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HEATING, VENTILATING AND AIR CONDITIONING CONTRACTORS

BUSINESS AND INDUSTRY PROFILE

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College of Business and Administration

This publication was authored by Lynn Andersen-Lindberg, Business Management Services Institute and Donald Vaughn, Professor of Finance, both of Southern Illinois University. The publication was edited by Mike Kirchhoff, Office of Urban Assistance, Department of Commerce and Community Affairs.

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HEATING, VENTILATING AND AIR CONDITIONING CONTRACTORS

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12/27/90

HEATING, VENTILATING, AND AIR CONDITIONING CONTRACTORS
(SIC 1711)

GENERAL INDUSTRY INFORMATION

BUSINESS TYPE, INDUSTRY CHARACTERISTICS AND PROSPECTS

Nature of the Business

Heating, ventilating and air conditioning (HVAC) contractors, which have been assigned the Standard Industrial Classification (SIC) Industry Number 1711, are part of the major industry group number 171, which has been designated for construction -- special trade contractors. Industry group number 171 includes a variety of different combinations of plumbing, heating, and air

conditioning firms, including air conditioning contractors, heating contractors, plumbing piping contractors, plumbing and heating contractors, refrigeration and freezer contractors, steam fitting contractors, and ventilating contractors.

In 1985, the U.S. Department of Commerce and the U.S. Department of Labor estimated that 62,000 firms were operating in industry group 171 -- the plumbing, heating and air conditioning industry -- employing approximately 561,000 workers. Because the construction trade is highly seasonal in most areas of the country, it is not unusual for companies to have two or three permanent, full-time employees with one or two additional part-time, seasonal employees. The average annual salary of employees in this industry was approximately \$24,000 in 1985.

Many HVAC firms are incorporated, have been in business for several business cycles, and are franchised dealers for one or more of the major heating/cooling equipment manufacturers. They typically install, service and repair heating, ventilating and air conditioning systems for customers in all sectors of the economy. In addition, many HVAC firms are dealers for one of the major manufacturing firms such as Carrier Corporation. Some stock display models of central heating and air conditioning units, as well as sheet metal, ductwork, and other materials.

Industry Growth

U.S. Bureau of Labor estimates suggest that total employment, using a low to high estimate of growth in the HVAC industry, is likely to increase from 12 to 21 percent from 1984 to 1995. nevertheless, a large number of HVAC firms start and fail each business cycle. Generally, the success of firms in this industry is closely related to the number of housing starts in a given year.

Trends in the Industry

A major source of work in the industry is subcontracting work on new housing units or new construction contracts. Such contracts are tied closely to the status of economy, the business cycle and new construction.

In addition, retrofitting HVAC systems for residences and commercial businesses has been a major portion of expanded sales in the industry in recent years. Many commercial businesses in the nation were built prior to 1970 and many were not designed to be energy efficient. As a result, a market exists for upgrading systems through new technology and innovations. This includes installing electronically controlled heating and temperature units, replacing compressors and motors that may be inefficient

or no longer work, and evaluating structures to identify opportunities for greater energy savings in cooling and/or heating. This type of work activity is not as adversely affected by swings in the business cycle.

HVAC service contracts are another source of ongoing business opportunities. A service contract may offer a business or homeowner lower energy and maintenance costs (by maintaining the equipment at optimum conditions), faster response time, and budgeted expenses (with monthly payments). The price of individual service contracts varies widely, depending on the frequency of equipment failure, which might be influenced by age of equipment, stressful use, past maintenance and user knowledge. Business trends have less impact on service dealers since they are able to cover their fixed costs even when new construction contracts are in short supply. If the firm does offer service contracts, it must decide whether to have -the maintenance and repairs performed by its own workers, to have it done by regional repair centers, or simply to sell service contracts to a third party company that would perform the services and repairs.

MARKET OPPORTUNITIES IN VARIOUS SIZED COMMUNITIES

Market Data

One HVAC firm operates for about each 4,000 people in the U.S., according to County Business Patterns. Thus, a city of 20,000 with moderate population and business growth and some replacement and retrofitting of aging heating/air conditioning systems, should be able to support about five firms, each employing two to five people. A small community with a population of 3,000 might support one HVAC firm. Few firms are operated in smaller cities, but a firm in a nearby city might service smaller communities which do not have an HVAC firm.

Market potential and demographic data (e.g., average household income, number of households, and number of businesses) may be obtained from the local chamber of commerce, public library, or city and county governments. Existing HVAC firms may be contacted to determine what services they offer and what they charge.

Marketing Plan

Before starting an HVAC firm, the owner(s) should develop a marketing plan. A marketing plan is basically a blueprint for outlining possible customers for the business which should include important information about the venture. Topics that should be addressed include: whether or not the area can support the proposed venture; the existence of an unidentified market

niche that may be exploited; the level of competition in the area; the current customer base population, income, and growth trends; competitive pricing strategies; and a variety of other facets of the business that owners or managers need to know to develop a viable and profitable business.

