer on marketing and Chapter Five addresses how to find financing for your enterprise. Finally, Chapter Six lists hundreds of resources for additional information and support.

Some Do's and Don'ts of Product Development:

DO:

- Inform yourself about manufacturing processes and costs.
- Research similar products that provide comparable benefits.
- Keep a close eye on the competition.
- List the reasons why your product may fail.
- Be prepared to give up on a favorite idea.
- Read relevant periodicals and journals.
- Use outside consultants to fill in gaps on your team.
- Pay attention to timing of product placement in the market.
- Make a product that is easy to distribute.
- Use simple technology whenever possible.
- Make a unique product.

DON'T:

- Overspend on research and design.
- Hire a consultant who doesn't support your mission.
- Copy your competitor.
- Rush to the market with a defective product.
- Overprice your product.
- Ignore problems. See them as opportunities instead.
- Be afraid to talk about and show off your idea. It's a good way of gathering input from those who will buy, sell, and make the product.