

## Part three of three

# BUILDING A MICROBREWERY

*A Feasibility Study is an essential step in arriving at the decision (and getting to money) to proceed.*

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In this third and final article we will discuss some more key questions that you must address when starting up a brewing venture. If you are not familiar with conceptualizing, planning and organizing, and implementing capital projects, you need to seek professional help from qualified consultants to assist you. With the right professionals, it will be money well spent and your partners and bankers will have more confidence in the project. If the project represents a large dollar investment, or the amount of debt money is high relative to the equity money, both partners and debt lenders simply will not risk their money on projects that are not well planned, organized and properly managed.

Whether you are a brewpub operator or a microbrewery, you must perform a feasibility study in order to be able to arrive at a decision to proceed further.

### **WHY PREPARE A FEASIBILITY STUDY?**

A feasibility study is primarily concerned with project preparation and justification. It is your project plan and if you wish to attract financing from either interested investors or debt financiers, you will need to demonstrate that your idea is feasible and can be profitable. A feasibility study shows the people with the money (that you need) that you have done your homework thoroughly, have thought the project out thoroughly, have addressed all potential risk factors and unknowns to arrive at best solutions, and that you have a much better than 50:50 chance of success.

### **WHAT ARE THE OBJECTIVES OF A FEASIBILITY STUDY?**

The objectives are to provide sufficient economic, technical, and commercial details, definition and analysis to enable a final investment decision to be made, i.e.

**Economic** - This means defining the market strategy which evolved from the market examination and the reason for the selected approach after consideration of other options and alternatives. The study should describe the process of selecting the optimum approach, then justify the assumptions made. In other words, define the scope of the project as a blending of the best alternatives. The scope of the project must be clearly understood in order to accurately forecast investment and production costs.

**Technical** - This means defining and analyzing the critical elements relating to the production of the beer products together with alternative approaches to such production leading to fixing the production capacity, location, and technology to be employed.

**Commercial** - This means defining the sales revenues, production costs, sales and administrative expenses, working capital requirements, cash flow through construction, start-up and 3-5 years operations, profitability with various sensitivity analysis, debt service, -- all leading to the bottom line --

return on investment and net profit from operations.

## HOW MUCH DOES A FEASIBILITY STUDY COST?

The following are empirical values that may differ from project to project and depend on a number of factors but primarily on the accuracy of the cost estimates. There are really three degrees of feasibility studies, with different "degree of confidence" levels.

	<b>Accuracy</b>
<b>Opportunity Study (Conceptual Examination)</b>	<b>+/- 30%</b>
<b>Pre-Feasibility Study (Preliminary, not detailed)</b>	<b>+/- 20%</b>
<b>Final Feasibility Study</b>	<b>+/- 10%</b>

Expressed as a percentage of the total investment cost, the following range for Consulting Engineering fees might be expected for microbreweries.

<b>Conceptual Study</b>	<b>0.2% to 1.0%</b>
<b>Pre-Feasibility Study</b>	<b>0.25% to 1.5%</b>
<b>Feasibility Study</b>	<b>1.0% to 3.0%</b>

How much you are prepared to pay at the front end of the project to arrive at the detailed cost may be predetermined for you by your investors and debt lenders. Obviously, a lot of the engineering must be done to arrive at a cost estimate with an accuracy of +/- 10%.

## WHO PERFORMS THE FEASIBILITY STUDY? WHY?

If you anticipate borrowing a good portion of the project cost through debt financing, you will require retaining independent consulting engineers, as debt lenders are always sceptical of management-generated studies and financials since the results can be self-serving. Independent consultants, if not retained to perform the study will, at the very least, have to verify the results and conclusions that you have determined.

## WHO ARE "QUALIFIED" SUPPLIERS?

There are many manufacturers, suppliers, even consultants, who claim to be experienced and qualified. How do you verify this and ensure that you get a quality product (whether equipment or services)?