Assistance in developing a marketing plan may be obtained from many sources some at cost, others for free. A few sources for assistance and information are:

- Small Business Development Centers located at colleges and universities throughout the state;
- Professional service companies such as accounting firms, private consultants, legal firms, etc.;
- Service organizations such as chambers of commerce or the Service Corps of Retired Executives (SCORE);
- Other public sources such as public libraries, college and university classes, etc.

COSTS/FINANCIAL CONSIDERATIONS

COSTS AND TYPES OF ASSETS NEEDED TO START THE BUSINESS

Capital Requirements

Trade literature suggests that cash-on-hand in a start-up HVAC firm should be budgeted at about 10 percent of the level of expected sales and that another 5 percent should be invested in equipment. Overall, initial investment factors to consider include the amount required for wages, six months of working capital, unforeseen expenses, supplies and equipment inventories, insurance coverage and building remodeling or improvements.

Average Expenses

The Almanac of Business and Industrial Financial Ratios provides expense breakdowns for corporations representative of major SIC industry groups, using IRS published data. The following expenses, listed as a percentage of revenues, provided in 1989 for firms with under \$100,000 in assets and for those with assets ranging from \$100,000 to \$250,000.

EXPENSE ITEMS	COMPANIES WITH ASSETS OF UNDER \$100,000	COMPANIES WITH ASSETS OF \$100,000 - \$250,000

Cost of operations	57.8%	63.0%
Compensation of officers	10.0	6.7
Repairs	0.4	0.3
Bad debts	0.1	0.4
Rent on business property	1.8	1.3
Taxes (excl. Federal taxes)	2.9	2.9
Interest	0.5	0.7
Depreciation/amortization	1.8	2.3
Advertising	0.6	0.7
Pension/benefit plans	0.2	0.7
Other expenses	18.8	17.6
Net profit before taxes	5.1	3.4

Average Balance Sheet Data

The chart below shows that current assets (72.2%) amount to roughly two times the level of current debts (37.9%). Net worth is about one-half of total assets. Inventory is relatively small in an HVAC firm. Fixed assets amount to about 5 to 6 percent of sales or approximately 17 percent of assets. Intangible assets, such as leases and leasehold improvements, amount to about 12 percent of assets.

The breakdown of assets, liabilities, and net worth for an HVAC firm in 1988, according to Dun and Bradstreet, was as follows:

ASSETS		DEBTS AND NET WORTH	
Cash and near cash	16.2%	Accounts payable	18.1%
Accounts receivable	36.2	Bank loans	0.8
Notes receivable	0.7	Notes payable	4.9
Inventory	11.4	Other current debts	14.1
Other current assets	6.7	Total current debts	37.9
Total current assets	72.2	Other long-term debts	12.7
Fixed assets	17.1	Deferred credits	0.2
Other non-current assets	11.7	Net Worth	49.2
Total assets	100.0%	Debts and Equity	100.0%

"Near cash" refers to checking or savings accounts that may be liquidated easily to cash. "Other noncurrent assets" generally refers to intangible assets such as leaseholds or leasehold improvements. "Fixed assets" are a mixture of land and buildings, cleaning equipment, and delivery vehicles.

"Accounts payable" are amounts owed to suppliers of inventories and equipment. "Bank loans" are amounts owed to lenders of capital. "Other long-term debts" include both equipment and mortgage notes.

Revenues and Profitability

Many of the smaller firms have less than \$500,000 in annual revenues, but the average firm is somewhat larger. The following data reflects information for a typical firm in 1988, according to figures published by Dun & Bradstreet, Inc.

Total assets	\$201,000
Net sales	\$680,000
Gross profits	33.1%
Net profit after taxes	5.7%

Three common ways of viewing "profitability" of a firm are profit margin (profit as a percentage of sales before consideration of taxes and sales, general and administrative expenses), return on assets (which is profit as a percentage of total assets) and return on equity (profit as a percentage of equity) for typical HVAC firms. An average HVAC firm has a mean net profit margin, after provision for income taxes, of approximately 5 to 6 percent of sales, asset turnover of about 3 times (about 15 percent of assets) and about 22 to 24 percent equity.

TYPICAL BUSINESS RATIOS FOR OTHER FIRMS IN THE INDUSTRY

The comparison of actual operations with typical, industry-wide ratios can be helpful in making decisions concerning service charges, expense category allocations, and realistic profit expectations. These ratios are also helpful in preparing projected financial statements, cash flow projections, income statements, and balance sheets for loan purposes, as well as comparing existing company data with industry averages to identify company strengths and weaknesses.

According to Dun and Bradstreet, the median key financial ratios for HVAC firms, during 1988, were as follows.

