Cold Storage Feasibility Analysis

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Building a Public Seafood Processing and Cold Storage Facility—Is it Right for your Community?

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What is a Feasibility Analysis?

A feasibility analysis answers the question: Does this business concept make sense? A feasibility analysis is focused research that identifies the critical issues surrounding the concept that would prevent it from succeeding in the marketplace. It is one of the early steps in the business planning process, following identification of the concept and recognition of the goals and objectives of the business. A feasibility analysis is not a business plan, but it can provide much of the information required in a business plan. A feasibility analysis is also more than a computer model of a cold storage facility, since it addresses the market, organizational structure of the business, and financing issues, in addition to technology, facility, capital, and resource availability that are typically addressed in simulation models.

What Topics Should It Address?

The content of a feasibility analysis will vary according to the business concept and the specific facility being proposed. However, several items would be common to all cold storage feasibility analyses. These include the following:

- Market Analysis
- Technology and Facilities
- Management and Staffing
- Pricing and Financial Analysis
- Risk and Risk Analysis

The following sections of this report provide a discussion of each of these items.

What Is Required Before Starting the Analysis?

The most obvious requirement is the identification of a business concept with a cold storage facility. Equally important is explicit recognition of the goals and objectives of the organization that would own and/or operate the facility. Some questions that should be answered before starting a feasibility analysis are:

- What are you planning to sell? Cold storage for use by the public (e.g., lockers, bait, ice) or for use by local seafood processors?
- Is there an agreed upon metric for success of the facility?
  - Number of jobs
  - Return on investment
  - Net present value of benefits and costs
- Have all stakeholders been included in the planning for the facility?
- What should be the scope of the feasibility study? Has credible research been conducted for some aspects of the feasibility study?
- Who should conduct the feasibility study?

Once these questions are answered, and the results are explicitly recognized and made available to the stakeholders, the feasibility analysis can commence.
What is the Market for Your Cold Storage Facility?

The success of a community cold storage facility hinges upon the local demand for the services provided by the facility, as well as the demand in the larger marketplace for the products supplied by local users. A community cold storage facility can fail if local users are not successful in the larger marketplace. As a result, the market analysis must address the local demand as well as the likely success of local users.

The local demand can be generated by processors, harvesters, or other members of the public. The market analysis must assess the potential requirements as well as the supply of seafood or other resources that might be held in the facility. Answering the following questions can provide a large portion of the information needed for the market analysis:

- What are the products that will be held in storage?
- What is the peak volume of each product that can be expected at varying prices for cold storage and handling?
- What is the total volume of each product that can be expected at varying prices for cold storage and handling?
- How long will the products remain in the facility or what is the dissipation rate from the facility that can be expected at varying prices for cold storage and handling?
- Where is the market for the products held in storage?
- Are your transportation connections adequate for getting your user’s product to market in a timely manner to meet their customers’ needs?
- What is the transportation cost to get these products to market?
- Are there local competitors to the cold storage facility?
- Who are the competitors of your local users? What advantages or disadvantages do they have in the marketplace? How do product prices compare with local suppliers?
- In addition to seafood, are there other products that may be held in the facility, such as frozen products for local grocers? Subsistence foods? Other agricultural products? What is the volume of each product that can be expected at varying prices for cold storage and handling?
- Is there a market for ice in the seafood industry or in the community?

Answering the questions noted above will provide information to estimate the throughput and inventory that will be held in the facility.

Does Your Facility Fit the Market?

The inventory and throughput information developed in the market analysis is the key parameter for sizing the cold storage facility. However, the facility cannot be sized to meet peak demand since the resulting capital and operating costs will not be sustainable. This task in the feasibility analysis must consider the following factors:

- Sizing and Capacity
- Technology and Equipment
- Management and Staffing
- Plant Location and Infrastructure
- Project Costs
Management and Staffing

In addition to developing a facility that is the correct size for the market, the feasibility analysis must have a preliminary design concept to provide sufficient information for estimating the capital and operating cost of the plant. The technology and equipment used for refrigeration should be described, as well as materials handling, racks, and other items. Decisions on these items will affect the capacity of a facility and the efficiency of operations.

Management and staffing of the facility will be important to its success. Staff training and experience will be important to operating a plant with minimal costs that also meets customers’ requirements. If the community does not have a person with management experience in cold storage operations, it might consider hiring a firm to manage the facility for a few years and train a resident in management during that time. In addition to the plant staff, the analysis should consider the availability of refrigeration contractors or specialists in the community, as well as other skills that are necessary to maintain the facility.

The plant should be located in close proximity to users and transportation facilities to minimize costs. If the cold storage facility is being proposed to facilitate the introduction of new products or product forms by local users into the marketplace, the feasibility analysis should evaluate the ability of the plant’s users to compete in the marketplace given transportation costs from the community and the prices charged by other competitors. The feasibility analysis should also address the utility and other infrastructure in the community. For example, is the electric generating capacity in the community sufficient to provide the power needed for the cold storage facility? Are the transmission lines sufficient to carry the necessary loads?

The feasibility analysis will require preliminary engineering cost estimates. These costs will be at a rough-order-of-magnitude (ROM) scale. The accuracy of such cost estimates may be ±25 to 35 percent, and the cost estimate should indicate the range of such accuracy. A single cost estimate should be used in the analysis to avoid unnecessary complexity, but the range should be considered later in the risk assessment section of the feasibility analysis.

Can You Finance Your Facility?

The funds required for developing a cold storage facility include the total capital investment (for example, construction, engineering and construction management, financing fees if necessary, land costs, and utility extensions), plus working capital for initial plant operations and to manage the seasonal variation in plant throughput and inventory. The following paragraphs discuss potential funding or financing sources, as well as pricing of your services, evaluating the financial performance of the facility, and preparing financial reports for potential funding and financing sources.