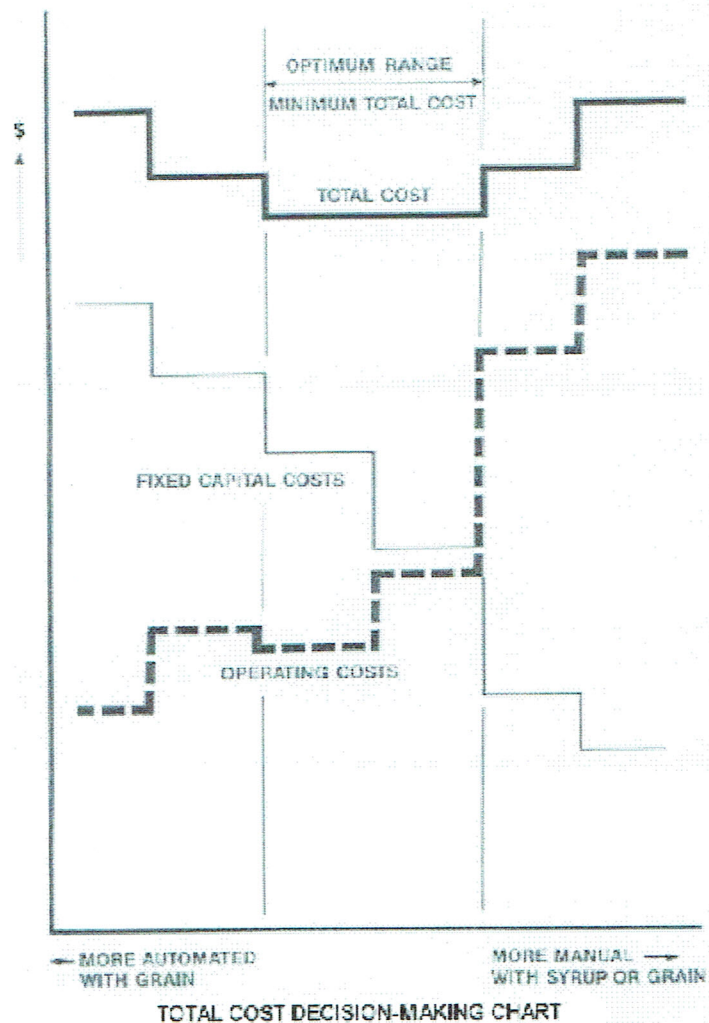
Your selection criteria for choosing the best manufacturer should go beyond the ability of the manufacturer to provide an impressive descriptive proposal with the lowest price. There are two things you are looking for from a supplier: firstly, a depth of technology, know-how, and service skills, and secondly a quality finished product. The majority of the manufacturers of microbrewery package systems has been in business less than 10 years and these companies were formed specifically to meet the growing demand for the microbrewery market. The reputable and qualified supplier can give you references of past installations and you should check out with their previous clients how good their representations and promises have been. As to the physical equipment that is built, one of the easiest confirmations of a

quality manufactured product is to determine if the shop is a Certified ASME Code shop. This is like the "Good Housekeeping Seal of Approval" for a quality safe product. An ASME Pressure Vessel Code Approved shop will have a good quality control program in place and this will be your assurance of a quality manufactured product. Whether the equipment is a pressure vessel or not, code shops tend to manufacture all equipment, (pressure vessels or otherwise), to the same quality control standards. Whether the equipment will do the job or not, goes back to checking with their previous clients and your assessment of the depth of their know-how and resources.

As to selecting the best Consultant for your situation, there is an excellent article in the March-April 1987 "The New Brewer" on hiring Consultants.

## WHAT DO YOU LOOK FOR WHEN COMPARING BIDS?

Comparing one manufacturer's proposal to another requires very detailed and careful analysis. The lowest price is not necessarily the best proposal. Unless you have prepared a detailed specification which leaves the suppliers very little room to manoeuvre, you will undoubtedly be comparing apples with oranges on first glance. Some manufacturers quote an all-inclusive price, whereas others will quote basic equipment, with a number of necessary items quoted as options. From your point of view they are not options since you must buy them. This may include such things as pipe and fittings. A European practise used on export orders is also followed by some American manufacturers whereby they quote you an allowance for pipe and fittings rather than a finished piping system. This means that you will have to weld all the pieces together on-site, the labor for which has been included by other manufacturers who supply complete prefabricated piping spools requiring a minimum of field joints. There can be many thousands of dollars difference between the two approaches with the cost of the field assembly labor (which could be significant) not shown or estimated by the manufacturers who simply provide miscellaneous piping hardware. If you can minimize field assembly time and labor by paying a premium price for the equipment supply **with** prefabricated piping, it is usually worth the extra money to avoid the aggravation and time. A piping system fabricated in a quality shop will produce a better final piping system than one where the welding is performed on-site in less than ideal conditions, and the total cost of the installed piping system will be less with the shop prefabrication approach.



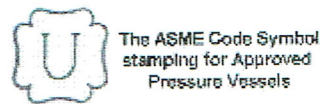
The foregoing example of pipe and fittings only with field assembly not included in the price versus a

total prefabricated piping system requiring little field assembly is a good case for looking at the **total cost** installed, not just the ex.factory price.