Solvency Ratios

Quick Ratio (cash plus accounts receivable/current liabilities)	1.4 to 1
Current Ratio (current assets/current liabilities)	1.9 to 1
Sales to Inventory (net sales/inventory)	31.7 times
Assets to Sales (total assets/annual net sales)	30.3%
Total Debts to Net Worth	93.3%

The quick ratio expresses the degree to which a company's current obligations (expenses) are covered by the most liquid assets, i.e., cash and customer payments due the company. The current ratio is a rough indication of the "cushion" between current obligations and a firm's ability to pay them from current assets.

Total debts to net worth compares total liabilities in the form of debt with owners equity, which for small firms usually does not exceed 100 percent. Thus, owners have more at stake than creditors.

Efficiency Ratios

Collection Period (accounts receivable/sales x 365)	42 days
Sales to Inventory (net sales/inventory)	31.7 times
Assets to Sales (total sales/annual net sales)	30.3%

The quality of the receivables (degree to which customers pay their bills on time) of a company can be determined through the collection period, with allowances made for possible variations in selling terms if the company differs from the industry. The sales to inventory relationship is a guide to the rapidity at which merchandise is being moved, which has a direct effect on the flow of funds into the business. The assets to sales ratio ties in sales and the total investment that is used to generate those sales. A firm can be "overtrading" (handling an excessive volume of sales in relation to investment) or "undertrading" (not generating sufficient sales to warrant the assets invested).

Profitability Ratios

Return on Sales (profit after tax/annual net sales)	4.2%
Return on Net Worth (profit after taxes/net worth)	22.8%

Return on sales reveals the profits earned per dollar of sales and therefore measures the efficiency of the operation and is an indicator of the ability to withstand falling prices, rising costs and declining sales. Return on net worth return on equity) is used to analyze the ability of the firm's management to realize an adequate return on the capital invested by the owners of the firm. Generally, a relationship of at least 10 percent is regarded as a desirable objective for providing dividends plus funds for future growth.

Although the above ratios reflect a median for the return on sales of 4.2 percent, larger firms in this industry generally have a larger profit percentage due to economies of scale.

FINANCING METHODS

The ability to raise initial capital is critical for business start-ups. According to a survey conducted by Western Illinois University, one-half of entrepreneurs reported difficulties in obtaining financing, including both initial and working capital. The survey also found that entrepreneurs relied heavily on personal funds, in addition to investments from family and friends. In fact, the survey indicated that approximately one-

half of initial funds came from these sources. On the average, bank loans accounted for nearly one-third of initial capital. Other private lenders, government agencies, venture capital and stock placements only rarely provided initial capital for businesses.

About one-half of both goods and service-producing firms surveyed had applied to lending institutions for credit. Only five percent of goods-producing firms had been denied credit more than once, while approximately 18 percent of service-producing firms reported credit denials. The most frequent reasons for credit denial included lack of adequate collateral and a policy of not lending to the type of business applying for credit. Since obtaining credit is difficult, many entrepreneurs find it necessary to finance a business through a combination of sources of funds. Following are descriptions of several common types of financing.

Equity Sources

Equity sources of funds are the entrepreneur's personal funds or assets or the funds or assets of other investors in the business. Banks often require a minimum equity investment of 20 to 25 percent.

Personal Savings or Insurance -- Individuals with bank passbooks, certificates of deposit, U.S. savings bonds, permanent life insurance (with a cash surrender value), or other savings should view these as a source of financing. Conversion of these savings (or borrowing funds using these savings as collateral) should be explored carefully to determine the effect on the family if funds are not repaid.

Personal or Family Investors -- Next to personal assets, this is the most commonly used source of equity financing and perhaps the one source most abused. A business owner who secures equity funds from family members or friends should enter the relationship on a strictly professional business basis. Potential family conflicts which might result from the business might be avoided by preparing a simple contract to designate the details of the business arrangement.

Personal Assets - An individual may have accumulated some equity in personal assets such as a vacation home, a second vehicle, or recreation equipment such as a boat, camper, etc. People starting a new business and trying to finance the business could sell these assets to generate funds to capitalize the business. This offers the advantage of not having loan debt to repay during the early years of a business and also shows potential investors and lenders the commitment of the owner.

Debt Financing

Entrepreneurs should be aware of typical lending practices, sources of funds and different types of credit (and their respective costs) before approaching lending sources.

Institutional Investors -- Banks, savings and loans, and commercial credit companies expect the small business owner to make a significant personal investment (equity) in the business prior to any lending activity. The lack of personal investment is viewed as a sign of greater risk and less commitment on the part of the owner. Smaller loans can sometimes be obtained through a bank's consumer loan division. Security in the form of a second mortgage on the borrower's house or a lien on property such as an auto is usually required.