There are four primary sources of capital for developing cold storage facilities. Grants are of course the most attractive, since repayment is not necessary. The U.S. Economic Development Administration, U.S. Department of Agriculture, the Bureau of Indian Affairs, the Alaska Department of Commerce and Economic Development, and a number of other government agencies provide grants for infrastructure—including cold storage—projects. The Denali Commission and the Alaska Department of Labor may be able to provide grant funds for staff training.

There are several subsidized or low interest financing mechanisms available through the U.S. Department of Agriculture, the Alaska Industrial Development and Export Authority (AIDEA), and other entities that also provide relatively low cost financing. Some communities may be able to use bonds to finance their facility, either through direct placement or through intermediaries such as The Alaska Bond Bank or AIDEA. Lastly are banks and other financial institutions that provide traditional loans, or loans with guarantees from the Small Business Administration (SBA) or other agencies. Guarantees from the SBA
and other entities results in lower interest rates for borrowers and should be sought by those who are considering traditional loans for financing.

The financing package will also require some equity participation in addition to the debt. Federal or state grants can be used as equity contributions for some financing packages, but several federal financing programs do not permit federal grants to be used as an equity contribution. The ratio of equity to debt will vary for each financing program, and the credit-worthiness of the borrower. In addition to the equity required for financing, it is recommended that the cold storage developer have additional financial reserves to cover unanticipated changes, contingencies, and other development costs, as well as sufficient working capital to cover seasonal fluctuations. Insufficient capital reserves are often a significant factor for businesses failures within the first five years of operation.

Pricing for use of the facility and services is a key factor in the success of the cold storage facility and the facility’s clients. The two primary ways to price services, in the long term, are pricing to cost or pricing to competition. In the short term, it may be necessary to change your prices in response to competition, to gain market share, or other factors. However, in the long term, even when pricing to competition, the revenues received must be sufficient to cover all costs.

Funding and financing agencies will require a set of financial statements including balance sheets, income (profit and loss) statements, and cash flow statements for the construction period and for several years after the facility opens. Identifying the sources and uses of funds for construction of the facility will be important, as will documentation of the market demand and revenues generated by the services provided by the facility. The funding or financing agency will be evaluating the reasonableness of the assumptions that are made in the financial statements and comparing the statements with those of other cold storage facilities. Information from the market analysis regarding product volumes that users may store at varying prices provides information on the potential revenues for facilities of various sizes and differing services. Capital and operating cost estimates for facilities of varying sizes and with differing activities are then compared with revenues to determine potential profits or losses and used in preparing the financial statements for the years of interest.

In some instances, a community may decide to provide financial support for a cold storage facility because of the other benefits that it may provide. Examples of such benefits would be ensuring that a fish processing facility stays in business, or that the processing plant is able to keep local residents employed for a longer time and provide a market for local fishers at the same time. In these cases it would be appropriate to develop a benefit-cost analysis that looks at the value of the benefits over time and compares the net present value of that annual stream of benefits to the costs of providing financial support or subsidizing the cold storage plant for the same period. If the net present value of the benefits exceeds the net present value of the costs then the facility is considered worthy of public support using this measure.

What are the Risks Associated with a Cold Storage Facility?

There are a number of risk factors that a cold storage facility may face. Some of these risk factors and an example of each include:

- Financial – what if revenue projections are not met?
- Operational – inability to retain trained employees at wages paid
- Market – bankruptcy or closure of a major user
- Construction cost – cost overruns
- Environmental – Hazard Analysis Critical Control Point (HACCP) shortcomings
Managing the risks that a cold storage facility faces is a major part of management and operating the business. While it is impossible to identify every risk, it is important that management have alternative plans or concepts for dealing with major risk factors. One way to identify which risk factors are more critical, and how to deal with them, is by incorporating risk analyses into the feasibility study. There are a number of formal approaches than can be used for risk analysis. These approaches include:

- **Sensitivity analysis** – This method assesses the effect of varying levels of different revenues and costs using the financial models used to develop the pro forma financial statements.

- **Break-even analysis** – at what point do revenues equal costs? How many units or various services are necessary to meet this point? Answers to these questions can help management identify key parameters for successful operations.

- **Probability theory** – Software programs can provide very sophisticated and powerful risk analysis tools but often there are insufficient data to effectively employ this approach.

- **Portfolio analysis** – Based on the concept of spreading the risk of financial investments between stocks and bonds, this type of analysis concept attempts to mitigate the risks associated with a cold storage facility. It does so by identifying other actions such as broadening the services offered, integrating the facility with a processing facility, or other investment options that could offset the risks associated with cold storage.

- **Environmental audit** – An independent audit of the facility can help to identify potential risks and suggest improvements to avoid potential environmental accidents.

### Conducting the Analysis

Your community may have the capacity and capability to prepare the feasibility study and this option should not be overlooked. Residents and business owners in the community may understand the issues better than others, and may have already conducted some of the necessary research. If cold storage sponsors are conducting the study, they must resist the temptation to only look for data that supports their opinion and develop an objective, credible report that will be accepted by the funding or financing agencies.

Consultants are often hired to do feasibility studies because of the perception of objectivity. We would recommend that a community not hire a firm that builds cold storage facilities or supplies equipment because such firms may have an inherent bias in favor of seeing the facility built, even if they try to remain objective while conducting the analysis. Builders or suppliers should be used as subconsultants because of their expertise in certain areas, but the prime consultant should not have a potential conflict of interest.