The total cost approach should be viewed even more broadly to include both fixed capital installed costs plus operating cost. A properly engineered equipment package which may cost more initially, could be the better deal, if it saves you significant operating costs over a cheaper system, by including such features as: requires less floor space, is easy to clean, is simple to install, requires minimum maintenance, is designed for energy conservation, is simple to operate with assured results, etc. The adjacent graph shows that there will be an optimum minimum total cost but that this is achieved only where neither the fixed capital cost nor the operating costs are at the lowest possible.

All manufacturers have fine print on the back side of their proposals which includes all their terms and conditions. This requires close scrutiny as some terms and conditions only benefit the manufacturer and are not necessarily even or fair to the buyer, particularly when it comes to promised schedule, warranties, etc. Make sure that the contract that you sign includes **your** terms and conditions which can not be superseded by the proposed manufacturer's terms and conditions.

The most common pitfall that the buyer falls into that can lead to extra charges for changes is to accept the manufacturer's proposal which has included such phrases as "subject to requirements of local conditions which are unknown but the price and design will be adjusted when finalized". Words to this effect leave you wide open to extras. You want to make sure that the manufacturer will supply equipment that meets any and all legal and commercial conditions for your location, i.e., that the manufacturer is responsible to ensure the design will meet this requirement. For instance, some states require pressure vessels to be registered with the State Authorities, thus requiring the ASME "U Stamp" and National Board Inspection Approval,



while other states do not have this requirement. Similarly some cities require all gas and electrical equipment to bear "AGA" or "UL" Stamps of Approval, not simply special local approvals by appropriate authorities. Watch out for phrases in the terms and conditions that say something like "while the equipment is designed to meet all applicable codes, the responsibility for obtaining any approvals or permits rest with the owner". What this means is that the manufacturer has not included for the cost of obtaining such approvals and any such approvals legally required will be extra to the contract. You should make the supplier responsible by including in his price for any and all such approvals if required at your location as some of these approvals can be quite expensive. The difference in two suppliers' prices, one with approvals included, and one without, can be justified even up to 20% in some cases.

Watch out for fine print clauses such as "notwithstanding anything stated in the proposal to the contrary, these terms and conditions shall prevail". This means that if the specific proposal says that the manufacturer will provide certain services which are contrary to the his general terms and conditions, the general terms and conditions will overrule. This does not mean that the manufacturer will not provide what he has proposed; it simply means you may be subject to hidden extras which, if you accepted his proposal, he is legally entitled to collect.

## **WHAT IS THE BEST APPROACH WHEN PURCHASING EQUIPMENT?**

Before inviting a manufacturer or supplier to submit a proposal to you, define your requirements precisely with detailed specifications that clearly lets everyone know what it is that you want. Always remember, that it is your project, your idea, your money and you must know what you want. Other project members, partners and suppliers will not be able to correctly figure out and recommend what you need if you do not know what you want. The more you pin down the details, the less margin for error or guessing of the requirements there will be and in the final analysis the less changes during the course of construction resulting in less extra charges.

There will always be extras for unknowns. Even after you have obtained firm prices for just about everything, you should still have a contingency fund equal to 10% of the firm prices and then you do your best not to have to spend it.

A good purchaser is one who can negotiate a fair deal for both the buyer and the seller, where both sides are happy at the conclusion of the contract. It is poor purchasing tactics to knock the supplier down on its knees, demanding the highest quality and quantity at the lowest price, to the point where the supplier feels reluctant to accept the order because there is no profit left in the job. In the long run this approach will only cause you problems, as the manufacturer will immediately start looking for extras in the fine print. Every time you change your mind with even minor revisions, it is going to cost you. The manufacturer can not do you any favours or give any "freebies" for minor changes, when you did not leave enough money in the job to provide these public relations gestures. Granted, you can not afford to go to the other extreme and be too generous, even though you would undoubtedly have a friend for life with that supplier. There is a fair and equitable middle ground where everyone can be happy. I have found that where the manufacturer, after obtaining a hard negotiated contract which was fair to both sides, was left with some flexibility for reasonable profit, that the buyer ended up getting much better value for his money then when he issued the order at a rock bottom price. Paying a 10% premium over the lowest bid will often reap you 20% more in value received.

The best bargain for your valuable money is where the buyer feels that he got a good deal, is pleased with the end result, his business is successful as a result, and the manufacturer is happy to have the order and got paid.

## IN CONCLUSION

It should be emphasized that each of the checklist points in the 9 key functions listed in the July-August 1987 issue could have whole articles written on possible recommendations and alternatives to consider. There are obviously many more questions that will require answers when building a microbrewery but hopefully you will find the answers suggested in these articles to some of the more key questions useful to you.

To all you aspiring Microbrewers, I raise a cold one to you, and wish you all success and luck.

*Reprinted from The New Brewer, Vol. 4, No. 6*

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