Leasing Agents -- Leasing companies allow small start-up firms to obtain needed equipment with a small cash down payment and regular monthly payments. Leasing has advantages and disadvantages both for the leasing agent and the small business that rents equipment. Leasing companies may be able to use favorable federal tax advantages (such as depreciation allowances), and thus lease terms are often only slightly higher than if the asset were financed with a bank note. However, if the lease is an operating contract (not a lease to purchase), the leasing company retains ownership.

Trade Credit -- Although it is often overlooked, trade credit is a frequently used means of debt financing. Trade credit is extended from suppliers who accept deferred, rather than immediate, cash payment. Trade credit conceivably could be generous enough to allow use or resale of the product, so that the customer's cash can be used to pay the supplier.

Factoring Companies -- Another mechanism for assisting business owners is improving cash flow-through factoring, or the sale of their accounts receivable. Factoring companies purchase accounts receivable from business owners. The business owner generally pays the factoring company a fee or percentage of the invoice (based on the strength of the receivable) for the transaction as well as interest costs of borrowing money, but can obtain cash without waiting the normal 60 to 90 days for payment.

Public Sources

Public sources of funds include federal, state or local governments which may loan money to small or emerging businesses at relatively low rates of interest as a method to improve the economy. Public sources also generally take a second position on

the collateral so that the bank has first claim to the assets if the loan defaults. Although public funds have their limitations, entrepreneurs should explore such funds. Most public sources of funds require 20 to 25 percent owner equity, additional private bank financing, and some guarantee that job creation will occur.

Federal Sources - An example of a public source of funds is the U.S. Small Business Administration (SBA), which offers a variety of loan programs to eligible existing and start-up small businesses which cannot borrow on reasonable terms from conventional lenders without government assistance.

Local Revolving Funds - Many communities in Illinois use available economic development funds to establish revolving loan pools to promote business and industrial growth.

State Loans - The Illinois Department of Commerce and Community Affairs offers several important financing programs to help start-up businesses. Each of these should be considered, along with their associated requirements. For more information on financing programs, contact the Illinois Small Business Hotline (1-800-252-2923).

GENERAL START-UP ISSUES

FORM OF ORGANIZATION

There are three basic forms of business organization, each of which offers distinct advantages and disadvantages for a prospective business owner. The main considerations in selecting a form of organization include:

- Cost and complexity of formation;
- Tax and securities law implications;
- Need for attracting additional capital;
- Investors' liability for debt and taxes; and
- The goals and purpose of the enterprise.

Each of these should be thoroughly discussed with an attorney and an accountant prior to selecting one of the following forms of business.

Sole Proprietorship -- A sole proprietorship is owned and operated by an individual. Advantages of this form of organization include ease of formation and relative freedom from government controls and restrictions. Disadvantages include less access to capital and financial resources. Also, this form of business organization provides less protection with regard to personal liability. For instance, the owner may be required to sell personal property, including home, car, etc., to repay debts

resulting from the business.

Partnership - Generally, a partnership is defined as two or more individuals carrying on an association as co-owners of a business for profit. Typical partnership agreements are in writing and are prepared by an attorney. The agreement defines how much owner equity each partner must contribute, the extent to which each partner will work in the company and the share of the profits or losses to be received by each of them. It is desirable to have the agreement prepared by an attorney. As with sole proprietorship, a general partnership exposes the owners to personal liability. If the business is not successful and the partnership cannot pay all it owes, the general partners may be required to do so using their personal assets. Limited partners are exposed only to the extent of their investment in the partnership.

Corporation - A corporation is a distinct legal entity and is the most complex form of organization. A corporation may sell shares of stock, which are certificates indicating ownership, to as many people as is desirable. The shareholders then elect a board of directors, which selects a president and other officers who run the company on a day-to-day basis. Among the advantages of corporate formation are limited liability of the shareholder and ease of transferring ownership.

S Corporation -- Electing S Corporation status is another option when starting a business. In general, an S Corporation does not pay a tax on its income. Instead, the income and expenses of the corporation are divided among its shareholders, who then report this data on their own income tax returns. To qualify for S Corporation status, a corporation must meet several requirements, one of which limits the number of shareholders to 35. All shareholders must also consent to the S Corporation status.

For further information regarding S Corporations, contact the Internal Revenue Service (IRS) at 1-800-424-1040 or request a copy of Publication 589, Tax Information on S Corporations, by calling 1-800-424-3676.

LICENSING/REGISTRATION

Assumed Names Act -- Once a decision has been made regarding the form of organization for the business, it must be registered to legally conduct business in Illinois. Under the Illinois Assumed Name Act, sole proprietorships and partnerships must register with the county clerk if the name of the business will operate under a name other than the owner's full legal name (e.g., "John Doe" would not need to file; "John Doe's Cleaners" would). Limited partnerships and corporations are required to register

with the Illinois Secretary of State's Office. More detailed information on business registration is contained in the "Starting a Small Business in Illinois" handbook, which can be obtained by contacting the Department of Commerce and Community Affairs' Small Business Hotline at 1-800-252-2923.

Certificate of Registration -- Most businesses must register with the appropriate state agency to submit tax or informational returns or to collect and remit sales taxes. In Illinois, business owners must contact the Department of Revenue to determine if an Illinois Business Taxpayer Certificate of Registration (Business Tax Number) is required for the business. Contact the Department of Revenue at either of the addresses listed under Information Sources.

Unemployment Insurance Liability -- Businesses that hire employees may be required to make unemployment insurance contributions to the state. Liability is determined by the Illinois Department of Employment Security (DES). The form, "Report to Determine Liability," and instructions for completion are available through the Small Business Hotline or by contacting either of the DES offices listed under Information Sources.

Local Regulations -- Most local jurisdictions require that business operation licenses be applied for and renewed annually. Where crowds of people are in attendance, fire codes concerning rest rooms and fire exits are in effect. Fire and safety inspections may be made periodically by the local fire and safety inspector. Contact the city or county clerk for information on licensing, inspections, sign restrictions, and other local regulations.

Federal Employer Identification Number (FEIN) - Every partnership, corporation and S Corporation must have a FEIN to use as its taxpayer identification number. A sole proprietorship must also have a FEIN, if it pays wages to one or more employees or files any excise tax returns, including those for alcohol, tobacco or firearms. (Otherwise, a sole proprietor can use his or her social security number as a business taxpayer identification number.) To apply for a FEIN, use form SS-4, Application for Federal Employer Identification Number. To receive an application contact the IRS Hotline at 1-800-424-3676. The application is also included in the One Stop Business Start-Up Kit and can be obtained by calling the Illinois Small Business Hotline at 1-800-252-2923.

TAXES

Taxation for small businesses can be quite simple or very complex, depending on the size and type of operation. The

following list outlines the major taxes which may impact a business. Of course, the tax liability of each business will be different, based on sales volume, form of organization, etc.

Business Taxation

Income Tax - Every individual, corporation, trust, and estate residing in Illinois or earning or receiving income in Illinois must pay an income tax based on net income. A sole proprietor must pay individual income taxes on earnings from the business. In a partnership, each partner must pay taxes on the distributive share of partnership income. Corporations must pay a corporate income tax.

Franchise Fees -- In addition, corporations are assessed a franchise tax each year. Corporate franchise taxes are administered and collected by the Secretary of State's Office.

Replacement Tax -- Illinois does not have a personal property tax, but does have a personal property replacement income tax. The replacement tax is also applied to the net income of partnerships, corporations, and trusts. S Corporations are subject only to replacement tax.

Sales Taxes

Four categories of taxes comprise the state and local sales taxes. These are the Retailers' Occupation Tax, the Use Tax, the Service Occupation Tax and the Service Use Tax. State, county and municipal governments, and certain mass transit districts may levy Retailers' Occupation, Use and Service Occupation taxes, subject to criteria and rate limits established by Illinois law. Additional information regarding the various types of sales taxes may be obtained by contacting the Illinois Department of Revenue at 217-782-2972 or 1-800-732-8866.

A list of items which are exempt from Illinois Sales Tax is contained in "Starting a Small Business in Illinois" which can be obtained through the Illinois Small Business Hotline (1-800-252-2923). For further information on Sales Tax regulations or the Illinois Retailers' Tax Booklet (NUC-19), contact the Department of Revenue at 217-782-2972 or 1-800-732-8866.

Real Estate Taxes

All for-profit real estate owners are required to pay property taxes. The property tax rate is determined by local taxing districts and taxes are paid to the township or county tax collector in the year following assessment.

Withholding Taxes

Certain taxes, including state and federal income taxes and FICA (Social Security), must be withheld from employee wages and remitted to the government. You may be required to register with both the federal government and the State of Illinois for tax withholding purposes.

Federal Withholding -- To register with the federal government, contact the Internal Revenue Service at 1-800-424-3676 and request: Your Business Tax Kit (YBTK) for either a sole proprietorship, partnership or corporation; Tax Guide for Small Business (Publication 334); and Employer's Tax Guide (Publication 15).

State Withholding - To register with the State of Illinois, contact the Illinois Department of Revenue Hotline at 1-800-732-8866 or write the Department at:

100 W. Randolph, Concourse 300
Chicago, Illinois 60601
312-814-5258

101 West Jefferson Street
Springfield, Illinois 62794
217-785-3707

BUSINESS SERVICES

Legal Counsel

Attorneys can provide services fundamental to the success of the business. A competent attorney can advise on such issues as choosing the most appropriate type of business organization; complying with local, state and federal regulations; obtaining licenses and permits; preparing contracts; and resolving tax questions.

Attorneys also can provide professional help when dealing with other parties such as financial institutions, owners of possible business locations, union officials, governmental bodies, franchising companies, suppliers and customers. In addition, problems may arise requiring the services of an attorney, including collection problems with customers, disputes with creditors or employees, or expansion opportunities.

There are several methods for selecting an attorney. An initial course of action might be to seek recommendations from other business owners. Another method of finding an attorney is to contact the Illinois State Bar Association Lawyer Referral Service at 1-800-252-8916. The Martindale-Hubbel Law Directory may also be helpful. It contains a listing and rating of attorneys in your city; a copy may be found at the local library. The public library is also a source for reference books on legal

topics. One such book is Small Business Legal Advisor by William A. Hancock, published by McGraw-Hill.

Bookkeeping

Access to proper information is provided by a sound bookkeeping system. Functions of a good system include:

Receipts and Expenses -- Creating and maintaining an accounting system for the accurate and timely recording of the company's cash receipts, disbursements, sales and operating expenses.

Financial Statements -- Preparing periodic financial statements (balance sheet and profit and loss statement) and establishing systems that track accounts receivable and payments due.

These responsibilities may be undertaken from within or outside of the business, depending on the size and nature of the business and the owner's experience and available time. An accountant, attorney or banker can help determine a firm's needs for a bookkeeper or bookkeeping service.

Accounting

In addition to bookkeeping requirements, a need may arise for the services of a certified public accountant (CPA), an accountant who has passed a written examination prepared by the American Institute of Certified Public Accountants and who has received a state license for the public practice of accountancy. Most CPAs provide the following services:

Auditing - Although a bookkeeper employed by the firm may maintain accounting records and prepare financial statements, banks and other lenders frequently require an independent audit prior to granting a loan and during the loan repayment period.

Tax Preparation -- The tax services provided by CPAs include planning transactions for the lowest present and future tax liabilities, preparation of tax returns, conferences with taxing authorities who are examining prior years' tax returns and estate planning.

Consulting -- Some CPAs provide assistance in reducing costs, improving reports, installing or upgrading accounting systems, budgeting and forecasting, conducting financial analyses, controlling production, controlling quality, compensating personnel, and managing records.

The Independent Accountants Association of Illinois (IAAI), established in 1949, can refer a competent accountant to the

potential Illinois small business person. Many of the IAAI accountants are "Enrolled Agents," licensed to represent a client before the IRS should the client's tax return be audited. For more information, write the Independent Accountants Association of Illinois, Elk Grove Village, Illinois 60648, or call 312-593-1179.

Insurance Coverage

A well planned insurance program is essential for protecting a business from unforeseen losses and significant financial burdens. In organizing an insurance program, there are four basic considerations: recognize the perils facing the business and the potential loss from each; investigate the methods by which the cost of coverage can be reduced, which includes "shopping" for appropriate insurance plans; and prepare an insurance plan that is compatible with the operation and goals of the business. A qualified insurance agency or broker can explain options, recommend the best coverage and help save money.

Four types of insurance coverage are essential: fire, liability, vehicle and workers' compensation. Other desirable types of insurance coverage include business interruption, crime, and key employee.

MANAGEMENT CONSIDERATIONS

DEVELOPMENT AND SITE LOCATION

Location

Because HVAC work is conducted on the site of the commercial or residential customer, the HVAC business may choose to locate its facilities in any of a number of locations. Some firms locate in commercial or industrial districts. In larger cities, there is a tendency to locate between the downtown district and the outlying residential sections.

The location should be accessible to large delivery trucks. Adequate space should be available for expansion, especially the addition of storage space, and there should be enough room for off-street parking. A sign should be prominently displayed, and the office should be attractive and back room space should be adequate for storage.

Zoning

When selecting a location and a specific site for the business, consideration must be given to local zoning requirements. Some communities forbid, through zoning ordinances, the establishment

of home-based businesses. It is essential to check these local restrictions prior to contracting to rent, lease or buy a property for the business.

Health and Safety Considerations

Health and safety requirements, many of which are mandated by the Occupational Safety and Health Administration (OSHA), are also important factors in the location of the business. Health and safety issues to consider include proper ventilation and fire extinguishing systems, as well as the use of hazardous materials. Some of the equipment and building materials may contain components (such as asbestos) which would be considered health hazards. Removal of asbestos should be performed in accordance with federal environmental standards (40 CFR, subpart M, sec. 61.140 et seq.).

According to federal regulations, asbestos-containing demolition material must meet the following conditions to be disposed of properly:

- The asbestos-containing material (ACM) must be wet.
- The ACM must be containerized and the containers must be properly labeled per federal regulations.
- The ACM must be handled by a certified asbestos worker who has annually completed a standard asbestos course approved by the state or federal EPA and who has successfully completed an annual biomedical examination per OSHA standards.
- To perform demolition of ACM in Illinois schools (K-12), workers must be licensed by completing the requirements for certification and submitting a license application and \$25 fee to the Illinois Department of Public Health.

Upon completion of the above requirements, the material can be disposed of in any landfill authorized to receive demolition materials.

EXPERIENCE AND TRAINING NEEDS

Management/Owner Training

Managing an HVAC operation requires the same general skills of any small firm including general (front office) management, marketing, attention to high quality goods or services and financial control and accounting. The owner/manager of an HVAC store should have experience as a plumber or electrical engineer, or both. Some jobs undertaken by an HVAC firm may involve plumbing, while others may require metal working and electrical

wiring skills.

Employee Training

At least one of the employees should be trained in electrical controls, as technology in the field appears to be moving toward energy management with sophisticated controls in such areas as automatic timing of on/off for heat/air conditioning, changing temperature setting for the water in the boiler depending on the outside temperatures and thermostat setting, or providing variable air current when little heating or cooling is needed.

One of the key people in an HVAC firm is the employee responsible for preparing bids and estimates. This position generally requires a background in cost accounting or engineering. This employee projects the amount of labor, materials, and other expenses involved in a job being bid. The key is to bid low enough to book sufficient jobs to employ the labor force but to provide a reasonable profit to the firm. This function is critical because a bid that is too high will likely not be accepted and a bid that is too low may not provide a sufficient profit margin for the firm to succeed.

At least one worker should be a licensed plumber and one should be a licensed and well-trained electrician. Two or more people might be trainees.

KEYS TO SUCCESSFUL MANAGEMENT

Markets

In order to be successful, the management of an HVAC firm must know its competition, have a vision as to the markets that it can cultivate, promote a helpful atmosphere for both clients and employees, and strive for profitable clients and accounts. Management of an HVAC firm should be able to gauge the approximate saturation point (at which the market is not profitable) in a given market area. Markets should be developed where growth potential exists and where the firm has a price or some other advantage. Effective labor and supplies cost controls should be followed by the owners and employees. The firm's operating objective should be to develop a good reputation in the industry for quality work and equipment at a fair price.

Organization

A well-run organization should have a clearly defined organizational structure with key personnel to work in the areas of management, engineering, marketing, and accounting/finance. In a small business, the responsibility for most of these roles ultimately rests with the owner/manager of the firm. In the

construction business, most jobs are won on the basis of bidding on solicited job specifications. Thus, the cost estimator is extremely important to the success of the business.

Customer Relations

All employees in an HVAC firm should be courteous to the clients. Outside of qualifications, this is the most critical issue for any business. If a firm is unable to maintain a friendly, courteous relationship with its customers, it will not be successful.

Employee Relations

Employee attitudes and perceptions play a great role in the success of a business. Poor employee morale can impact on all areas of the business, from customer relations to the quality of work. As a result, it is important to maintain a friendly, open relationship with employees at all times. In addition, it should be the policy of the firm to pay an adequate wage and to provide health care coverage, sick leave, promotional opportunities and other benefits. On the whole, these activities will help attract and retain well trained, high quality employees.

Employee Scheduling

An efficient operation should attempt to employ each worker on jobs for billing for at least six or seven hours of each eight hour shift. If not, the downtime is at regular wage rates, so it will reduce the gross profit margin. Having enough, but not an excessive amount of, labor is of vital importance. Scheduling jobs to minimize travel time or in some priority order is also important. Because many customers call in their orders by telephone, the operator should be friendly and offer sympathy, but promises should not be made that cannot be kept.

Job Scheduling

Jobs should be categorized into three groups: immediate, soon, and deferred. New construction jobs generally have the highest priority. Property owners usually expect the installer of the heating/air conditioning/ventilation system to service the installation. The installing firm is usually the first called when there is a malfunction. Although many dealers try to service their repeat customers on a high priority basis, they usually fall into second place. New customers are sometimes not accepted when the time schedule of the current work force is already full.

However, common sense should also play a role in scheduling.

For example, repairing the motor or cooling system on a supermarket's food freezer should be performed as soon as possible. Certain types of jobs can be postponed, but when an HVAC firm accepts work as a subcontractor on a new structure, the scheduling of the work on a timely basis must be done so as not to delay other subcontracting crews. For example, heating ducts and electrical wiring must be installed after the wall studs and roof are in place but before the insulation and inside walls are added. A firm that cannot schedule the work as needed soon finds that others are awarded the jobs even though they may have higher prices.

Advertising

Spot radio ads, newspaper ads, telephone directory yellow pages listings, and direct contact (telephone or mailings) are some methods of advertising. Company vehicles often carry company logos and/or a brief listing of services offered, along with a business telephone number.

INFORMATION SOURCES

There are a variety of resources available to assist with starting a business. Local libraries, chambers of commerce, community colleges, and universities are excellent sources of information.

Small Business Hotline

In Illinois, many of the forms needed to start a business may be obtained from the Illinois Small Business Hotline, a program of the Illinois Department of Commerce and Community Affairs' Small Business Assistance Bureau. State business forms, permit and license information, and general business information, such as the "Starting a Small Business In Illinois Handbook," are available from the Small Business Hotline (1-800-252-2923).

Business Development Center Network

The Illinois Business Development Center Network and Service Corps of Retired Executives (SCORE) offices can provide technical assistance, business plan development, finance, marketing, management, international trade, government procurement, energy management, and commercialization of technology-related products. Additional information on these services is available through the Small Business Hotline.

Small Business Resource Center

The Small Business Resource Center is a Chicago-based center that

provides information on area Small Business Development Centers and other state and local service providers.

The U.S. Small Business Administration offers many publications for annual fee. A list of these management aids (SBA 115) is available from the Small Business Hotline.

Several sources of information are useful for improving the level of profitability of an HVAC firm or for learning more about this type of operation. These include trade associations, reference books and directories, periodicals, ratio studies, investment services, and government assistance. A list of these for the HVAC industry is given below.

Trade Associations

Air Conditioning Contractors of America. 1513 16th St. N.W., Washington, DC 20036. (202) 483-9370.

National Association of Plumbing-Heating-Cooling Contractors. P.O. Box 6808, 180 S. Washington St., Falls Church, VA 22046. (703) 237-8100.

Refrigeration Service Engineers Society. 1666 Rand Rd., Des Plaines, IL 60016. (708) 297-6464.

Directories and Reference Books

Air conditioning, Heating & Refrigeration News Directory Issue. Business News Publishing Co., 755 W. Big Beaver Rd., Troy, MI 48084. (313) 362-3700.

Heating Equipment Wholesalers. American Business Directories, Inc., American Business Information, Inc., 5711 S. 86th Circle, Omaha, NE 68127. (402) 593-4600.

Heating/Piping/Air Conditioning - Info-Dex Issue. Penton Publishing Co., Two Illinois Center Building, Ste. 1300, Chicago, IL 60601. (312) 861-0880.

Periodicals

Air Conditioning, Heating and Refrigeration News. Business News Publishing Co., P.O. Box 2600, Troy, MI 48007. Weekly. (313) 362-0317.

Contracting Business. 1100 Superior Ave., Cleveland, OH 44114. (216) 696-7000.

Plumbing engineer. Delta Communications, Inc., 385 N. York,

Elmhurst, IL 60126. (708) 530-6161.

RSC (Refrigeration Service and Contracting). Business News Publishing Co., P.O. Box 7021, Troy, MI 48007.

Financial Ratios

Almanac of Business and Industrial Financial Ratios. Prentice-Hall Inc., 1818 Ridge Rd., Englewood Cliffs, NJ 07632. (800) 634-2863 or (201) 592-2000.

Annual Statement Studies. Robert Morris Assoc., 1 Liberty Place, 1650 Market St., Philadelphia, PA 19103. (215) 851-9100.

Industry Norms and Key Business Ratios. Dun and Bradstreet Credit Services, 1 Diamond Hill Rd., Murry Hill, NJ 07974. (800) 351-3446 or (201) 665-5330.

Government Publications

CENDATA. U.S. Bureau of the Census, Data Access and Use Staff, Suitland, MD 20233. (301) 763-2074.

County Business Patterns - Illinois. U.S. Dept. of Commerce, Bureau of the Census. Order from: Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. (202) 783-3238.

Statistics of Income Bulletin. Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. (202) 783-3238.

Government Assistance

Illinois Department of Commerce
and Community Affairs
Small Business Assistance Bureau

Springfield Office:
620 East Adams Street
Springfield, IL 62701
(217) 785-7546

Chicago Office:
100 West Randolph Street
Suite 3-400
Chicago, IL 60601
(312) 814-3263

Illinois Department of Revenue

Springfield Office:
101 West Jefferson
Springfield, IL 62794
(217) 785-3707
1-800-732-8866

Chicago Office:
100 West Randolph
Chicago, IL 60601
(312) 814-3141

Illinois Department of

U.S. Small Business
Administration
Business Development Division

Employment Security

Springfield Office:
 1300 South Ninth Street
 P.O. Box 5657
 Springfield, IL 62705
 (217) 793-3846

Chicago Office:
 401 South State Street
 Chicago, IL 60605
 (312) 793-4880

Springfield Office:
 511 West Capitol
 Springfield, IL 62704
 (217) 492-4416

Chicago Office:
 219 South Dearborn Street
 Chicago, IL 60604
 (312) 353-5428

For more detailed information about the sources listed in this section, contact your local library for the following publications by category:

- Trade Associations -- Encyclopedia of Associations. Gale Research Company, Book Tower, Detroit, MI 48226.
- Directories and Reference Books -- Directories in Print. Gale Research Company, Book Tower, Detroit, MI 48226.
- Periodicals -- Gale Directory of Publications. Gale Research Company, Book Tower, Detroit, MI 48226.
- Financial Ratios and Government Publications -- Encyclopedia of Business Information Sources. Gale Research Company, Book Tower, Detroit, MI 48226.